

**DIAGNOSIS AND CORRECTION OF CERTAIN
DIFFICULTIES OF NON-SINGERS**

BY

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**Submitted in partial fulfillment of the requirements
for the Master of Education degree
in the School of Education
Montana State College
July, 1959**

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CHAPTER I

INTRODUCTION

Music Education has been considered one of the responsibilities of elementary teachers in many of the self-contained classrooms. The non-singer in such classrooms has long been a problem for the teachers.¹ Various methods have been employed to eliminate the problem with varying results. However, the non-singer has remained, and the various methods of correction have not been wholly effective. It has seemed to the investigator that music educators have been considering the results rather than the causes for the existence of the non-singer.

Statement of the Problem

It has been the purpose of this investigation to establish some basic areas of diagnosis for singing difficulties and to endeavor to develop corrective procedures as indicated by the diagnosis.

Procedures

Seven pupils from the fourth grade classes of the Livingston Public Schools were selected from a group of fifteen for this study. The fifteen were classified by their classroom teachers as non-singers or as ones who had a great deal of difficulty with singing. These pupils were interviewed by the investigator and the seven were finally selected by

¹Farnsworth, Education Through Music, American Book Company, 1909, p. 16.

him.

The parents of each child were contacted, and approval was obtained from them for the study. Each child was given up to eight free voice lessons by the investigator with the hope that the corrective procedures would result in the ability of the child to sing satisfactorily in the classroom.

Voice Diagnosis. The problem of the voice and its relative pitch seemed to be a very sensitive matter with the child in voice diagnosis. To rely upon casual or incidental observation of pitch problems seemed not at all sufficient. A hasty cataloging of the difficulties of the child seemed equally nonsufficient. The observations might have been nothing more than effects rather than causes.

Therefore, the voice problem of each student was investigated from several different viewpoints. In general the voice problem could be identified through the answers to these questions:

1. Was the child physically able to hear the pitch?
2. Was the child mentally able to hear the correct pitch?
3. Was the child able to control his physical body sufficiently well to produce the correct pitch?
4. Did the child have the drive, determination, and motivation to sing the correct pitch?
5. Was the social background of the child of such a nature to

contribute to satisfactory pitch?

The answer to the question of physical ability was obtained from the child's health folder as well as from conferences with the Health Nurse. The question of mental ability was answered in part by the I.Q. score of the child, in part by his grades, and in part by observation by the investigator. The answer to the question on physical control was obtained through corrective procedures used during the lessons. The fourth question on the drive and determination of the child was difficult to resolve and only a relative answer could be obtained. Information on the social background of the child was obtained through conferences with the child's teacher, parents, and the child.

Three parts of "Measures of Musical Talent" by C. E. Seashore² were used. The parts that seemed most valuable were "The Sense of Pitch", "The Sense of Consonance", and "Tonal Memory". It was hoped that "The Sense of Pitch" would give the investigator some measurement of the native ability to hear high and low tones. "The Sense of Consonance" indicated the ability to distinguish between what sounded good or bad. The "Tonal Memory" measured the ability to remember the note just sung in relationship to the one about to be sung. This test was administered by the investigator through the medium of recordings.

Corrective Procedures. The course of the corrective procedures

²C. E. Seashore, The Psychology of Musical Talent, Silver Burdett.

was determined by the answers to the questions asked in the preceding diagnosis. Corrective procedures used to remedy the problems involved were:

1. Recommending that the physically handicapped seek physical therapy from a physician.
2. Attempting to remove mental sets against voice placement through the use of various devices.
3. Attempting to teach proper use of the voice production mechanism to relieve mechanical difficulties.
4. Developing a stronger desire to sing properly through personal attention and encouragement.

It was beyond the power of the investigator to correct any problem arising from the social background of the pupils.

Case Studies

A case study was made of each child showing his progress or lack of progress. It was taken directly from lesson work sheets in which a detailed account of all procedures and observations was made, and was used to determine the diagnosis and corrective procedure.

Limitations

The number of pupils selected for the study was limited to seven. The lessons were limited to not more than eight because of the time

allowable for lessons. The objective of the lessons was limited to the acquisition of singing ability sufficient to sing classroom music to the satisfaction of the investigator.

CHAPTER II

FACTORS THAT LIMIT CORRECT VOICE PRODUCTION

Several factors seemed to limit correct use of the voice in singing. These were physiological and psychological limitations, incorrect use of the singing mechanism, lack of initiative and motivation, and the social background of the child.

Physiological

From the outset, it was apparent that certain physical deformities or diseases, such as impairment of the vocal cords, would prohibit singing. Such students could not have been expected to sing. The ability to hear may have also been a limiting factor.

For the purpose of this investigation, pupils with such physical limitations were not selected and the consideration of voice problems due to that cause was not undertaken.

Psychological

The I. Q. scores (Kuhlmann-Anderson) for the children ranged as follows: 74, 87, 97, 98, 100, 101, 107. It did not appear that the I. Q. had any significance as a limiting factor in singing. In fact, the child with the highest I. Q. score had greater singing problems than any other.

