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THE USE OF A MUSICAL TUTORING EXPERIENCE

IN A COMPENSATORY EDUCATION PROGRAM

by

Margaret Eileen Burdge

A thesis submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Family and Child Development

UTAH STATE UNIVERSITY

Logan, Utah

1973

ACKNOWLEDGMENTS

I want to express my deepest gratitude to Dr. Carroll Lambert. Her patience and unlimited professional talents have not only seen me through the completion of my graduate work but continues to guide me as I pursue my goals in the field of early childhood education.

Sincere appreciation goes to Dr. Don Carter and Mr. Warren Burton who have often been sources of inspiration throughout my college career. Their valuable suggestions and encouragement were also essential to me in the completion of this paper. I would like to thank Mr. Larry Smith for filling in at the last minute for Mr. Burton who was unable to be here to approve the final copy.

Most special thanks go to my parents, Jean Burdge and Jim Burdge, to my good friend and teacher, Dr. William Ramsey, and to Mike and Eli, without whose loving support and encouragement my graduate work would never have been completed.

Margaret Eileen Burdge

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ABSTRACT

The Use of a Musical Tutoring Experience
in a Compensatory Education Program

by

Margaret Eileen Burdge, Master of Science

Utah State University, 1973

Major Professor: Dr. Carroll Lambert
Department: Family and Child Development

Language development of pre-school children was studied as it is related to a musical tutoring experience. Nine musical tutoring sessions, in addition to those of the regular curriculum, were given to the experimental group while the control group received no such tutoring experiences.

The experimental group, at the conclusion of the musical tutoring sessions, scored significantly higher than the control group when tested on the specific language concepts stressed in the tutoring sessions. Because the findings were significant the hypothesis stated as, ". . . there will be a significant difference between the experimental group, which will have the supplemental music tutoring experience, and the control group which will not have that experience," was held tenable.

(58 pages)

INTRODUCTION

Origin of the Problem

Teachers in compensatory education have a great responsibility to their pupils in the area of language development. In the case of ghetto Negro children's language some feel they have a deficiency, while others argue that they speak their own language, "ghettoese." Bi-lingual children, such as Spanish-Americans, may have the disadvantage of coming from homes where reinforcement for learning standard English is not available. Whatever the reasons for their specific peculiarities, all of these children share the common problem of being at a disadvantage upon entering the public schools. There they are met by middle-class, standard English-speaking teachers and classmates who, unless they are tuned to the problems of the child who speaks another language, are insensitive to the special needs of their disadvantaged associates.

Compensatory education of these disadvantaged children begins in the pre-school years and includes training in all areas of pre-school learning, especially in language development. Language is specifically implemented into all possible phases of the compensatory education program in order to facilitate as quickly as possible, these children's language abilities.

Engelmann (1969), and Griffin (1968) have done some work in the area of using music to facilitate language development, but neither of them made a study to find out exactly how helpful singing can be.

In an experiment by Jersild and Bienstock (1935) children's ability to keep time was studied. A group of "problem children" showed gains which were concluded to be gains in interest and cooperation rather than in actual ability. This illustrates the interest which music holds for pre-school children.

Updegraff (1938) also showed an increase in the interest of the children he worked with after teaching them nine new songs over a period of time.

Colby (1935) found that pre-school children were not successful when trying to learn to play a six-holed fife and therefore concluded that time would be better spent on folk singing.

The foregoing research indicates that the singing time might be a valuable tool for facilitating language development in pre-school-aged children. For this reason the investigator has chosen singing and its relationship to the language-learning of disadvantaged children as the subject of her study.

Purpose

It is the purpose of this study to investigate the effects of using singing as a musical tutoring supplement to a regular Head Start classroom experience, and the tutoring experience will focus on learning labels as well as prepositions.

Hypothesis

It is hypothesized that there will be a significant difference between the experimental group, which will have the supplemental musical tutoring experience, and the control group, which will not have that experience, in their

development of abilities to use labels and prepositions, after the tutoring experience.

REVIEW OF LITERATURE

The literature reviewed here will be concerned with two major areas, language development and music for the pre-school child. The section on language development will cover beginning language development and the means by which a child acquires language. It will also discuss the importance of language in the cognitive development of the pre-school child. Various home environments and pre-school language development programs, and their effect on the child will also be reviewed.

Music in the pre-school will make up the second section. It was felt by the experimenter that this review should cover the over-all importance of music for nursery school children as well as the relationship to language development. As in many other areas of development, the pre-school years are a crucial period for fostering musical abilities (Jersild and Bienstock, 1934). Therefore, objectives in music experiences should always include musical objectives as well as objectives in whatever subject for which music is being used as a vehicle.

Language Development

Brown (1964) indicates that children utter their first intelligible word some time in the second six months of life. They run around labeling household items (chair, table, etc.), actions (run, play, etc.), and a few qualities (good, bad, etc.) in the next few months. By about eighteen months they begin

two-word utterances such as "dog run." Some 36-month-old children are able to produce all the major varieties of simple sentences up to ten or eleven words in length. Brown (1964) finds that children usually learn English from simplified, repetitive, and idealized dialect.

Imitation is another task that Brown studied. In imitating their mothers, children reduce the length of the sentence but retain the order in which the words appear. They are also highly systematic in choosing the words they wish to retain. They choose mostly nouns, verbs, and a few adjectives but may include exceptions such as initial pronouns, prepositions, and the indefinite article "a." Some examples of imitation are:

<u>Mother</u>	<u>Child</u>
He's going out.	He go out.
That's an old time train.	Old time train.

According to Brown, "So long as a child speaks correctly, or at any rate so long as he speaks as correctly as the adult he hears, there is no way to tell whether he is simply repeating what he has heard or whether he is actually constructing." (Brown, 1964, pp. 144-145)

John and Goldstein (1964) focused their research on the shift from labeling specific and often single referents to using words for categorizing objects, actions, or attributes. They show that a child's particular social context either hampers or enhances this shift. "Children develop and test their tentative notions about the meanings of words and the structure of sentences chiefly through verbal interactions with more verbally mature speakers." (John and Goldstein, 1964, p. 226)

Werner and Kaplan (1950) cite two ways in which children learn the meaning of a word. The first is in agreement with John and Goldstein who stress the importance of imitating a more mature verbal speaker. It is direct and explicit, the object or word is named or defined for the child by an adult. The second way is, however, direct and implicit, through experience with concrete and/or verbal contexts.

