A STUDY OF TRADITIONAL AND EXPERIMENTAL TECHNIQUES FOR IMPROVEMENT IN THE SINGING ABILITY OF UNCERTAIN SINGERS

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ABSTRACT

A STUDY OF TRADITIONAL AND EXPERIMENTAL TECHNIQUES FOR IMPROVEMENT IN THE SINGING ABILITY OF UNCERTAIN SINGERS

By

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The purpose of this study was to compare the effectiveness of two remedial methods on the singing achievement of uncertain singers.

The traditional method incorporated all the frequently used remedial techniques of speech activities, pitch matching drills, tone calls, and chants. No songs or melodic fragments from songs were used in these sessions.

The experimental method differed from the traditional method in that melodic fragments from popular rock and roll songs were used in remedial singing exercises. Music concepts of speaking-singing, same-different, and up-down were taught through the context of songs. Examples to illustrate such concepts were all recognizable melodic fragments from current popular songs, sung by the original artist or group.

Sixteen subjects, eight in the control group, and eight in the experimental group, participated in remedial training for two half-hour periods twice per week for eight weeks.

There was found to be no significant differences in the methods on the singing achievement of the two groups. A nonsignificant u value of 26 was found using gain scores of both groups.

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CHAPTER I

INTRODUCTION

Singing is frequently among the first music activities to be offered to children in their introduction to music education. The singing experience is felt to be of primary importance if future music appreciation, enjoyment and knowledge are to accrue. Most children respond readily to music and many of their earliest responses are vocal. All children, however, enter elementary school with varying vocal development and singing ability.

Although the estimates differ, there is agreement that a high percentage of children in first grade cannot sing in tune. It has been found by researchers, music and classroom teachers that in a majority of cases the inability to sing accurately can soon be corrected if the difficulties of the child are detected early and if he is given consistent and continuing help.

There are children who pass from primary grades to upper levels without having learned to sing in tune. Various terms such as out-of-tune singer, tone-deaf,

pitch-deficient, non-singer, underdeveloped voice, conversational singer, monotone, and uncertain singer have been used to describe such children. They each refer (perhaps to varying degrees) to a child's general inability to reproduce the tonal configuration of a melody in a recognizable manner. Throughout this discussion, the term uncertain singer will be used.

The basic underlying characteristic of uncertain singers is their inability to match pitch although the nature of this problem differs among individuals. The uncertain singer has difficulty consistently matching isolated pitches and cannot match continuous pitches organized into a melody. This child may be recognized by singing in one or any combination of ways: (a) singing correctly some notes or phrases, but not singing continuously accurate; (b) singing too high or low in relationship to the pitches of the melody; (c) singing in a very limited range of notes; and (d) talking the song instead of singing it.

In each case, the problem centers around the child's inability to hear and remember change or motion in the music and/or his inability to coordinate the vocal mechanism with pitches heard. Joyner states the problem in this manner:

> In order to sing a tune a person must be able to do at least three things: (a) to tell one pitch from another, thereby gaining mental concept of the rise and fall of a melodic outline; (b) to recall successions of pitches organized into melodic patterns in

> order to be aware of what comes next; and (c) to have a vocal instrument capable of reproducing the successions of pitches in a melody, and that instrument must be able to make an immediate and accurate response to his intentions.[1]

Various factors have been stated as contributors to the child's inability to sing accurately. The list presented by Nye include those most frequently stated in literature. They are: (1) immaturity; (2) lack of a background of musical experience; (3) emotional and psychological blocks; (4) lack of interest, failure to try; (5) physical disabilities; (6) unsuitable accompaiments; and (7) muscular tension.[2] To number six should be added that of songs in unsuitable keys. Many songs are out of the range of some children, frequently too high. Because the child cannot sing in the range of the song, he sings in a range comfortable to him but which is out of tune.

Stein states that new psychological and emotional factors frequently emerge with uncertain singers in the intermediate grades. She discusses five types of uncertain singers (which she terms "underdeveloped" voices) in the upper grades. They are: (1) the child who thinks he

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[1]David Joyner, "The Monotone Problem," Journal of Research in Music Education, XVII (Spring, 1969), 117. (Hereinafter referred to as "Monotone Problem.")

[2]Robert Nye and Vernice Nye, Music In the Elementary School (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964), pp. 174-75. (Hereinafter referred to as Music in Elementary School.)

cannot sing; (2) the child who hates music; (3) the quiet, shy student; (4) the boy who will not sing high; (5) and the boy who "sings bass" because he wants to sound like a man.[3]

The techniques offered in remedial training for the uncertain singer are varied. One point of agreement among music educators is the necessity for early remedial training.

Gould conducted a survey which asked a large number of music teachers to list the remedial techniques they used for uncertain singers. This list is a composite of the techniques most frequently discussed in articles on non-singers. They are listed in order of the frequency mentioned:

> (1) tone matching drills; (2) use of speech drills; (3) use of bodily movements; (4) use of song pattern devices; (5) use of mechanical devices such as piano, bells, recorders, etc.; (6) miscellaneous activities including humming, whistling, siren and other sound effects; listening experiences, group participation; placing beginning singers near strong singers; atmosphere of encouragement; imitation-echo; pitching songs within speaking range of child; individual attention.[4]

Gould further states the following in summarizing the techniques:

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[3]Elin Stein, "There Are No Monotones," Music Educators Journal, LV, No. 8 (April, 1961), 117-18. (Hereinafter referred to as "There Are No Monotones.")