In cases 4 and 6,³ mental concepts of singing and pitch were

³Appendix pp. 48 and 65

certainly limiting factors. The inability to hear pitches mentally was definitely a handicap in singing. This inability demonstrated itself in any of the following ways:

1. The inability to ascertain the relative highness or lowness of a given pitch.
2. The inability to reproduce the sound in the mind -- to think it.
3. The inability to place the tone mentally in the physique in relation to high or low tones -- to sing to oneself.
4. The inability to so control the physique to produce the oral correct tone.

Incorrect Use of the Singing Mechanism

Singing difficulties are often the result of incorrect usage of the singing mechanism. Cases 1, 2, 4, and 5 all made incorrect use of the singing mechanism. In each of these cases, the limiting factor to singing was the improper use of the voice. There seemed to be little idea as to how the tone could be projected for resonance, nor how the position of the head, chin, lips, and stomach affected singing.

Initiative and Motivation

The lack of initiative on the part of the pupil and the lack of motivation on the part of the classroom teacher could have limited or

prevented successful classroom singing. Lack of self-discipline and the unwillingness to learn were limiting factors in Cases 7 and 1. The type of motivation provided by the investigator may have been a limiting factor as well.

Social Backgrounds

Emotional disturbances often cause singing difficulties as they do in other activities of the child.⁴ Case 3 may well have been an example. Sometime after the lessons had been completed, there was a divorce in the family.

In none of the cases was there an abundance of music in the home. There was a piano in one home, an organ in one home, guitars in four homes, and accordians in two others. None of these instruments were played seriously, however, by the members of the family.

The number of children in the home varied with each case. However, the pupil was the youngest member in a family of much older brothers and sisters in three cases.

Unkind remarks of parents, friends, or teachers have often been regarded as a cause for not singing.⁵ In this investigation there was no

⁴ Pitts, Glenn, Watters, Guide and Teaching Suggestions to Our Singing World, American Book Company, p. 84.

⁵ Ibid. p. 83

evidence of this. Perhaps, had the investigator been highly skilled in psychological therapy, there may have been more positive results in this area.

Summary

In this chapter, factors that limit correct voice production have been discussed. In the next chapter, the corrective procedures for the limiting factors in voice production will be discussed.

CHAPTER III

CORRECTIVE PROCEDURES TO IMPROVE VOICE PRODUCTION

The factors that limited correct voice production were physiological, psychological, lack of initiative and motivation, incorrect use of the singing mechanism, and social backgrounds. The corrective procedure to improve voice production were related to the same factors.

Physiological

Voice problems due to a physical limitation should be referred to a physician. It would have been unwise for the investigator, untrained in such matters, to attempt therapy.

Psychological

While the voice limitations did not seem to be directly related to the I.Q., the corrective procedures were. The rate of speed of learning and the capacity for understanding were definitely considered. In Case 4, in which the I.Q. was 74, explanations had to be made more slowly than with Case 6, who had an I.Q. of 107. It was found that the attention span was much shorter, and the manner in which the material was presented was quite different.

The relative highness or lowness of pitch was presented through the height of the extended arms from the floor, the position of the hands

on the body, the relative position of the notes on the piano keyboard, and the position of the hands on the piano cabinet. The highness and lowness of tones was demonstrated by differences of pitches of the speaking voice. The conversion of the speaking voice to the singing voice was then attempted.

The ability to produce the sound in the mind was made easier by the feelings of high and low presented in the preceding paragraph. However, the process of tone thinking demanded a great deal of concentration. The closure of the eyes and careful listening helped. In Case 4, the position of the hands on the body seemed to be an absolute necessity. All of these procedures were hard to measure. In fact there was no real way to measure them until the tone was actually produced.

The ability to sing to oneself was also impossible to check until the tone was produced aloud. During this step, the child was urged to place his tone where he thought it would match with the given tone.

Then the tone was sung. All the listening, concentration, singing to himself, and tone placement culminated in the vocal sound of the student. This was the test as to how well the preceding steps had been understood.

An interesting observation was the change in scores that occurred in the first and second testing on the "Measures of Musical Talent". On the section "Sense of Pitch", the average increase for all cases was 14.5

percentile points. On the section "Sense of Consonance", the average increase was 19.9 percentile points. On "Tonal Memory", the increase was 15.9 percentile points.

This change may have been due to more familiarity with the test, but the increases seemed rather high and consistent for such a conclusion. Rather, it seemed to indicate that a person could be trained in mental concepts of pitch that would result in a higher score on the test. It seemed that the test may have been more of an achievement test than an aptitude test in this particular investigation.

Correct Use of the Singing Mechanism

Generally accepted methods of voice production were used. The relative position of the body members, the use of the breath, and the use of the resonating chambers were discussed.