It is pointed out by Behrens (1939) that the meaning of a word changes as one's experiences with it multiply and change.

. . . meaning for the objectivist simply implies that the child in repeated experiences reacts in varied ways to the same stimulus in different situations. When the total situation of which the object is a part varies, the reaction too changes. Thus a variety of responses comes to be associated with a particular object. Hence, when the object is later encountered the child does not react to it as he formerly did, but some of his responses are those which were called out by other parts of past situations. Thus we find that the more varied the experiences in which that object is capable of eliciting. It is only through the gradual acquisition of experiences that objects come to have a broad and useful meaning. (Behrens, 1939, pp. 335-336)

In a study by Stern (1965) it was shown that knowing a general class label, such as bird and toy had a significant advantage in problem solving--the object being to discover the common concept--over knowing the more specific instance label such as "robin" and "doll." One-hundred-forty first grade children and one-hundred-thirty-seven kindergarteners were used. When they were tested on a new set of concepts the children who were taught the general class label scored significantly higher than those who learned the instance label.

It was pointed out by Barbe (1968) that, "there is an ever-increasing awareness that development of language is a most important skill for the young child. The child who fails to acquire adequate and efficient language skills is handicapped throughout the remainder of his life." (Barbe, 1968, p. 18)

Success in school and more specifically in learning to read is dependent on a rich background and experience with language skills. Scores on intelligence tests are affected greatly by early language experience.

Deutsch agrees that language is one of the most important areas in cognitive development. He is quoted as saying,

Language is probably the most important area for the later development of conceptual systems. If a child is to develop the capabilities for organizing and categorizing concepts, the availability of a wide range of appropriate vocabulary, of appropriate context relationships for words and the ability to see them within their various interrelationships becomes essential. Sometimes the most productive training can be done in the third and fourth and fifth years of life in the language area. (Deutsch, 1963, p. 194)

According to Dawe (1942) language ability and intelligence are highly related, and language ability is even more closely related to mental age than to chronological age.

Symonds and Daringer also feel that,

Sentence structure in a language is a key to the logic and structure of thinking, inasmuch as the sentence is the smallest complete unit of thought. Growth in the power to form complete, concise, balanced, consistent sentences is an index of the growth in clear and accurate thinking. (Symonds and Daringer, 1930, p. 50)

Kohlberg contradicts many researchers who believe that an enriched environment which enhances language ability will therefore, enhance cognitive ability. He states:

There is no direct experimental demonstration of this assumption, nor is there as yet any evidence that language-focused preschool programs are of any greater value than any other preschool programs in leading to improved cognitive functioning. The assumption, however, follows from so many different points of view that it seems extremely plausible. (Kohlberg, 1968, p. 1040)

Kohlberg then refers to the Piagetian view that cognitive development in the later preschool years is not directly caused by increased verbal labeling or increased grammatical structuring. However, language may aid cognitive development in achieving its forms of equilibrium by a more advanced schematization and a more mobile abstraction. In summary, Kohlberg says:

For the present, however, it must be stressed that language achievements should not be confused with general cognitive development. It is evident that the education of language achievement may have definite values apart from its effect upon general cognitive development, but it is unfortunate if educational thought is based upon a theoretical confusion between the two. (Kohlberg, 1968, p. 1044)

There have been several studies on the relationship between environment and language development. The first one reviewed here is concerned with parental occupational status and speech sound development. Irwin (1948) took one group of children from families of laboring men, skilled or unskilled, and the other from business, clerical, and professional families. All children were under 2 1/2 years of age. The language development of the business, clerical, and professional children were significantly higher (Irwin, 1948).

Noel (1953) studied the relationship between parental language usage and the language usage of their children. There were three problems which had to be considered. First, was finding the difference between the child's usage and the quality of his parents' language usage. Second, finding the relationship between the child's language usage and the father's occupation, and third, finding the relationship between the child's language usage and the frequency of his parents' oral expression. The findings showed there was a direct positive relationship between the number of children's errors and the number of their parents' errors. The occupation of the father did not affect the child's language as long as the father's IQ's were held constant. And, the more frequently the parents express themselves orally, the better the children's quality of language will be.

Brodbeck and Irwin (1946) measured the differences between the speech sounds of orphanage infants and those of infants living in families. All infants in both groups were well cared for as far as physical needs are concerned. The orphanage children, however, received little consistent personal attention such as affection or conversation. The means of the orphanage infants fell below those of the family infants at all age levels and for both types of speech sounds and frequencies of verbalizations.

Puerto Rican children from the Harlem district of New York's day nurseries were tested for mean sentence length and maturity of sentence structure. They were also given the Goodenough Draw-a-Man IQ test. All children were within six months of their fifth birthdays. Their results were compared with

results of a previous study by the same researchers of Negro and white children in New York's day nurseries. The educational and occupational levels of the Puerto Rican children's parents were inferior to those of the Negro and white children, but they did not differ significantly on the Draw-a-Man IQ. And they exceeded both the white and Negro group in mean sentence length and maturity of sentence length and maturity of sentence structure. It is suggested that the Puerto Rican's superiority in early linguistic development is due to the greater extent of adult contact in their home environment (Anastasi, 1953).

There has also been some question as to whether there is a relationship between sex and language development. Irwin and Chen (1946) found that boys and girls begin at the same point at age 0 and progress together until the second year at which time the girls begin and continue to exceed the boys. These differences were not, however, statistically significant.

McCarthy (1953, p. 155) states that, "sex differences in favor of girls are present as soon as children begin to talk; that is, at about the age of onset of true language as distinct from pre-linguistic utterances." Her explanations for these differences are one, that both male and female children imitate their mother, but girls identify with her more readily, and that boys who can identify with their fathers are unable to imitate their speech sounds because of the difference in voice quality. Boys are much less satisfied with this experience than girls. Two, parents' attitudes toward the sexes is evident in this more girls are adopted from agencies than boys. And three, while girls stay in the kitchen talking with their mothers, boys are sent outside for active play.