[4]Oren Gould, "Developing Specialized Programs for Singing in the Elementary School," Council for Research in Music Education Bulletin, No. 17, p. 15. (Hereinafter referred to as "Developing Specialized Programs.")

> Many focused on dual importance of concept formation and skill development. The kinesthetic aspects of learning to combine tonal images with vocal responses seemed to stand out as the process of singing improvement was noted. After a child who has had singing difficulties understands the concepts of singing he must then be led to develop a vocabulary of aural and mental skills as well as vocabulary of motor skills. When the two vocabularies combine to form a single vocabulary of basic singing skills which functions at the instinctive or habit level, his mind becomes increasingly free to expand his singing repertory.[5]

The purpose of this introduction has been to present an overview of the problems involved in the inability of some children to sing in tune. Included in this discussion has been the identification of the uncertain singer, contributing factors to this inability and remedial techniques frequently used for improvement.

Purpose of the Study

The purpose of this study is to compare the effectiveness of two methods on the singing achievement of uncertain singers in remedial training. These two methods are labeled Traditional and Experimental.

The traditional method incorporated frequently used remedial techniques such as pitch matching drills, tone-calls, tonal speech exercises, and body movements. This method differed from the experimental method in that no songs or melodic fragments from songs were used.

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[5]Gould, "Developing Specialized Programs," p. 15.

The Experimental method used song material from the preferred music of the subjects. A music questionnaire was given to subjects which asked them to indicate the type of music they preferred and to list song titles. Rock and roll music was indicated as the most preferred music in the experimental group and, therefore, was the only music used in the sessions. Music concepts such as same-different, upward and downward motion, high-low were taught through the context of songs. Examples to illustrate such concepts were all recognizable tonal fragments from current popular songs, sung by the original artist or group.

CHAPTER II

SURVEY OF LITERATURE

There is rather an impressive list of publications written on uncertain singers. Such publications seem to fall into two broad, though not mutually exclusive categories: (1) expository writings as those frequently found in music education journals and textbooks, and (2) reports of research.

The articles in the first group are very often written by music educators who have had extensive experience with uncertain singers in their classes. Writers of these articles frequently do any one or all of the following: (1) identify the problems of uncertain singers; (2) defend the position that there are no real non-singers, by relating success stories; (3) state the attitude a teacher must take in remedial help; (4) identify certain related environmental, physiological, and social-emotional factors; and (5) present helpful techniques that have been found to be personally successful.

Articles in the second category are findings of investigations conducted employing experimental or

quasi-experimental designs of research. The techniques are planned and controlled by the researcher for measurable comparisons.

As previously indicated, the terminology is almost as vast as the literature. There does not seem to be a generally preferred or standard term of reference in describing persons with singing difficulties. Therefore, articles cited here will use different terminology but they are similar to the term of uncertain singer used in this research.

The incidence of uncertain singers is one of concern for music educators for it clearly points out the need for curriculum guided remedial programs on each grade level.

Gould reports that both the studies of Jersild and Beinstock in 1932[1] and Romaine in 1961[2] report an 18 per cent incidence of non-singers in the elementary schools. This figure has remained almost identical in spite of numerous research studies of the problem.

Gould's study contains a table of percentages of the incidence of Problem Singers (Continuing Through the Year):

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[1]Arthur T. Jersild and Sylvia F. Bienstock, "A Study of Children's Ability to Sing," Journal of Educational Psychology, XXV, No. 7 (1933). (Hereinafter referred to as "Study of Children's Ability.")

[2]Westervelt B. Romaine, "Developing Singers From Non-Singers" (unpublished Ed.D. thesis, Teacher's College, Columbia University, 1961).

1st grade	34.6 per cent problem singers
2nd grade	24.2 per cent problem singers
3rd grade	17.8 per cent problem singers
4th grade	12.9 per cent problem singers
5th grade	11.8 per cent problem singers
6th grade	11.0 per cent problem singers
All grades	18.7 per cent problem singers[3]

Nye and Nye estimate the number of uncertain singers to be from "one-half to two-thirds" in first grade and agree with Gould in stating that this figure declines in the upper grade levels.[4]

In surveys of the incidence of monotonism throughout the United Kingdom, Bentley found the following:

> Approximately 25 per cent of boys and 12 per cent of girls are monotones between the ages of 7 and 8 years, the proportions falling to about 7 per cent boys and 1 to 2 per cent girls at 12 to 13 years. After the age of 8 years between three and four times as many boys as girls are monotones.[5]

Most music educators seem to agree on two basic premises. First, they state that most uncertain singers can be helped, although not to the same degree. Second, most agree that corrective measures should begin as soon as difficulty is detected.

These beliefs are indicated in surveys such as Gould's in which 62 per cent of the 602 respondents believed that all children can and do match certain tones. In answering the questions, "Can all children be helped, and

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[3]Gould, "Developing Specialized Programs," p. 14.

[4]Nye and Nye, Music In the Elementary School, p. 175.