In all cases, there was a lack of diaphragmatic pressure. The simple suggestion that the stomach must be pulled in and tightened, seemed to be sufficient to obtain the desired results.

The syllable OO was used to place the tone nearer the mask of the face. It was used to give the feeling of the air passing through the vocal cords rather than originating there. At times the syllable OO was more like the word "Who". This procedure seemed to move the tone out of the throat to the front of the face. The lips were well rounded, almost as if the individual were about to whistle. This was also an aid in

bringing the tone forward.

In Cases 1, 2, 4, and 5, it was suggested that the chin be held back and that the tone come up the back, over the head, and then down to the mask of the face. This tended to relax the throat and permitted a freer tone. There was no particular attention given to the position of the tongue except in Case 5. The tongue was blocking the sound. In most cases, there was some references to the position of the larynx.

This study indicated that one of the principal reasons that pupils have difficulty with singing was due to the incorrect use of the voice singing mechanism. Over half of the cases studied were classified in this grouping.

Initiative and Motivation

Children are usually quite responsive to singing experiences and generally there are few problems of initiative and motivation of the singing processes. In this study, motivation seemed sufficient in all cases except Case 7. The unwillingness to learn shown by Case 7 was not confined to singing only, but the same attitude prevailed for all school subjects.

Careful attention to noting progress of the child, a friendly atmosphere, an attempt to make the child feel important, and the games used for tone matching seemed sufficient for good motivation in most cases.

Social Backgrounds

Insofar as it was beyond the power of the investigator to correct the social backgrounds and outlets for music that may have contributed to singing difficulties of the children, there was no attention given to the problem in this study.

Summary

In this chapter, some procedures have been presented which helped correct singing difficulties. In the next chapter, a general summary along with conclusions, recommendations, and questions concerning further research will be suggested.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This study has been concerned with non-singers who have reached the fourth grade. Inasmuch as the difficulties were not eliminated by the regular classroom teachers, vocal therapy seemed advisable for the children by trained personnel in singing. The investigation showed that singing difficulties may have been the result of physiological or psychological limitations, incorrect use of the singing mechanisms, lack of initiative and motivation, or adverse social backgrounds.

This study has suggested certain types of therapy for those with psychological limitations and incorrect usage of the singing mechanism. Some attention was given to initiative and motivation in the correction of singing difficulties.

Summary

The scores made by the subjects in this study on certain elements of singing ability are shown in Table 1. A comparison was made between the scores on the first lesson and the last.

On the element "Total Tonal Range" the increase varied from none for Case 3 to thirteen tones for Case 2. The average gain was three tones.

On the percent of tones matched, the scores varied from a gain of seventeen percentage points for Case 3 to forty-five points for Case 7. The average gain for all cases was twenty-five percentage points.

TABLE 1. SCORES ON CERTAIN ELEMENTS OF SINGING ABILITY OF THE FIRST AND LAST LESSONS

Case		Total Tonal Range	% of Tones Matched	"Sense of Pitch" Percentile	% of Rightly Sung Tunes	"Tonal Memory" Percentile	Diagnosis	Corrective Procedures
1	1st. Lesson	3	55	18	74	16	Incorrect use of the singing mechanism.	Tighten stomach. Pull in chin. Round lips. Chest high.
	8th. Lesson	8	92	22	95	32		
2	1st. Lesson	2	78	15	69	0	Incorrect use of the singing mechanism.	Tighten stomach. Round lips. Protrude lips.
	4th. Lesson	15	--	51	95	8		
3	1st. Lesson	15	75	15	95	0	Poor posture. Poor listening.	Correct posture. Practice in listening.
	5th. Lesson	15	92	51	95	15		
4	1st. Lesson	2	17	0	30	12	Inability to hear tones. Poor use of singing mechanism.	Matched tones. Corrected posture. Used hand to indicate pitch.
	8th. Lesson	10	36	15	92	32		

TABLE 1. Cont'd.

Case		Total Tonal Range	% of Tones Matched	"Sense of Pitch" - Percentile	% of Rightly Sung Tunes	"Tonal Memory" Percentile	Diagnosis	Corrective Procedures
5	1st. Lesson	10	77	66	40	32	Incorrect use of singing mechanism.	Yawning. Chin down. Tone up back and over head, Tongue flat.
	8th. Lesson	12	100	72	95	76		
6	1st. Lesson	8	46	11	33	4	Inability to hear pitches.	Tone matching. Concentration.
	8th. Lesson	10	82	19	79	0		
7	1st. Lesson	7	17	9	--	0	Lack of initiative.	No positive results.
	8th. Lesson	9	62	5	--	12		
Ave. all cases	1st. Lesson	7	52	19	58	13		
	Last Lesson	10	77	34	90	28		

The results on the "Sense of Pitch" varied from a loss of four percentile points for Case 7 to an increase of thirty-six percentile points for Cases 1 and 2. The average gain for all cases was fifteen points.