Wintz (1959) tried to show whether previously reported sex differences favoring girls in language development were significant in large groups of children, or whether those were just small chance differences. One-hundred-fifty (75 girls and 75 boys) randomly selected, normal, five-year-old children were tested. Girls were significantly higher on two of six verbalization measures and on one of four word-fluency measures. No significant differences were found on the Templin Articulation Test and the Ammons Vocabulary Test. Therefore, it was concluded that there was very little difference in sex with respect to major verbalization measures, articulatory skills, vocabulary skills, and three of four word-fluency measures.

Fifty Negro and fifty white children from low socio-economic urban areas were studied to determine if there were any sex differences in language development. Among the Negroes the boys tended to be more accurate while the girls spoke in longer sentences. There were no sex differences among the white children (Thomas, 1962).

Many different pre-school programs are in operation at the present time, most of them greatly concerned with development of language skills. Bromwich states that there are two schools of thought being used in early childhood education, the prescriptive-instructional approach, and the developmental approach. The former assumes that the teacher or psychologist should know how the child should learn it, and in what sequence, while the latter assumes that each child "is a unique organism who can be trusted to select experiences from which he will profit most at any particular time because these experiences meet his

present needs and he is ready to incorporate them intellectually, socially, and emotionally." (Bromwich, 1968, p. 20) Bromwich proposes a third approach: A developmental program which includes an emphasis on development of the expressive language of the disadvantaged child. Every learning situation should include verbalization of some kind with the express goal of enhancing language usage (Bromwich, 1968).

McAfee looks to her experiences at the New Nursery School in Greeley, Colorado, as a resource for a list of guides for encouraging language development:

- 1) Use complete sentences.
- 2) Whenever possible include the category or classification in the sentence.
- 3) Use words that are specific and descriptive words.
- 4) Give the child enough information to keep him from being confused.
- 5) When using a matching activity be sure they know how the items match.
- 6) Be accurate when describing size.
- 7) Talk about various motor activities.
- 8) Use an echoing technique to provide a model for the child's speech patterns.

McAfee warns that too much verbalization too early can be just as harmful as none at all. The adult must use the right words at the right time. Sensitivity, observation, tact, and patience are important for the teacher of disadvantaged children (McAfee, 1967).

Weikart (1967), in his review of various nursery school projects, lists three basic pre-school teaching methods:

1. Traditional nursery school methods.

In this method the teacher watches and waits for a child's needs to emerge. Social, emotional, and motor development are the primary goals.

2. Structured nursery school methods.

Cognitive skills and language development are the primary goals. Although traditional materials and activities may be used there are specific, pre-determined goals. The teacher-planned activities are carefully sequenced and support a specific developmental theory.

3. Task-oriented nursery school methods.

Traditional nursery school methods are not used. The teacher plans the activities in order to meet pre-determined goals such as reading, arithmetic or logical thinking.

It was concluded that preschools for the disadvantaged "must provide planned teacher action according to a specific developmental theory in which the primary goals are cognitive and language development." (Weikart, 1967, p. 177) Good social and emotional adjustment seem to grow in both traditional and structured programs, but intellectual growth is found only in structured schools.

Young (1968) reviews a study done in the schools of Canton, Ohio. They tested the "patterned drill" and repetition of the Bereiter-Engelmann approach against the traditional nursery school and found startlingly significant differences in favor of Bereiter-Engelmann. On the Preschool Inventory Test and the

Concept Inventory test the Bereiter-Engelmann children gained 100% more than the traditional nursery school children. The average gains were 126.0 points to 69.17 points on the Preschool Inventory and 158.2 points to 78.8 points on the Concept Inventory.

Seifert (1969) compared the Bereiter-Engelmann approach with Weikart's approach to nursery school, labeling the Bereiter-Engelmann as the "language program" and Weikart as the "cognitive program." Neither program proved to be significantly better than the other, however, both gained much more (about 30 points) on the Stanford-Binet than a non-pre-school group.

The Institute for Developmental Studies began operating on experimental pre-school intervention program for disadvantaged children during the 1962-63 school year. "Early tests," reported the Institute to the Office of Economic Opportunity, "indicated that definite gains can be achieved in vocabulary and perceptual skills after two years of enriched pre-school and kindergarten curriculum. However, these early gains may be lost if special enrichment is not continued through the first three elementary years." (Powledge, 1967) The Institute used the Illinois Test of Psycholinguistic Abilities (ITPA), which consists of nine subtests. Not all of these scores were statistically significant, but the over-all gain each year has been. It was interesting to note that the second and the third year differences seemed to be caused more by the losses of the control group rather than by the gains of the control.

A study was made by Schwartz (1967) in which two groups of disadvantaged young children were tested with the ITPA at the beginning of first and

again at the beginning of second grade. The experimental group had had two years of pre-school enrichment while the control had had none. It was found that the experimental group scored significantly higher in performance and in all subtests. The psycholinguistic patterns were similar in both groups.

One final method of fostering language development in pre-school children is through storytelling, a part of every pre-school curriculum. Irwin (1960) studied the effects of systematic storytelling on the language development of infants. The experimental group consisted of twenty-four infants and their mothers who read and talked to them about the stories for fifteen or twenty minutes a day. This procedure ran for two months, from the age of thirteen months to twenty months. From the thirteenth month to the seventeenth month the data showed little difference between the experimental and control groups. From the seventeenth month on the experimental group broke ahead and continued to lead until the age of two-and-a-half when the experiment ended.

Music in the Pre-school

Bodily rhythmic movement is the first area to be discussed. Christianson (1938) did the most recent research on this topic. She used sixteen nursery school children, sixteen kindergarten children, and fifteen first graders for her study. The experimenter worked with the children while two observers recorded the data. In the nursery school she made music available throughout the day. She presented three 20-minute periods per week to the kindergartners, and for the first graders she gave one thirty-minute session, daily.

The observers graded the children on a scale from one to five in each of five areas which included:

1. Synchronization of movement.
2. Social-emotional response.
Facial expression, posture, and movement were determiners.
3. Spontaneous dance patterns which were evolved or enhanced by musical accompaniment.
4. Use of rhythm in dramatic expression of ideas.
5. Verbal requests and comments.

Christianson's data show a significant increase in musical activity as the age of the child increases. The girls were slightly more active than the boys, but not significantly. The study also showed no significant relationship between IQ and musical ability.