[5]Arnold Bentley, Monotones (London: Novello & Company, Ltd., 1968), p. 63. (Hereinafter referred to as Monotones.)

to what extent?," 70 per cent believed that all children can be helped some, but expressed doubt as to how much can be accomplished with difficult cases of non-singing; 29 per cent believed all children could be helped to participate successfully in classroom singing. One per cent believed it impossible to help some children.[6]

Although there is some basic agreement in the two previously mentioned statements, there is strong criticism of other beliefs and practices in remedial help.

Neiswender states that the "handling of the child voice in the primary grades is in a rut."[7] He specifically refers to the following:

> (1) the fifty year 'protection' of childhood's early voice; (2) the so-called approved limited range; (3) the assumption that all first grade children are sopranos, or that they are not good singers; (4) the belief that children who have low voices sing badly out of tune; (5) the supposition that many children with low voices are inhibited; (6) the acceptance that no real alto voice exists in the first grade.[8]

He is strongly critical of treatment of the primary grade voice as a soprano and labeling the child with a low voice as a non-singer because he does not conform to textbook standards of range.

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[6]Gould, "Developing Specialized Programs," p. 14.

[7]Charles Neiswender, "Is It Too Late to Teach All Children to Sing?" Music Educators Journal, XLI (September-October, 1954), 33.

[8]Ibid.

A similiar critical position is taken by Cleall[9] who states that we cannot force our expected levels of musical development on the child but must accept what he can do. "If the poor singer cannot adjust to us than we must adjust to him by accepting the notes he can sing and letting him use them often as the basis of his active experience of song."[10]

In recent decades, music educators have become increasing aware that certain psychological and emotional factors may be involved in a child's inability to sing.

In the survey by Gould, "psychological inhibitions toward singing created by various environmental impacts,"[11] was listed by his respondents as the second cause of singing problems. Stein[12] discusses the child who reflects the lack of self-confidence and security in his school environment in his singing voice. The timid child, the tense child, the child who thinks he cannot sing, the quiet, shy student are discussed in her article. Paul lists "emotional

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[9]Charles Cleall, "Tone Deaf or Lazy Ear?" Music Teacher and Piano Student, XLVIII (September, 1969).

[10]Ibid., p. 13.

[11]Gould, "Developing Specialized Programs," p. 14.

[12]Stein, "There Are No Monotones."

or mental blocks because of improper criticism"[13] as a similar cause among adults with singing problems.

In an article by Robison, a music therapist, she describes the prevalence of institutionalized children who are poor singers. The author states that monotones are generally the rule rather than the exception in many institutional settings. "The incidence of conversational singer was in inverse ratio to that in groups of children from normal, reasonably happy home situations."[14] This therapist frequently found the monotones to be the apathetic, unresponsive, expressionless-faced children who caused no trouble but were unpopular, and withdrawn in their peer relationship.[15]

Many educators believe that the problems of adult uncertain singers do not differ from that of the young uncertain singers except in degree. Paul, in relating his work with non-singing adults, states the following:

> An inevitable and significant corollary to the thesis that all can learn to sing is that almost all singing problems of adults are caused by neglect, ignorance, or misguided zeal. In other words, the difficulty usually is technical and/or psychological rather than musical.[16]

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[13]Quida Paul, "Working With Singing Problems of Adults," Choral Journal, VI-VII (May-June, 1967), 13. (Hereinafter referred to as "Singing Problems of Adults.")

[14]Doris Robinson, "New Horizons for Monotones," Music Educators Journal, VI-VII (May-June, 1967), 43.

[15]Ibid.

[16]Paul, "Singing Problems of Adults," p. 13.

The causes of adult singing problems he lists are almost identical to those listed by educators in discussing problems of students.

Reports of many remedial training periods with uncertain singers are reported by researchers and classroom teachers both in individual and group work.

In an early investigation conducted by Wolner and Pyle,[17] seven extremely "pitch-deficient" children underwent a training period to distinguish pitch and to learn to sing. The piano and tuning forks were used in the training period which consisted on an average of sixteen hours per subject over a period of eighty-one days. The results were that all seven pupils learned to discriminate the intervals of octaves, fifths, thirds, whole tone, and semitones in a range of four octaves. Four of the subjects were able to sing several songs with few or no errors.

During the same time period, Jersild and Bienstock[18] conducted research to study the ability of 470 children and 65 adults to vocally reproduce pitches. Findings indicate that there was an increase in total range in subjects ages 2-9 with a decline at age 10. There was greater improvement in subjects ages 2-6 years than from

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[17]Manuel Wolner and W. H. Pyle, "An Experiment In Individual Training of Pitch-Deficient Children," Journal of Educational Psychology, XXIV (1933).

[18]Jersild and Bienstock, "Study of Children's Ability."

6 years to maturity. According to their findings, a child realizes a large portion of his potential pitch range in the first three grades. These findings have far reaching implications for music educators for it suggests that uncertain singers with limited ranges must be given help in early childhood if they are to increase their range and singing progress.

Fieldhouse,[19] using fifty subjects ages nine to eleven, found that a defective tonal memory was a very important cause of singing out-of-tune. If the singer cannot remember the notes to be reproduced he stops singing or sings the wrong notes. When he has not remembered notes accurately, he does not sing them accurately.