The increase in the percent of rightly sung tunes varied from no gain for Case 3 to fifty-eight percentage points for Case 4. The average gain was 32 percentage points.

The results of "Tonal Memory" varied from a loss of four percentile points for Case 6 to a gain of forty-four percentile points for Case 5. The average gain was fifteen percentile points.

Incorrect use of the singing mechanism was the diagnosis for the singing difficulty in Cases 1, 2, 4, and 5. Poor posture resulted in poor singing for Case 3. Inability to hear tones was the diagnosis of the singing difficulty of Cases 4 and 6. Lack of initiative resulted in singing difficulties for Case 7.

Conclusions

Upon the basis of the increases of scores shown in Table 1, and upon the appraisal of the investigator of the singing ability of the cases at the beginning and end of the lessons, it can be concluded that through therapy:

1. The singing range of children can be extended.
2. The ability to hear and match tones can be increased.
3. The sense of pitch can be trained to be more accurate.

4. The ability to remember melodies can be increased.

One general conclusion may be drawn. If the difficulties of singing can be corrected and measured as indicated by the above observations, then singing itself can be improved by vocal therapy.

Recommendations

Assuming that vocal therapy can help singing difficulties, certain recommendations seem advisable.

1. Therapy for those with serious singing difficulties should be administered by personnel trained in vocal techniques.
2. Such a service should be provided in each school system to provide each child with the opportunity to learn to sing. It should be the responsibility of the music supervisor.
3. A music aptitude test should be administered to all students to locate those in need of remedial services. Such a test would be valuable in determining the course of action to be followed.
4. A mental ability test should be used to determine the speed of learning and the mental capacity of the student.
5. Lessons should be regularly scheduled.
6. Lessons should continue until positive results are obtained.
7. Lessons should be approximately 30 minutes in length.
8. A written record of each lesson should be kept. Failure to do this would result in repetition of work already covered and the continuity of lessons would be lost.

Topics for Further Study. This investigation suggests that certain topics would be worthy of further study.

1. What is the relationship between therapy in speech and vocal training?
2. To what degree can the personality of an individual be enriched by learning to sing?
3. How can children with singing difficulties be better motivated to sing?
4. What are the schools of Montana doing to remedy singing difficulties of school children?

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APPENDIX

Letter to Parents

Work Information Sheet

Case Studies

LETTER TO PARENTS

November 5, 1958

Dear Parent:

For my Master Degree Investigation, I am conducting a voice remedial program for certain boys and girls of the Livingston Schools.

Your child has been referred to me by his teacher as one who might benefit from such a program.

The program will consist of eight FREE private voice lessons by me in which I shall endeavor to help each child with his particular difficulty. I am accredited by the State Department of Public Instruction in Voice.

The pupils will be selected by the following plan: 1. The Seashore Test of Musical Ability will be administered. 2. A check will be made with the school nurse to determine any physical causes. 3. The total number of pupils will be restricted to eight.

No names will be used in the paper and you will be advised concerning the progress that may be made.

If you wish your child to avail himself of this opportunity, please have him at the Lincoln School Saturday Nov. 8, at 3:00. The place will be in the old Clerks office in the basement.

Sincerely,

Harold Guthrie

INFORMATION SHEET

NAME _____ AGE _____ I.Q. _____

I. PERSONAL TRAITS.

- A. Physical.
- B. Social Development.
- C. Teacher Comment.
- D. Attitude Toward Music.

II. MEASURES OF MUSICAL TALENT SCORES

A. Pitch _____ B. Consonance _____ C. Memory _____

III. HOME FACTORS.

- A. What music is there in the home?
- B. Other members in the family.
- C. Occupation of father.
- D. Community Outlets.

IV. HEALTH INFORMATION

V. WORK SHEET.

- A. Best Tone _____, B. Ability to sing intervals _____.
- C. Ability to sing half steps _____, D. Ability to match
tones _____, E. Range _____, F. Ability to hear
the harmonies of a major triad _____.
- G. Description of voice quality _____.

CASE ONE

The subject, age nine, I.Q. 98, was a large overweight boy of 95 pounds. His father was employed by the American Railway Express Company. He had three older brothers and two older sisters.

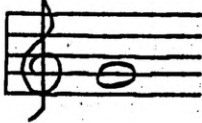
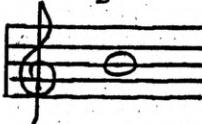
His speaking voice did not vary in pitch. His conception of singing was limited to three tones. When he was first interviewed, he could match only those tones within his singing range. He could not sing any chromatic steps. He had no idea of breath in singing. He had no conception as to where the voice ought to resonate. The quality of his tone was breathy and small. His posture was extremely poor.

He attended a pentacostal church and participated in the singing. There was some music in the home. One brother played a guitar and trombone. The subject took sixteen lessons on a guitar.

He stated that he did not like music but he admitted freely that he enjoyed the class piano of the year before and that he enjoyed the song flutes of the present year. He insisted that he did not like to sing but that he liked to come to his voice lesson.