Jersild and Bienstock (1935) also studied bodily rhythmic behavior and its relationship to the age of the child. Ninety-four children, ages two to five were studied. The music came from a mechanical piano fixed so that on every beat a light would glow. The children's responses, which included marching to the music, or beating on a wooden bar which caused another light to glow, were recorded by means of a film. The number of simultaneous responses to the music was recorded for each child. The child had to respond twice in succession in order for the second response to be recorded.

An increase in age again proved to be significantly related to a child's ability to keep strict time to music. There also was no significant difference

between the girls' scores and the boys'. This study showed a positive correlation between musical ability and IQ, although the results were inconclusive because IQ scores were not available for all the children. Another interesting finding was that faster tempos were easier than slower tempos for the children to keep time to. Differences between meters and hands and feet were not significant in relation to ability to keep time. The experimenters took five problem children with "behavior problems" for fifteen to twenty-two practice periods lasting fifteen to twenty minutes. Their scores at the end were much higher than they had been in the beginning, but they were not different from the control group of unpracticed children. Therefore, their improvement was credited to better cooperation and interest rather than to increased ability. Jersild and Bienstock, in conclusion, recommend giving children more opportunity for cultivating interest in rhythmic expression and a "feel" for it, rather than requiring precise measured rhythmic responses.

Miller (1968) studied the effects of twelve extra special musical experiences in the regular curriculum of a Utah State University nursery school group. There were twenty-two sessions over a period of six weeks. The children were tested to see whether sex, age, nursery school experience, or the amount of musical activity at home had any effect on their musical involvement. There was no significant difference in musical involvement between sexes, although girls tended to be more rhythmically involved. The amount of musical involvement tends to increase with increasing time in nursery school. Younger and older children were not as musically involved as children between the ages of

three years, ten months and four years, four months. Those more musically involved at home tended slightly to be more active.

Tempo is another facet of music that has been studied in relation to pre-school children. Faster tempos were found to be easier in a study conducted by Williams (1932). He worked with two to nine-year-old children. They were taught to keep time to the clicks of a clock by pushing the key on a recording instrument which somewhat resembled a telegraph key. He also found that with increased age their ability to respond correctly improved. And the girls' scores were significantly higher than the boys'.

Hulson (1929) found that there are certain tempos that are easier for children to keep time to. He studied twenty-one children and their abilities to walk, run, and skip at various tempos. An observer checked each child off as successful when his foot pattern coincided with the tempo for eight consecutive beats. He found them most often successful at 84 to 100 beats per minute for walking, 88 to 144 for running, and 100 to 160 for skipping. As a group the children performed best at 126 beats per minute for walking, 112 for running, and 132 for skipping.

Fostering children's ability to match pitches is another important part of the pre-school music period. Jersild and Bienstock (1931) studied children's ability to match pitches by asking children to repeat tones produced by a xylophone. There were 48 children, thirty-one to forty-eight months old. The range of notes used was from middle C to F''. They were allowed eight tries for each pitch. The experimental group of 18 of the children were given two

ten-minute singing sessions a week. They learned eight new songs in forty training sessions. The range of pitches had to be extended for the experimental group because they improved so much. On the pre-test the average score for both experimental and control groups was 4.22 pitches. The experimental group scored an average of 15.5 pitches on the post test while the control group's average was 8.0 pitches correct. They also found the girls to score more pitches, but there was no significant difference.

Pitch, intervals, phrases, and rhythm were tested in a study by Updegraff (1938). He used 114 children, three, four, and five years old. They were tested at the beginning of the study, after fifteen days, and at the end, after thirty days. Sixty of the children were split into groups of two to three in which they received ten to fifteen-minute training sessions daily. They learned nine new songs and practiced the particularly hard intervals. The three and four-year-olds improved significantly over the control groups in pitch, intervals, and phrases. The gains for the five-year-olds were not significant although it was felt that the test was too simple for them. Facial expression, fixation, participation, gross motor movement, and verbal responses were recorded in order to judge interest. The interest level rose considerably, but it was not recorded so as to be analyzed statistically.

Another study of vocal ability was carried out by Smith (1963). The experimenter wanted to see if group training would improve the vocal ability of fourteen three-year-olds and sixteen four-year-olds. For 32 weeks they had a fifteen to twenty-minute training period each day. The songs that were chosen

had considerable repetition of verbal phrases so that specific tones and intervals could be practiced amply. The range used was either A' to E' or C to A' or both. The tests were tape recorded. The three-year-olds' improvement was significant in both the upper and lower ranges while only the lower range improved significantly for the four-year-olds.

Pitch range was also studied by Hattwick (1934). He had each of a group of ninety-seven four-and-a-half-year-old first and second graders repeat a pitch that was played for him. The average range for preschoolers was smaller than that of the first and second graders. And they found that the range for young children was between C and C' rather than E' and E'' was was previously thought. A survey was made of children's music and most of it was found to be written at or above the upper level of their range.

Another study of vocal pitch range was done by Jersild and Bienstock (1934) in which they asked 407 children, ages two to ten, and 65 adults to sing the scale of C. They then compiled the following chart:

<u>Age</u>	<u>Tones</u>
2 years	DEFGA
3 years	<u>C</u> DEFGABC
4 years	B <u>C</u> DEFGABC
5 years	AB <u>C</u> DEFGABCD
6 years	ABC <u>D</u> EFGABCDEF
7 years	ABC <u>D</u> EFGABCDEF
8 years	GAB <u>C</u> DEFGABCDEF
9 years	FGAB <u>C</u> DEFGABCDEF
10 years	FGAB <u>C</u> DEFGABCDEF
Men	DEFGABC <u>D</u> EFGABC
Women	CDEFGAB <u>C</u> DEFGABCDEF

(Jersild and Bienstock, 1934, p. 291)

Most of the pitch range appears to be reached by the age of six. Therefore, the experimenters recommended vocal training for children at early ages.

Another study of vocal ability was carried out by Smith (1963). The experimenter wanted to see if group training would improve the vocal ability of 14 three-year-olds and 16 four-year-olds. For 32 weeks they had a fifteen to twenty-minute training period each day. The songs that were chosen had considerable repetition of verbal phrases so that specific tones and intervals could be practiced amply. The range used was either A' to E' or C to A' or both. The tests were tape recorded. The three-year-olds' improvement was significant in both the upper and lower ranges while only the lower range improved significantly for the four-year-olds.