In a study of monotonism, Bentley received information from teachers throughout the United Kingdom on 16,669 students who persistently sang out of tune. He interprets the following:

1. Monotones, as a group, reveal significant deficiencies in both pitch discrimination and tonal memory, but not in rhythm memory.
2. Monotonism, as a condition, appears to be a form of retarded development in the case of most children, but in a small proportion (about 4 per cent) the condition persists throughout childhood.[20]

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[19] A. E. Fieldhouse, "A Study of Backwardness in Singing Among School Children" (unpublished Ph.D. thesis, London University, 1937).

[20] Bentley, Monotones, p. 63.

Joyner[21] in his work with thirty-two monotones found the most interesting point to result from remedial training of real monotones was the parallel development which took place between the ability to make definite, easy, and accurate vocal responses to music material and the ability to recall the same material.

Paul has found group work to be most effective in working with adult uncertain singers. He states the following reasons for group work:

1. It makes possible the alternating of group and individual work and moving from one to the other rapidly enough that energy span is not pushed beyond the limits of control.
2. One can hear what is happening in others voices much more easily than in one's own voice.
3. The feeling of isolation and strangeness which these students usually have in relation to music is dissipated through working with others with similar problems.[22]

As a part of remedial training, Roggensack states that the following pertinent factors should be investigated in monotone correction:

1. Quality of Speaking Voice. This is often an indication of physical factors that affect the ability to sing.
2. Rhythm Test. If the child cannot sing but is able to respond rhythmically to music, there is a point in favor of eventual correction of the vocal handicap. It indicates he is not without musical feeling.
3. Recognition of Melodies. This often indicates whether a child hears and feels that which he cannot yet put into his voice.

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[21]Joyner, "The Monotone Problem."

[22]Paul, "Singing Problems of Adults," p. 14.

4. Mentality. An I.Q. is no indication of musical ability, but it may be indicative of an ability to concentrate on melody or pulse or of his degree of coordination in responding either rhythmically or vocally to what he hears.
5. Personality Factors. There are personality traits that hinder the child's musical development. Timidity, nervousness, flightiness and extreme agressiveness may all be hindrances.
6. Health Check. Englarged and infected tonsils have their effects upon the ability to produce a tone. Malnutrition is another factor because it robs the child of the necessary vitality to sing well.[23]

This has been a selected review of literature which has been published to enhance our knowledge and working skills with uncertain singers. Much research has been conducted by graduate students whose findings are unpublished or unavailable.

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[23]Delinda Roggensack, "Pertinent Factors in Monotone Correction," Music Educators National Conference, 1930-40 Yearbook, pp. 369-70.

CHAPTER III

DESIGN OF THE STUDY

This study was conducted during spring of 1971 for eight weeks in an elementary school in East Lansing, Michigan. Grades in the elementary school were K-5. The school had three fifth grade classes, totaling seventy-five fifth graders. These three classes were seen twice a week by the vocal music teacher. Each class had one separate thirty-minute period in the morning and one combined fifty-five minute period in the afternoon in which the three classes met together.

The music teacher, earlier in the year, had tested all the fifth graders to select the better singers for special choir membership. Thirty-seven students were chosen for membership and it was from the remaining students that the uncertain singers were selected. In preparation for a program, choir members met to rehearse at a time separate from that of the two music periods, usually before or after school. Two music programs were scheduled during the time of this study. Since these

programs involved all of the fifth graders, the number of subjects in the study had to be limited so that only a small percentage of the students would miss rehearsals which were frequently scheduled during the music periods.

Statement of the Problem

No differences in the singing achievement of subjects using traditional remedial techniques, without song material, and those in the experimental group using melodic fragments from their preferred music is expected.

Null Hypothesis

There will be no differences in the singing achievement of uncertain singers in the control or experimental group.

Screening

Each of the thirty-two students were requested to sing three songs: (1) America, the Beautiful, by Bates and Ward;* (2) Creaking Saddle, by Morhardt and Early;* and (3) a song of their choice.

The first song is one of the frequently sung patriotic songs. It is the first song in the Discovering Music Book Five which was used in the vocal music classes. The second song, taught earlier in the year, was one the

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*Arrangements of these songs are in Discovering Music Book Five, Follett Publishing Company, 1966, pp. 4, 123.

music teacher stated that fifth graders knew and frequently requested in the music periods. The third song was one of the subject's choice; the student was asked to sing a song that he especially liked. This was done to ascertain if there was any difference, in accuracy in the singing of this song in comparison to the other two songs. In selecting the third song, most of the students either did not know any songs outside of the fifth grade book or could not sing a favorite song in its entirety. Therefore, the most frequently sung songs were Cindy, an Appalachian Folk Song;* When Johnny Comes Marching Home, by Louis Lambert;* and Star-Spangled Banner, by Key and Smith.*

The subjects were individually tested and recorded. Twenty of the thirty-two students receiving the lowest pretest scores were identified as uncertain singers and were chosen for the project.

Placement

Of the twenty subjects, ten were in one class, six in a second class, and four in a third class. Placement of subjects from three classes into control and experimental groups was made on the following basis:

1. The largest number of subjects in one class served as one treatment group.

2. The second treatment group was a combination of the other two classes.

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*See note on previous page, pp. 84, 8, 218.

3. In an administration of a music questionnaire which will be discussed later, the two smaller groups of students from two fifth grade classes indicated a preference for one type of music, that of rock and roll.

4. The group of ten subjects from one class had a greater divergence of listening preference ranging from serious concert music to jazz.