LESSON ONE

Lesson one consisted of tone matching and a game called wrestling was used. Should the subject have matched three consecutive tones, he would have won the match. However, if he had failed to match three consecutive tones, he would have lost the match.

MATCH NO.	NO. OF FALLS	THE NOTE TO BE MATCHED	RESULT
I	1	C	Right
	2		Sang Db
	3		Sang D
	4		Right
	5		Right
	6		Right
II	1	E	Right
	2		Right
	3		Right
III	1	G	Sang F#
	2		Right
	3		Sang F#
	4		Sang F
	5		Right
	6		Right
	7		Right
IV	1	B	Sang G
	2		Sang Bb
	3		Sang A

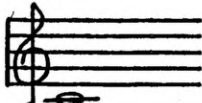
Summary

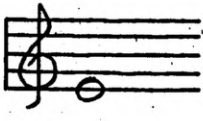
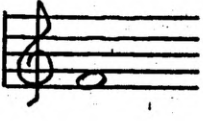
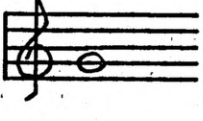
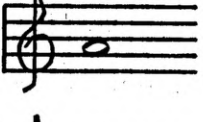
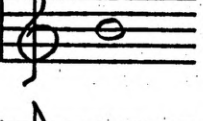
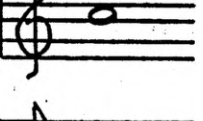
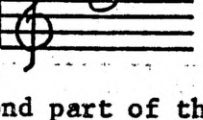
Only three notes were sung correctly in this lesson but the range was wider than that observed in the first interview. Of importance to the subject was the fact that he won three out of four matches even though the examiner had done his best to make this possible.

LESSON TWO

Lesson two opened with tone matching. The pupil was told how airplanes must come in for landings at certain altitudes given by the control tower. It was pointed out that should an airplane fail to stay on its designated altitude, there would be a collision. The process of landing was reversed and it was assumed that the planes were taking off. The same care was necessary to avoid collisions.

The pitch of the piano was likened to the control signal and it was played constantly until the subject thought he had received the call correctly. The scale on the piano represented different altitudes. Different heights on the piano cabinet indicated different altitudes. When the signal was received, he put his hand on the proper level of the cabinet and moved it horizontally as he sung. This provided a means of feeling the tone with the fingers.

ALTITUDE	NOTE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
1000 ft.		Sang E	Right	

ALTITUDE	NOTE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
2000 ft.		Sang D#	Right	
3000 ft.		Right		
4000 ft.		Right		
5000 ft.		Sang F#	Sang F#	Right
6000 ft.		Right		
7000 ft.		Sang A	Right	
8000 ft.		Right		
9000 ft.		Sang C	Sang Db	Right

The second part of the lesson consisted of line one of "America" in the key of F. The melody was played on the piano and the pupil followed with the following results.

First Trial: There was no musical response on the syllable 00.

Second Trial: All tones matched except one on the syllable 00.

Third Trial: This was satisfactory on the syllable 00.

Fourth Trial: Words were tried and the result was unsatisfactory.

Fifth Trial: Words were sung and only one note was missed.

Sixth Trial: This was satisfactory.

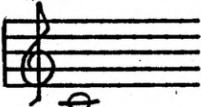
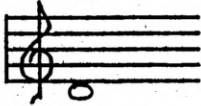
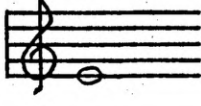
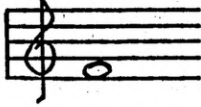
Seventh Trial: This was satisfactory.

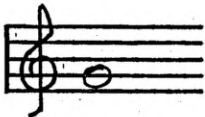
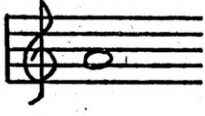
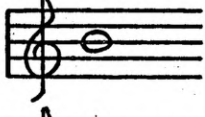
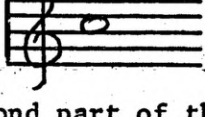
Eighth Trial: This was satisfactory.

During this lesson, it became apparent that the voice was not being used correctly. Accordingly it was suggested that the stomach be tightened, the chin pulled in, the chest raised, and that the lips be round and off the teeth. When these things were done, the range was extended and tone quality became better.

LESSON THREE

Lesson three was a continuation of lesson two.

ALTITUDE	NOTE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
1000 ft.		Right		
2000 ft.		Right		
3000 ft.		Right		
4000 ft.		Right		

ALTITUDE	NOTE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
5000 ft.		Sang A	Right	
6000 ft.		Sang B	Right	
7000 ft.		Right		
8000 ft.		Sang B	Sang D	Right

The second part of the lesson was the singing of line one of "America" in the key of F.