A study was done by Boardman (1964) to find out if vocal accuracy is maintained any better with early training than with later training. She compared kindergarten, first, and second graders who had had vocal training in nursery school with the same aged children who had not. She found the difference in vocal ability was not significant, but she states, "The kindergarten comparison group found greater difficulty in the upper range. This supports the previous conclusion that pre-school training may accelerate but otherwise not effect vocal training." (Boardman, 1964, p. 1245)

Colby is the only researcher who has studied instrumental expression with pre-schoolers. He tried unsuccessfully to teach them to play a six-holed fife. Therefore, he concludes that, ". . . the same amount of effort applied

to vocal acquisitions of folk songs, etc. would produce greater results because it would capitalize on a natural response." (Colby, 1935, p. 428)

Some researchers have found that home environment can have an effect on children's musical growth. Reynolds (1960) refers to the state of "musical awakening" or "The ability to sing in a definite tonality with rhythmic and melodic delineation." (Reynolds, 1960, p. 1214) His study deals with this event and its relationship to home environment. He lists several factors which he found to contribute to "musical awakening" in children. They are as follows:

1. Mothers who sang, played the piano or helped with the record player.
 2. Parents who took their children to concerts and provided other listening opportunities.
 3. A permissive home atmosphere where interested parents encouraged musical expression.
 4. The presence of a piano or phonograph in the home.
- (Reynolds, 1960, p. 1214)

Kirkpatrick (1962) studied this area further and listed some environmental elements which he showed to be significantly related to preschool children's music ability. They are:

1. Mothers who sing to and with their children.
2. Direct aid from parents and other adults in learning songs.
3. Conversation in song.
4. Family participation in singing and instrumental playing.
5. Parents with musical background.

Other factors of lesser influence include:

1. Older siblings.
 2. Nursery school and Sunday school attendance.
 3. Television and phonograph in the home.
- (Kirkpatrick, 1962, p. 886)

Hartley (1952) suggests some psychological implications that singing has on pre-school children. Overactive and inhibited children have shown some positive progress due to achievement in music. "Free music periods give energetic youngsters a much needed chance to 'throw their weight about,' to use their bodies vigorously, to experience the delight of muscles moving smoothly." (Hartley, 1952, p. 309) In regard to the inhibited child, Hartley notes that "the stimulation of the music, the security of oft repeated movement, and the relaxed atmosphere of the group combine to give them (the inhibited children) the reinforcement they need." (Hartley, 1952, p. 318)

Hartley further gives music credit for promoting social integration. In music each person has a place but at the same time each child "can be a part of the group without having to tolerate or contribute to personal relationships." (Hartley, p. 317) Through music,

the shy, withdrawn child seems to have more vigor, more power, more ability to maintain contacts during music; the aggressive child finds in it a challenge to the exploration of his abilities and the mastery of his own movements, as well as an integrating agent that calms his anxieties and opens the way to constructive relationships. (Hartley, 1952, p. 316)

Singing and Language Development

There has been little research testing the value of music as a vehicle toward language development. However, Engelmann (1969, p. 6) has said,

Singing is a lot of things for young children. It is expression, rhythm, and perhaps, most important it is fun. Since it is fun, it can be used as a vehicle for teaching

a great number of basic language concepts. It can provide "drill" that is fun. It can reinforce basic language patterns. It can strengthen a child's grasp of the concepts that are conveyed through language.

Griffin (1968, p. 10) supports this by saying,

There is much to be said for teaching music purely for its own sake, in order to instill in the children an appreciation of and interest in music that will continue to enrich their lives. However, in Head Start, where time is short we must also use music as a tool for teaching other skills and ideas as well. Luckily, children have a natural capacity for enjoying music. It is our job to make our presentation enjoyable for them so that the use of music will accomplish as much as possible.

PROCEDURE

Sample

The sample for this study was composed of the population of children in the Head Start Project at Honeyville, Utah. Ten of the twenty children made up the control group. The experimental group of ten children was chosen by drawing ten names out of a hat containing all twenty names. There were two exceptions specifically taken for the control group because of their frequent absences.

The Honeyville Head Start Project is composed of children from low-income, rural families, many of whom are Mexican-Americans or Indians. It operates eight months out of the year, October through May. This group was chosen by the investigator because of its high percentage of minority group children. It was felt that their language development, and their English in particular, would be less well developed than that of their middle-class, Anglo peers. In the experimental group there were two children with Spanish surnames while the control group had four. The attendance was good in the experimental group. Only three children were absent, each of whom was absent only once. Two control group children were absent for the post-test and therefore their tests were made up at their homes after school was out.

Both the experimental and control groups had experienced the same classroom music because they came from the same class and the musical

tutoring sessions were held during free play activity periods rather than during the regular music time.

Instruments

The materials used in both the pre-test and post-test were actual objects, each one of the following: lemon, grapefruit, lime, penny, dime, quarter; and a small box and ping-pong ball. Each child in the experimental and control groups was shown the objects one at a time and asked to name them. The ball and box were used to demonstrate the following prepositions and phrases: inside, beside, behind, in front of, under, and on top of. In each case the child was asked to tell where the ball was located.

The data was recorded on a separate sheet for each child (see Appendix A, p. 47). Each response was recorded and later checked off as "correct" or "incorrect." The correct responses were tallied to give a total for correct labels and a total for correct prepositions for each child.

The instrument used in the musical tutoring experience for teaching labels was composed of fruits which were hooked together to make a man, with a lemon head, a grapefruit body, and feet made of lime halves. For teaching and illustrating prepositions, a box large enough to hold a child was brought in, and a child rather than a ball was placed inside, beside, or behind the box. "In front of," "on top of," and "under" were illustrated with flannel board pictures of a bird sitting in front of a tree, on top of a branch, or flying under a branch.

Pilot Study

A pilot study was conducted for the purpose of acquainting the experimenter with her instruments and for finding any parts in the procedure where changes should be made. The sample of children came from a Latter-day Saint Relief Society Nursery and were three and four years old. There were eight children involved in the pilot study. First, the pre-test was given to each child who was asked to go with the investigator to "play a game." This was done to make the child feel more comfortable about leaving with the investigator who was a stranger to him.