Based upon the above factors, the group of students indicating a preference of rock and roll was termed experimental and was composed of subjects from two fifth grade classes, totaling ten. The group of students from one class indicating a greater diversity of listening preference was termed control.

Scheduling

Subjects participated in remedial sessions during the same time as their homeroom's regularly scheduled music period. The regular music period consisted of each fifth grade class meeting for a thirty minute period one day a week in the morning, and in a combined fifty-five minute period one afternoon a week. The uncertain singers met separately from their classmates who went to the regular music teacher.

The researcher was without the use of a piano in the morning sessions but had the availability of one for the afternoon session. The use of the piano in each session would have permitted subjects to have more consistent exposure to it and would have been most advantageous for subjects having low singing ranges. The autoharp, resonator bells, and pretaped music were used in the morning sessions.

In the afternoon sessions, control subjects met as one twenty-five minute group and experimental subjects as the other twenty-five minute group.

Rationale for the Use of Preferred Music in Experimental Method

Although the musical taste of children ages 10-12 is certainly not clearly formed or permanent, they are aware of the popular music heard on records, radio, and television. It is perhaps not until later in the teen years that a certain preoccupation, as evidenced by collecting records, collecting pictures of the artists, and endless hours of radio listening occurs. Nonetheless, children ages 10-12 are certainly aware of this music and often identify it as music which they like most.

Rogers[1] investigated the musical preferences of children aged 10, 13, 15, and 18. He played fifty-seven pairs of recordings to 635 children of the above ages. The two excerpts were taken from serious classical, popular classical, "dinner" music, and popular music. The subjects were simply asked which of the two they preferred. The results showed an overwhelming preference for popular music at all grade levels. Morever, popular music was chosen to an even greater extent with increasing age.

Wing[2] in a much earlier investigation noted the adolescent preference for popular music of jazz and dance music. In his thesis, he lists a number of reasons. He states that in adolescence, a connection between music and emotion begins to develop. Wing states that the adolescent is going through a period of independence. Popular songs are a way of declaring such independence from the preferences of the older generation.

The following reasons are presented for use of the popular music with uncertain singers in this research:

1. If the uncertain singer has not had successful experiences with music by the upper elementary

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[1]V. R. Rogers, "Children's Expressed Musical Preferences at Selected Grade Levels" (unpublished Ed.D. thesis, Music, Syracuse University, 1956).

[2]Herbert Wing, "Musical Ability and Appreciation" (unpublished Ph.D. thesis, London University, 1941).

levels (4-6), the probability is greater that he soon will not like music. Therefore, if music can be used that does appeal to him, he may continue his interest in music longer.

2. Many vocal artists sing in a low range to permit ease in style and performance. It may be possible for some uncertain singers to sing in these same ranges of many of the recorded songs.

3. In the development of aural perception, music educators stress the need for repetition. There are many repetitive elements in popular music, particularly rhythmic and melodic elements, which account in part for its popularity, in that it can be easily "picked up" by those with little or no formal music training.

4. When a child is learning to match pitch, it may be easier for him to do so if he hears and imitates the quality of sound of a favorite male or female artist until he makes enough musical gains and feels confident enough to sing independently.

5. A child may respond more readily to music in the form of popular songs in comparison to tone-calls, and chants. The appeal of the music helps him to focus more on the music and less on his inability or fear of singing.

It should not be implied that the writer advocates a steady diet of this music, nor that the music teacher should not be selective in her choice of song material, nor that preference of popular music is incompatible with enjoyment of serious concert music, or music of the classroom.

Whether used in remedial training sessions or other purposes, the integration of popular music with classroom music can help to increase a child's musical ability and understanding. A child can broaden his total musical experience by hearing and making certain similarities and comparisons with music heard at home and at school.

Control Procedure

Sessions One and Two

The beginning sessions focused on hearing and recognition of same and different pitches. In these sessions, the researcher sang two pitches of the same duration and asked subjects to judge if they were alike or different. Subjects then were asked to match the pitches sung. The subject himself or other group members were asked to judge if the notes sung were same or different, not right or wrong. The exercises were continued using resonator bells with the researcher singing one pitch and playing one on the bells. Subjects were asked to judge if the note sung was same or different from the note played and to match the pitches. Many of the subjects experienced

difficulty in hearing the sameness of pitch of the voice and resonator bells due to the unfamiliar quality of the resonator bells. However, subjects showed far less difficulty in judgment when these exercises were repeated on the piano. The exercises were alternated in presentation of voice and instruments from which to match pitch.

Session Three

Each subject was given a resonator bell to begin pitch matching exercises. Each subject sang his name on the pitch of his bell. Each took turns matching the pitches of his neighbor's bells with the neighbor judging if the note sung was matched correctly. Bells were rotated using same procedure except the subject himself judged if he had sung the same pitch of his neighbor's bell.

Sessions Four and Five

The piano was used in review of pitch matching. The researcher distributed the bells and then played random pitches on the piano which included those of the bells given to subjects. Each subject stood when he heard the pitch that was the same as his bell and then sang that pitch.

Simple three and four note exercises using various combinations of bells were sung. The researcher would sing a simple melodic exercise on a neutral syllable and tell subjects having bells with those pitches to come forward.

The remaining group members would repeat the exercise as subjects with the particular bells tried to arrange themselves in correct melodic sequence. Each subject sang his note at the appropriate time and then individually sang the complete exercise.