- First Trial: There was a negative result on the syllable 00 due to poor posture.
- Second Trial: There was good posture and it was almost right on the syllable 00.
- Third Trial: There was not sufficient effort on the part of the subject.
- Fourth Trial: This was correct except for one note on the syllable 00.
- Fifth Trial: This was sung all right, using the idea of airplane and landing field on the syllable 00.
- Sixth Trial: It was sung in the key of G on the syllable 00 and it was all right.

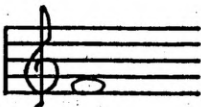
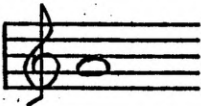
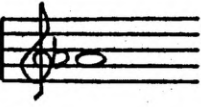
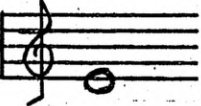
Summary

There were good results when posture was observed. There seemed

to be some laziness about singing.

LESSON FOUR

Lesson four opened with matching of random tones. No games were used for motivation. The subject closed the eyes, listened to the tone, sang the tone to himself, and then sang it aloud.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang G	Right	
	Sang F	Sang G	Right
	Sang Bb	Right	
	Sang Bb	Right	
	Sang F	Right	

The second part of the lesson consisted of singing.

First Trial: The first line of "America" was sung with words with unsatisfactory results.

Second Trial: The same song was sung in the key of F with words quite well after he had been told that he was lazy.

Third Trial: He sang the song all right after insistence of the

investigator that he work.

Fourth Trial: He sang the same song correctly.

Fifth Trial: The song was all right.

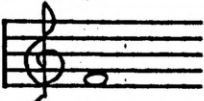
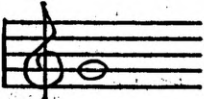
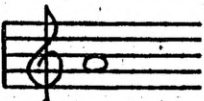
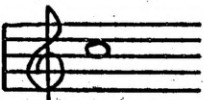
Sixth Trial: The song "Jingle Bells" was sung with words correctly.

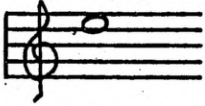
Summary

The matching was quite encouraging because of the higher score on random selection of tones. It seemed that both posture and laziness were factors in the difficulty in singing.

LESSON FIVE

Lesson five opened with matching of tones.

NOTE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Wrong	Wrong	Right
	Right	Right	
	Right	Right	
	Wrong	Right	Right

NOTE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Right	Right	
	Wrong	Wrong	Right
	Right	Right	

The second part of the lesson was devoted to singing.

First Trial: The song "Silent Night" was sung with words in the key of E and only one note was missed.

Second Trial: The same song was repeated and sung correctly.

Third Trial: "O Come All Ye Faithful" was sung with words and was satisfactory. There was lack of breath support on the highest tones.

Summary

The singing improved when the concept that the tone came up the back, over the head, and then down to the mask. This idea helped the high tones. The first part of the lesson was encouraging since these were random tones and they were sung without help by raising or lowering the hands. The pitch was given only once before singing.

LESSON SIX

Lesson six opened with some oral reading in which the pitch of

his speaking voice was checked. It was discovered that it had increased in range six tones.

"Silent Night" was sung with words in the key of F very nicely. Only the highest note was missed.

"O Little Town of Bethlehem" was sung in the key of G. He sang it very nicely after being reminded about the path a tone must travel.

"Jingle Bells" was sung in the key of Bb with a good musical line and all notes were sung correctly except the low Bb.

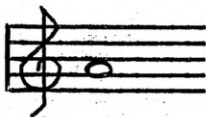
"America" was sung in the key of G with no notes missed.

The second part of the lesson was tone matching.

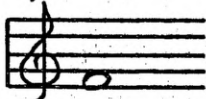
TONE TO BE MATCHED

1st. TRIAL

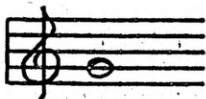
2nd. TRIAL



Right

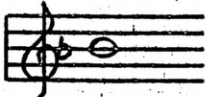


Right

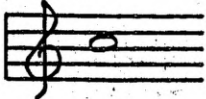


Wrong

Right

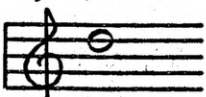


Right



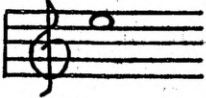
Right

Right



Right

Right



Right

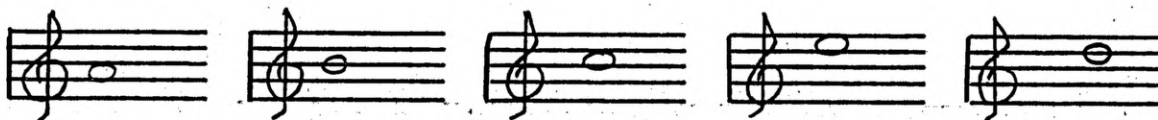
Right

Summary

This lesson showed great improvement in all respects.

LESSON SEVEN

Lesson seven opened with tone matching of the following tones which were sung correctly the first trial.



"Old MacDonald Had a Farm" was sung with the syllable OO and was all right.