After the pre-test was given to each child, the eight children were separated into two groups of four children. For the main study, each group was then asked to go with the investigator to learn some songs. Four children were given the pre-test. The first group was taught "Aiken Drum" and "Who's Behind the Big Box?" The other group was taught "Who Has the Penny?" and "Fly Little Bluebird." (See Appendixes B-E, pp. 48-51.) Only three children were in this group because the fourth boy refused to join.

Because of the apparent difficulty in putting across the concept, "through," it was decided that it would be replaced with "in front of." This necessitated a change in one flannel board picture from a bird flying through a window to a bird sitting in front of a tree. A change was also made in the pre-test and post-test; where the investigator had previously moved the ball through the box she would now place the ball in front of the box.

It was also decided that each session should be no longer than fifteen minutes. Two songs would be taught per session until the children knew them. Then they would sing all four songs each session.

"Under," "in," and "on" or "on top of" were well known. "Beside," "behind," and "in front of" gave them quite a bit of trouble. Because the pilot study was concerned with testing and smoothing-out the procedures and because the pilot group were middle-class children as opposed to the low-income children in the main study, the well-known prepositions were retained.

Other trends were noticed in the pilot study. The concept of "penny" was universally known while none of the fruits were correctly labeled. The remaining coins were labeled incorrectly by each child. Several children gave coin names, but they were incorrect for the coin they were labeling at the time. "Penny" was also retained because of the difference between the pilot sample and the main study sample.

Administration of Pre-test and Post-test

The investigator visited the classroom several times prior to the beginning of the study to build a working relationship with each of the children in the sample.

Each child from both the experimental and control group was taken on an individual basis to a room near his classroom where he was given the pre-test.

He was addressed by his name and asked if he would help by answering some questions. Some example questions were asked which were constructed

for built-in success. He was shown a small ball and asked, "What is this?" and a small box and asked, "What is this?" Praise was given for the correct answers.

The test began with the investigator presenting the lemon and asking the child, "What is this?" The answer was recorded on the child's data sheet (see Appendix A, p. 47). The rest of the labeling items, grapefruit, lime, penny, dime, and quarter were then presented and the responses recorded in the same manner as for the lemon. Next, the preposition items were presented by showing the child the ball with the box in the six relationships, inside, beside, behind, in front of, under, and on top of. He was asked, "Where is the ball?" and his response was recorded on his data sheet. The same was asked for each relationship.

At the end of the test the child was thanked and returned to his classroom. The same procedure was used for the post-test.

Tutoring Procedures

The musical tutoring experiences took place from April 30, 1970, to May 14, 1970, in the library of a Child Development Center in northern Utah. The library was down the hall from the Head Start classroom. The school staff cooperated by leaving the group uninterrupted during the tutoring sessions. There were nine, fifteen-to-twenty-minute sessions which fell within a two-week period of time. On five of the days there was just one session, and on two of the days the tutoring sessions were held twice. This was done to get

two extra sessions in before the closing of school and the administration of the post-test.

The children in the experimental group were led into the room by the experimenter and seated in a circle. Each of the four songs was presented by the experimenter who sang the song alone twice before allowing the children to join. The songs were sung slowly at first with the tempo picking up as the song became more familiar. If at any time it seemed that the children had trouble with a word or tune it was demonstrated once by the experimenter and practiced by the group. In each demonstration she used the appropriate visual aid as it was to be used throughout the sessions. As the children learned the songs and the visual aids they were given less help in deciding which aid was appropriate.

During Session I the children were taught "Aiken Drum" and "Who's Behind the Big Box?" As each part of Aiken Drum's body was mentioned in the song it was pointed out on the fruit man. During the following sessions the song was repeated and the children chose which fruit and body part they wanted to sing about. Before "Who's Behind the Big Box?" was sung, all of the children were asked to close their eyes and one child was chosen to be "it." He would be placed either inside, beside, or behind the box and the rest of the children would then look to see where he was. When his position was agreed upon they would sing the song substituting the appropriate prepositions for behind.

It was decided at this point that it was too soon for them to learn the next two songs so they were saved for the third session, and Session II was a

repeat of Session I. Both "Aiken Drum" and "Who's Behind the Big Box?" were repeated twice with the experimenter demonstrating once before the children participated.

"Who Has the Penny?" and "Fly Little Bluebird" were taught at the beginning of Session III. The children were to close their eyes and the experimenter placed a penny in one child's hand, a dime in another child's hand and a quarter with another child. They were all to keep their hands clenched and not disclose the holders of the coins until the appropriate places came in the song. The song was repeated three times so that each child held a coin at least once.

For "Fly Little Bluebird" the children were to insert the appropriate preposition for the flannel board picture that was displayed at the time. For instance, when they saw the picture of the bird sitting in front of the tree trunk the children were to sing "Six, little bluebirds, in front of my tree trunk."

Session IV began with the two newest songs. The experimenter demonstrated each new song twice before having the children join in. During Sessions V through IX each song was sung through two or three times, as was necessary for each concept to be covered and each child to participate.

On the last day, after the post-test had been given, the experimental group "performed" their newly learned songs for their classmates who had been the control group in the study.

FINDINGS

The number of correct answers on labels and prepositions for every child were totaled to establish a pre-test score and a post-test score for each group. The experimental group scored 33 correct on the pre-test and 68 correct on the post-test. This showed an increase of 35 points. Scores for the control group were 38 correct on the pre-test and 34 correct on the post-test which shows a -4 gain. When subjected to an analysis of variance the difference between the experimental group's score and the control group's score was proven significant at the .05 level.

The experimental group's scores were then broken up into two sections, one for labels and one for prepositions, to see what, if any, difference there was between learning labels and learning prepositions. On labels the experimental group scored 27 correct on the pre-test and 42 correct on the post-test, a gain of 15 points. And on prepositions they scored 11 on the pre-test and 23 on the post-test which showed a 12-point gain. This 4-point difference between labeling and prepositions on the post-test was not analyzed statistically, but it appeared that labels tended to be easier to learn than prepositions.