Sessions Six and Seven

By the time of these sessions, subjects were judged ready to progress to longer and more interesting melodic exercises. Melodies of stepwise motion were used to illustrate melodic motion up and down. A tone step-ladder was particularly helpful in presenting a visual image. The term octave, which was familiar to some subjects was briefly introduced. Scalewise exercises emphasized the octave. Due to the limited range of most of the subjects, only five notes (g, a, b, c', d') were in the range which could be sung in octaves.

Exercises followed in which subjects had to close eyes and identify if the second pitch played was higher, lower, or the octave up or down. Each subject than sang both notes he identified. The same procedure was used with the piano.

Sessions Eight and Nine

Exercises progressed from stepwise motion to melodies containing skips, leaps sung on neutral syllables. These exercises took the form of short melodies and chants although no melodic fragment from any song was used. The

autoharp and piano were both used in accompanying the melodic exercises. Melodies sung by the researcher alternated with those outlined by the piano for subjects to sing.

Sessions Ten, Eleven, and Twelve

These sessions were in preparation for the final singing evaluation. Subjects were told they would sing three songs as they had done in the screening process. Two of the songs had already been selected and the third song would again be a song of their choice. Subjects practiced both group and individual singing of these songs. This was the first time during the sessions that song material was used. Due to the length of time required for the final evaluation of each subject, there was not a practice session on the day of the final recording.

Experimental Procedure

The experimental group was given melodic fragments from music preferred by the subjects for singing and illustration of concepts. Examples to illustrate the concepts of speech-singing, same-different, up-down, step-skip, were recognizable in fragments from songs sung by the original artist or group.

Session One

The first session focused on recognition of the difference between singing and saying. This was done because the first singing evaluation revealed that some

of the subjects were speaking rather than singing the words. To illustrate the contrast between singing and saying, two popular songs in which the artist spoke a portion of the words and then returned to singing were used. They were Glenn Campbell's Honey Come Back, and Diana Ross' Some Day We'll Be Together. After listening to these two examples, lyrics from popular songs were first spoken and then sung on one pitch.

Sessions Two and Three

The next two sessions concentrated on the concept of same-different. The researcher asked subjects to judge if two notes of equal duration were same or different and then to match them. The paired pitches, played on the piano and resonator bells were to be later heard on recordings which had melodic fragments using the same paired combinations. In each fragment, subjects matched pitches as well as identified the notes which were the same (repeated) and those that were different. The fragment Hey Jude by the Beattles having an interval of a minor third was sung as a tone call beginning on various starting pitches. I Think I Love You by the Partridge Family uses two notes in this sentence. The first note is repeated until a change of a major second occurs on the last word. This fragment was sung on various starting pitches. Cherish by the Association, likewise has a

beginning sentence which is sung on one note throughout until the change of a major second on the last syllable of the last word. Subjects sang with recordings, the piano, and played the fragments on the resonator bells.

Sessions Four and Five

These sessions were a basic continuation of pitch matching progressing from two to three and four note fragments. The songs used were Double Lovin' sung by the Osmond Brothers, Boots sung by Nancy Sinatra, and Close to You sung by the Carpenters.

In the first song, the fragment of three notes on "double, double, loving," was first outlined on the piano and subjects were told to listen each time it was repeated on the recording. Intervals of a major second and major third are in this fragment. The fragment "these boots were made for walking" from the second melody has three notes with intervals of a minor third, major second, perfect fourth. Subjects listened to the fragment, sang it, and played it on resonator bells. In the third song, the researcher asked how many could sing any portion of the song Close to You; many could. The researcher played the song on the piano until the fragment "just like me they longed to be close to you." This fragment is based on four notes, three of which are continuously repeated with intervals of minor third, perfect fifth, major second. Subjects sang this fragment with the piano and recording.

Sessions Six and Seven

The concept of motion was illustrated through several songs with upward and downward motion. It was found that it was easier for most subjects to sing fragments in downward motion. Songs used having melodic fragments in downward motion were Love Is Blue sung by Claudine Longet, Rose Garden sung by Lynn Anderson, Bridge Over Troubled Water sung by Simon and Garfunkel. These melodic fragments were sung with the recordings, the piano, autoharp, and resonator bells.

Sessions Eight and Nine

There was a review of song material from previous sessions. Familiar melodic fragments from popular songs illustrating skips and leaps in melodies were introduced. Portions of Up, Up, and Away sung by the Fifth Dimensions, Raindrops sung by B. J. Thomas, and What the World Needs Now sung by Dionne Warwick were used in the sessions. Subjects sang with the recordings and piano, and played the fragments on the bells with piano and autoharp accompaniment.

Sessions Ten, Eleven, and Twelve

These sessions were spent in preparation for the final singing evaluation. Subjects practice in groups and individually. Members of this group practiced the same two selected songs as did members of the control

group. However, in the song of their choice some chose to sing the popular songs from which melodic fragments had been taken. As with the control group, there was no practice period on the day of the final evaluation.

CHAPTER IV

RESULTS

Music Questionnaire Data

A music questionnaire was administered to subjects immediately after they were selected to participate in the study. Of the twenty subjects selected for the study, sixteen continued in the study until its completion. Of the sixteen subjects, eight were in the control and eight in the experimental. Their responses to the questionnaire is discussed below. A copy of the questionnaire is shown in the Appendix.