"Home on the Range" was sung on the syllable OO. The tone floated well on most of the song but some pitch problems were present.

"Polly Wolly Doodle" was sung on the syllable OO and was also correct.

"I've Been Working On the Railroad" was sung with the syllable OO quite well. There was some sagging of tones due to lack of breath.

Summary

There was difficulty singing some of the pitches.

LESSON EIGHT

"Old MacDonald Had a Farm" was sung on the syllable OO and it was very fine.

Following is a comparison of the first and second testing on the

"Measures of Musical Talent".

TABLE 2. RESULTS IN MUSIC TESTING FOR SUBJECT 1

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	18	22
Sense of Consonance	30	38
Tonal Memory	16	32

CASE TWO

The subject, age 9, I.Q. 97, was an average-sized boy. His father was employed by the National Guard. He had two brothers.

His speaking voice carried little inflexion and he had taken some corrective work on his speech. He repeated the fourth grade in 1958-1959. He had taken some special training in voice the previous year and at that time he had sung everything in a very low range.

At the time he was checked for this investigation, he had a range of twelve tones. He could match the top and bottom notes of a triad as well as most other notes. He could sing half steps.

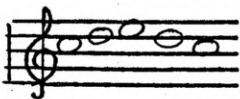
His father played a guitar and his older brother played a ukulele. He attended the Lutheran Church where he participated in the group singing.

He said that he didn't like music but liked the song flutes. He liked songs about dogs because dogs were his hobby.

LESSON ONE

Lesson one started with some work on tonal memory. Simple tunes were played on the piano and the subject repeated them from memory.

TUNE TO BE SUNG



1st. TRIAL

Right

2nd. TRIAL

Right

3rd. TRIAL

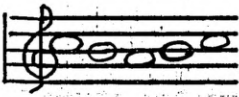
Right

TUNE TO BE SUNG

1st. TRIAL

2nd. TRIAL

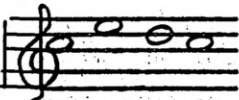
3rd. TRIAL



Right

Wrong

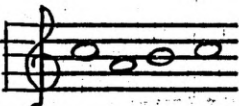
Right



Right

Right

Right



Wrong

Wrong

Wrong

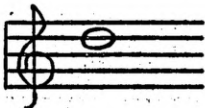
The second part of the lesson dealt with the higher notes. Below are the tones he tried to match.

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

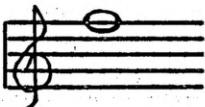
3rd. TRIAL



Right

Right

Right



Right

Right

Wrong



Wrong

Right

Right

Throughout the lesson the voice techniques that had been stressed the previous year were stressed again. He held his chest high and made his tone seem to come up the back to the head.

Summary

The only times he failed to sing the right tones were when he failed to concentrate.

LESSON TWO

Lesson two opened with the subject singing "America" in accompaniment with the piano. He did this very well. Next, the same song was tried without the piano. On the first attempt he failed; on the second he succeeded.

He wanted to sing "Here, Rattler, Here" and he sang it very well. "My Home's in Montana" was sung well.

The second part of the lesson was a review of all the vocal techniques that had been mentioned to him. Some time was spent in telling him how much better it would be if he would sing with the other boys and girls in his room instead of singing so much lower. This seemed to make an impression on him.

Summary

There was an unusually good response at this lesson. He needed more emphasis on the position of the lips.

LESSON THREE

The whole lesson was used trying to get a better lip position. He had trouble raising the upper lip and the lower lip was equally unresponsive. Some of the speech difficulty might have been due to the position of his lips.

He couldn't whistle with his lips puckered. He could whistle with his lips drawn, but there was no difference in pitch.

Summary

There seemed to be little hope of getting a nice full tone unless the lips could be made rounder and held off the teeth. It was suggested that he try to learn to whistle with the lips puckered.

LESSON FOUR

The subject could whistle with his lips puckered when he came to this lesson. He sang "Jolly Old Saint Nicholas" and "Silent Night" with his lips puckered very nicely. "Jingle Bells" was sung very nicely.

Toward the end of the lesson, "Silent Night" was sung without the piano very satisfactorily.

Summary

There was no real problem after he learned how to use his lips. It helped his singing a great deal.

LESSON FIVE

This lesson consisted of singing several songs using the information that had been given him. On all songs the performance was satisfactory.

Following are the results of the first and second testings of the "Measures of Musical Talent".

TABLE 3. RESULTS IN MUSIC TESTING FOR SUBJECT 2

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	15	51
Sense of Consonance	0	62
Tonal Memory	0	8

The lessons were discontinued at this point because the objectives of the course were realized.

CASE THREE

The subject, age 9, I.Q. 100, was a boy of average size with nice appearance and manner. His father was employed by the Northern Pacific Railway.

He had a wide singing range of fifteen tones. He was able to sing all the notes as well as most intervals. His voice was quite clear but seemed very small with no use of breath for support.

His brother played a steel guitar and he was going to play one. He attended the Baptist Church where he participated in group singing.