Table 1. Analysis of variance for experimental group, Variable 1

Source	df	MS	Probability
TOT	19		
TRT	1	0.1250000E 01	0.05
ERR	18	0.3316667E 01	

Table 2. Analysis of variance for control group, Variable 2

Source	df	MS	Probability
TOT	19		
TRT	1	0.5780000E 02	0.05
ERR	18	0.3444444E 01	

Table 3. Analysis of variance adjusted to Variable 2

Source	df	MS	Probability
TOT	1	0.6601214E 02	
TRT	1	0.1758392E 02	0.05
ERR	17	0.2612711E 01	

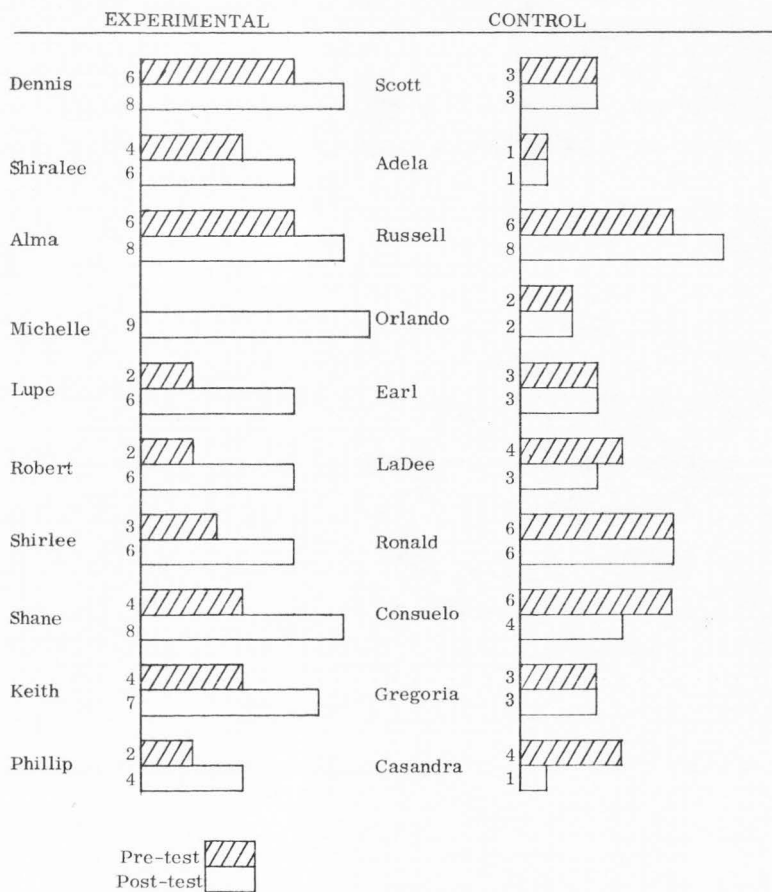


Chart 1. Total scores of experimental and control groups on pre-test and post-test.

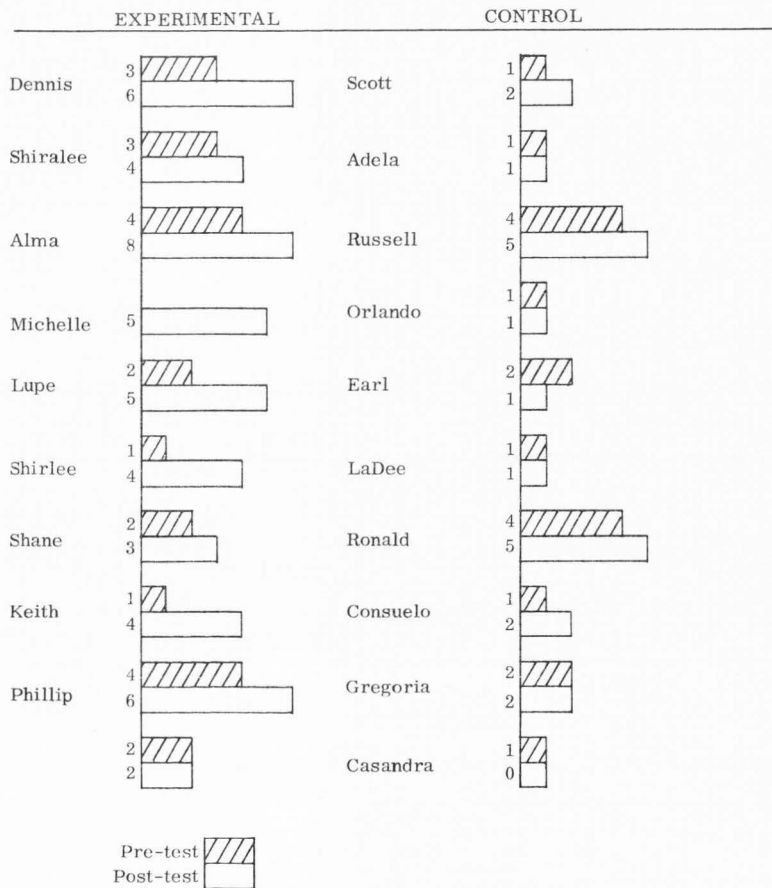


Chart 2. Scores of experimental and control groups on pre-test and post-test labels.

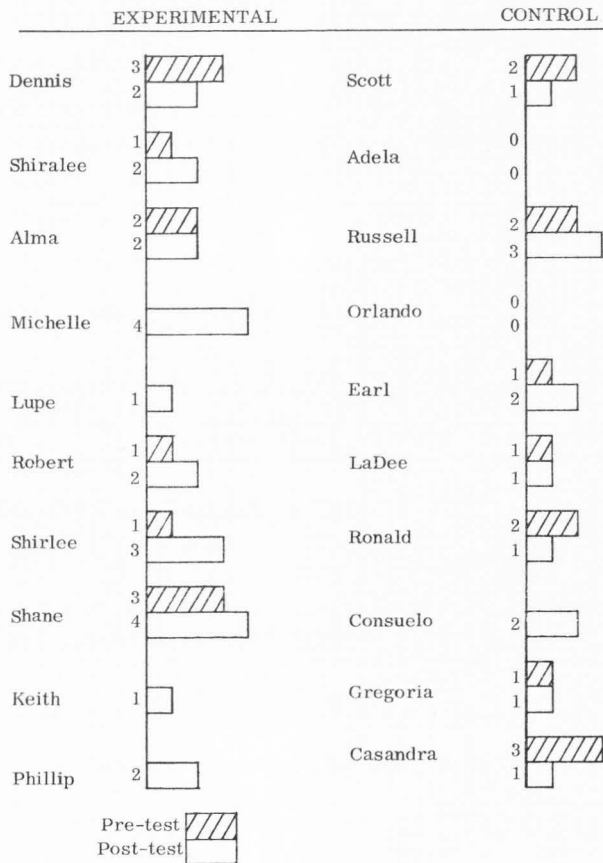


Chart 3. Scores of experimental and control groups on pre-test and post-test prepositions.