The sixteen subjects were composed of five boys and eleven girls. The mean age of all subjects was 10.40. For the control group, the mean age was 10.56 and 10.25 for the experimental group.

A majority of subjects, 62.50 per cent, indicated a music preference of rock and roll, 18.75 per cent preferred folk, 12.50 per cent preferred serious concert music, and 6.25 per cent preferred jazz. In the control group, 37.50 per cent preferred rock, 25 per cent preferred folk, 25 per cent preferred serious concert music, and

12.50 per cent preferred folk. In the experimental group, 87.50 per cent preferred rock, 12.50 preferred folk.

Of the sixteen subjects, 31.25 per cent were taking lessons on an instrument, 37.50 per cent of the control group and 25 per cent of the experimental group were taking lessons. Of the 68.75 per cent not taking lessons, 54.54 per cent wanted to play an instrument, and 45.45 per cent did not wish to do so. In the control group, 62.50 per cent were not taking lessons and of this amount 60 per cent did not wish to play an instrument. Of the 75 per cent not taking lessons in the experimental group, 33.33 per cent did not want to play an instrument.

The average time that all subjects had been playing an instrument was 10.30 months. The control group had been playing for an average of 10.16 months, the experimental group, 10.50 months.

Of the total number of subjects, 56.25 per cent had family members who played instruments. In the control group, 62.50 per cent had family members who played and in the experimental group, 50 per cent had family members who played.

Questions 8, 9, 10, and 11 were used to place subjects into groups of high and low musical backgrounds. Those subjects taking lessons on an instrument and/or had family members who played were placed in the high musical background group (HMB). Those subjects who played no instrument nor had family members who did so were placed

in the low musical background group (LMB). Of the total number of subjects, 62.50 per cent were in the HMB group, and 37.50 per cent in the LMB group. In the control group, 62.50 per cent were in the HMB group, and 37.50 per cent in LMB group. In the experimental group, the same percentages of 62.50 per cent were in the HMB group and 37.50 per cent in the LMB group.

More subjects expressed a desire to be in an instrumental group than had expressed a desire to take lessons in a previous question. Of the total number of subjects, 12.50 per cent wanted to sing in a choir in middle school, 18.75 per cent wanted to play in an orchestra, 56.25 per cent wanted to play in the band, and 12.50 per cent did not wish to be in any musical group.

All of the subjects indicated they liked music. A total of 87.50 per cent of all the subjects liked to sing; 93.75 per cent wanted to sing better.

Results of Final Singing Evaluation

The final singing evaluation was composed of three songs and a 15-item pitch matching section. The individual responses of all subjects were taped and later evaluated by two judges.

The first song, America, the Beautiful,* was the same on the pre- and post-tests. The second song was

*These songs are found in Discovering Music Book Five, Follett Publishing Company, 1966.

Shenandoah a Capstan chantey.* The third song was a song of the subject's choice. In sessions ten, eleven, and twelve of the control and experimental groups, subjects had rehearsed the songs for the post-test. Some of the members in the experimental group chose to sing some of the popular songs from which melodic fragments had been used in the remedial sessions. Other subjects in the control and experimental group sang songs from the music book which they already knew, or had requested to learn in the last three sessions. No subjects were permitted to sing the same song of his choice for the pre- and post-test.

Judges rated subjects on a scale of 1-5. Each judge rated all three songs. Subjects had a total score from each judge. In an effort to test reliability among judges, the Sperman Rank Correlation Coefficient was used. The pre- and post-test ratings given by each judge were totalled for each subject. The rating of judges A and B were then ranked from highest to lowest. The difference of the ranks was computed and then squared. A correlation of .9625 was found among the judges. From this high correlation, it can be assumed judges were in agreement on ratings of the subjects.

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*See note on previous page, p. 116.

To test for significant differences between the means of the two groups, a Mann-Whitney u test using gain scores of the subjects was computed. The difference of pre-test and post-test singing scores were used as gain scores and then ranked. The results are indicated in Table 1.

TABLE 1. Difference between gains of control and experimental groups.

E Score	Rank	C Score	Rank
16	1	11	5
13	2	10	6
12	3.5	9	7.5
12	3.5	7	9.5
9	7.5	7	9.5
4	13.5	5	11.5
2	15	5	11.5
1	16	4	13.5
	$R_2 = 62.0$		$R_1 = 74$
			$u = 26$
			$(p < .28)$

The u value of 26 would be significant at the .28 level of significance. Thus, the gain scores for the experimental group were not significantly different from gain scores made by the control group. The two treatments did not differ significantly in improvement of subjects. The null hypothesis cannot be rejected due to the high probability of chance.

A Mann-Whitney u test was also computed for the 15-item pitch matching exercise. The results are indicated in Table 2.

TABLE 2. Difference between pitch matching scores of control and experimental groups.

E Score	Rank	C Score	Rank
15	1.5	15	1.5
14	3	13	4
10	6	11	5
8	7	7	8
6	10	6	10
5	13	6	10
4	15	5	13
2	16	5	13
	$R_2 = 64.5$		$R_1 = 71.5$
			$u = 28.5$
			$(p < .37)$

The u value of 28.5 was not significant. There was no significant difference between the pitch matching abilities of the control and experimental groups. The null hypothesis was not rejected.

Results of Teachers' Evaluation

Near completion of the study, the three fifth-grade classroom teachers were asked to evaluate each of their students in the study on five areas: (1) reading, (2) mathematics, (3) spelling, (4) self-concept, and (5) peer relationship. Teachers were to indicate high ability,

average ability, and low ability in reading, mathematics, and spelling. Self-concept was to be rated good, fair, and poor. The three choices for peer relationship was (1) makes friends easily and is well liked; (2) does not make friends easily; and (3) is easily influenced by his peers.

High, average, and low ability were rated 1, 2, 3, respectively. Self-concept image of good, fair, and poor were also rated 1, 2, 3, respectively. Reading, mathematics, spelling, self-concept, peer relationship, and musical gain scores were all correlated. The correlations obtained are shown in Table 3.

There were no high correlations between music achievement and academic skills or music achievement and self-concept or peer relationships. The fact that there were no correlations may be due to the small size of the sample population.

Final Questionnaire After Post-test

A final questionnaire was given to subjects at the completion of the study. The purpose of this questionnaire was to ascertain the subjects' feelings about having been in the study and their feelings of achievement. A copy of the questionnaire is shown in the Appendix.

Of all the subjects, 56.25 per cent thought they sang better, 31 per cent did not know if they sang better, and 12.50 per cent thought they did not sing better.

TABLE 3. Correlations of teachers' evaluation.

	Reading	Math	Spelling	Self-Concept	Gain Scores	Peer Relationship
Reading						
Math	0.73865					
Spelling	0.75586	0.58331				
Self-Concept	0.1123	0.07956	0.16415			
Gain Scores	0.32809	0.53139	0.33273	-0.45573		
Peer Relationship	-0.02876	-0.06062	0.12508	-0.50800*	0.16759	

*This figure is suspect due to the fact that one teacher marked all ten of her subjects as having a good self-concept. This evaluation is not believed to be accurate.

All of the subjects responded they would be willing to sing more, 37.50 per cent indicated they would be willing to sing a solo if asked, 43.75 per cent indicated they were not sure if they would be willing, and 18.75 per cent indicated they would not be willing to sing a solo.

A majority, 87.50 per cent, of the subjects thought the special singing group helped them, 12.50 per cent indicated they did not know if the group had helped them, 87.50 per cent said they liked being in the groups, and 12.50 per cent said they did not know if they liked being in the groups.

Conclusions and Recommendations

There were no significant differences between the singing achievement of the control and experimental groups. Neither treatment was proven to be more effective than the other although the pre-test-post-test scores of each group indicate improvement. The null hypothesis could not be rejected. Likewise, there were no significant differences in the pitch matching abilities of the two groups. It can be concluded that these children improved equally well with either method.

There were no significant correlations between music achievement and academic skill or music achievement and self-concept, although 100 per cent of all subjects indicated in the questionnaire, after the study, that they would be willing to sing more. A majority of the subjects

indicated that they thought they sang better and that the singing groups had helped them. Although there were no significant differences in treatment methods, the experimental method is effective as a remedial technique for uncertain singers. Both methods worked equally well.

Four major recommendations are offered for further study. First, this study should be replicated with a larger sample population. Second, the length of the study should be for a longer period with the remedial sessions being shorter but occurring more frequently than twice a week. Third, a group of uncertain singers receiving no treatment should be included in the design of the study to account for maturation in subjects. Fourth, this study should be replicated using subjects in the junior high school age range. Students in the age range of 13-15 listen more to popular music than do students in the age range of 10-11 as were the subjects of this study.

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APPENDIX

MUSIC QUESTIONNAIRE

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MUSIC QUESTIONNAIRE

This questionnaire is to help me know a little more about you, musically. It is very important that you answer all these questions as best you can. No one will see your answers but myself, so please answer them the way you wish.

1. Name 2. Age

3. Name some of the songs you like that you have learned in music class at school.

4. What type of music do you like most when you are at home listening to radio, television, or record player? (Ex. folk music, rock and roll, serious concert music, etc.)

5. Name some of your favorite songs that are on radio and record?

   1. 2. 3.

6. If you could sing in school some of the popular songs on radio and records, what would they be?

   1. 2. 3.

7. Do you have favorite groups or artists that you like to hear sing or play? (Ex. Jackson Five, Stevie Wonder, Tom Jones, etc.)

8. Are you taking lessons on an instrument? Yes No

9. If yes, what is the instrument?
   If no, would you like to play an instrument?
   Which one?

10. For how many months have you been taking? (Year=12 months rather than 9 months school year.)

11. Do your parents, brothers, or sisters play an instrument. Yes No Circle the family person(s). What instrument is it?

12. Would you like to be a member of the band, orchestra, or choir in Middle School? Yes No Which one?

    Which instrument would you like to play in the band or orchestra?

13. Do you like music?

14. Do you like to sing?

15. Would you like to sing better?

THANK YOU for being in the special singing groups? Now that we have finished, would you answer these questions. Circle one answer! HAVE A FUN SUMMER!

1. Do you feel that you sing better?

   Yes No I don't know

2. Are you going to be willing to sing more?

   Yes No I don't know

3. Do you think the special groups helped you sing better?

   Yes No I don't know

4. Did you like or dislike being a member of the special singing groups?

   Yes--liked No--disliked I don't know

5. You may use this space to write whatever you wish to say about being in the special singing groups.