DISCUSSION

The data in this study show significant gains in learning language concepts, nevertheless there are areas in which the experimenter recommends that changes or modifications be made. Because of the early closing of school, there were only two weeks in which to administer the pre- and post-tests and to conduct the musical tutoring sessions. Had there been more time, the experimenter would have taught only one song per session and given the children a more relaxed pace in which to learn the new songs. Many of the children were singing in their second language and therefore, were still struggling with the words as well as the tune at the conclusion of the nine sessions. This being the case the experimenter feels that the gains might have been more dramatic if they had been measured when the songs were more thoroughly learned. A study of the exact answers on the pre- and post-tests supports this feeling. In several cases the investigator found a child who had no idea of what was wanted on the pre-test, but by the post-test he was obviously getting the idea even though his answer was still incorrect. The most dramatic example of this is concerned with the concept "behind." Three children first answered, "right there," "Right there by it," or "by it," but after the tutoring sessions their answers changed to "in back" or "back of it" which might have been considered a correct answer.

More lasting gains might have been made had the children had the opportunity to repeat these songs throughout their school year as they do their other favorite pre-school songs.

The data shows that the experimental group made a gain of fifteen points on the labels compared with a gain of twelve points on prepositions. Although the difference is not dramatic it shows a possibility that label-learning is easier than preposition-learning. Further study in this area might help to clarify the question of significance of this difference.

It would also be interesting to study the various visual aids to determine which if any are more effective. The investigator felt that the children may have enjoyed the songs in which they were active participants such as "Who Has the Penny?" and "Who's Behind the Big Box?" more than those songs such as "Fly Little Bluebird" and "Aiken Drum" in which they were only required to watch as they sang.

The experimenter also notes that a decision to drop the label concept of "penny" and the prepositions, "under," and "in," and "on top of" because they were so well-known in the pilot study would have been a mistake because the Head Start group showed a greater deficiency in these concepts which supports reports of poor language development in low-income children and children who might have English as a second language.

One final change the experimenter would make is concerned with the song "Who Has the Penny?" If she were to teach it again she would sing the song using only one coin at a time until the coins became more familiar.

Confusion arose when the time came for the coin-holders to show their coins. At first no one knew for sure the name of the coin he was holding, and it was too hard to try and teach the song and the labels of three coins at the same time.

The experimenter feels that one of the reasons the tutoring experiences were successful was her enthusiasm toward working with this group and toward the activity they were involved in. The classroom teacher also expressed her appreciation for the experience these children had. She felt she had been inadequate in the area of music and was happy to have someone make this contribution to her curriculum. This indicated that the tutoring sessions might have been particularly exciting to these children since they had had little opportunity for singing in the past.

CONCLUSION

The findings of this study appear to support the conclusion that, for disadvantaged preschool children, the use of a singing program designed to focus on the specific content to be taught, is an effective supplement to an on-going classroom curriculum.

SUGGESTIONS FOR FURTHER STUDY

1. The results of a similar study where only one song was taught per session to allow more time for assimilation might prove to be more dramatic.

2. The experimenter suggests having more than nine sessions and allowing at least four weeks for learning four songs well.

3. A more detailed study of the difference between label-learning and preposition-learning might provide very interesting results.

4. More detailed study of visual aids as they relate to teaching songs would also prove helpful to the pre-school teacher.

5. A long-range study of teaching language concepts through singing compared with other language programs for pre-schoolers is another possibility for further study.

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APPENDIXES

Appendix AData Sheet

NAME	AGE	SEX		RACE		
		C	I	POST-TEST	C	I
<u>CONCEPT</u>	<u>PRE-TEST</u>					
<u>Labels</u>						
grapefruit						
lemon						
lime						
penny						
dime						
quarter						
<u>Prepositions</u>						
inside						
beside						
behind						
in front of						
under						
on top of						

C - correct

I - incorrect

Appendix BAikien Drum

do re mi so so la so
Here's a man who's made of fruit,

so la so so la so
Made of fruit, made of fruit.

la la so so mi re do
And his name is Aikien Drum.

His head's made of a lemon,
A lemon, a lemon.

His head's made of a lemon,
And his name is Aikien Drum.

His body's made of a grapefruit,
A grapefruit, a grapefruit.

His body's made of a grapefruit,
And his name is Aikien Drum.

His feet are made of limes,
Of limes, of limes,

His feet are made of limes,
And his name is Aikien Drum.

Appendix CWho's Behind the Big Box?

so so so la so mi la la la so so mi
Who's behind the big box? Nobody knows but me.

so so so la so mi la la la so so mi
Who's behind the big box? Nobody knows but me.

so la so mi la la so so mi
I can't tell you. You will have to guess.

so la so so mi so so mi mi do
If your answer's right, I will answer, "Yes!"

Appendix DWho Has the Penny?

so so la so mi so so la so mi
Who has the penny? Who has the penny?

la so so mi la so so mi
Who has the dime? Who has the dime?

so so la so mi so so la so mi
Who has the quarter? Who has the quarter?

mi re re do mi re re do
Don't let us see. Don't let us see.

I have the penny. I have the penny.

I have the dime. I have the dime.

I have the quarter. I have the quarter.

Now we can see! Now we can see!

Appendix EFly Little Bluebird

do mi mi so so so so so la so mi
 Sit little bluebird, in front of my tree trunk,

so so so la so mi
 In front of my tree trunk.

do mi mi so so so so so la so mi
 Sit little bluebird, in front of my tree trunk,

mi re re do do
 Heigh diddle dee dum.

Sit little bluebird, on top of my tree branch,

On top of my tree branch,

Sit little bluebird, on top of my tree branch,

Heigh diddle dee dum.

Fly little bluebird, under my tree branch,

Under my tree branch.

Fly, little bluebird, under my tree branch,

Heigh diddle dee dum.

VITA

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