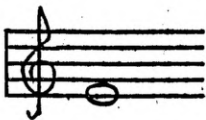
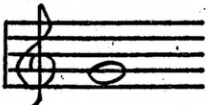
He liked music, liked to sing, play the song flute, and class piano of the third grade.

He had been referred to the investigator because of an apparent vagueness in his sense of pitch.

LESSON ONE

In lesson one he was checked for tone matching and for the ability to sing songs.

TONE TO BE MATCHED



1st. TRIAL

Right

2nd. TRIAL

Right

TONE TO BE MATCHED

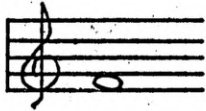
1st. TRIAL

2nd. TRIAL

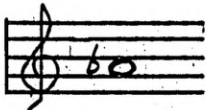


Sang A

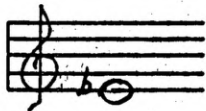
Right



Right



Right



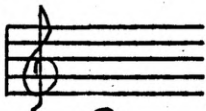
Sang F

Right

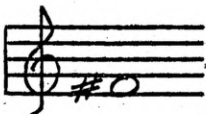


Sang G#

Right



Right



Right

On the preceding tone matchings, the tones were played twice on the piano while he listened. Then they were played twice and he sang the tone to himself. Finally they were struck once for singing.

He sang "America" in the keys of F, G, and C with no particular trouble. He also sang "Home on the Range" with no trouble. It seemed that if there was a good strong melody, he sang quite well. He had

trouble hearing random pitches.

Summary

There did not seem to be anything seriously wrong.

LESSON TWO

Lesson two consisted of tone matching, some singing, and some information on voice production.

The following tones were matched correctly the first time with the exception of the third from the last. It was matched on the second trial.



On the preceding tone matching, the tone was played once for listening, once for singing to himself, and once for singing aloud.

"America" was sung in the keys of F and G with satisfactory results.

Some time was spent in discussing the production of the singing voice. He had no particular trouble singing correctly. His pitch on songs was much more sure when he supported his voice with breath.

Summary

Listening carefully and watching posture and position of the head seemed to solve most of his difficulties.

LESSON THREE

Lesson three was devoted to singing.

"America" was sung in the key of F on the syllable Ō and ah. There was no trouble. He remembered very well how to use his voice. "Home on the Range" was sung in the keys of C and G with words. There was no difficulty except on vowels E and A.

LESSON FOUR

Lesson four was devoted to singing.

"Home on the Range", key of F, was sung with words very well. "Polly Wolly Doodle" and "The Little Red Caboose" were sung satisfactorily.

Summary

There were no pitch problems in this lesson. The use of breath in support of the voice seemed to be the corrective procedure. No more lessons were to be given because the objectives of the course had been achieved.

The results of the two testings of the "Measures of Musical Talent" were as follows.

TABLE 4. RESULTS IN MUSIC TESTING FOR SUBJECT 3

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	15	51
Sense of Sense of Consonance	24	0
Tonal Memory	20	37

CASE FOUR

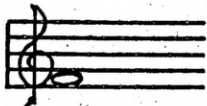
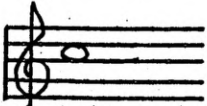
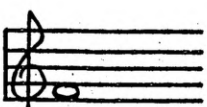
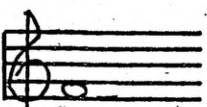
The subject, age 11, I.Q. 74, was a large girl who had been retained in the fourth grade. Her father was employed in a local lumber mill. She had one sister, age 8.

She had a tendency to run her words together and quite often she never finished a sentence. Her attention span was very short and the investigator found it difficult to keep her mind on the lesson.

She had a range of two tones when first tested. As far as could be discerned, she had no musical outlets in the home or community. She said that she liked music and that she thought she sang quite well.

LESSON ONE

The lesson opened with tone matching.

tone to be matched	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Wrong	Wrong	Wrong
	Wrong	Wrong	Wrong
	Wrong	Right	Wrong
	Right		

TONE TO BE MATCHED

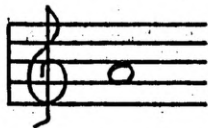
1st. TRIAL

2nd. TRIAL

3rd. TRIAL



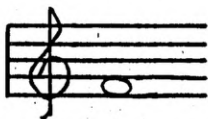
Right



Wrong

Wrong

Wrong



Wrong

Wrong

Wrong

Summary

There seemed to be no concept of where the tone was.

LESSON TWO

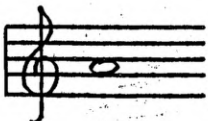
Lesson two consisted of tone matching. The relative highness and lowness of tones was related to her body. If the tone was in the upper register, the hand was placed upon her upper chest. If the tone was in the middle register, the hand was placed on her middle chest. If the tone was in the lower register, the hand was placed on her lower chest. She was told to keep her stomach drawn in and her chest high.

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

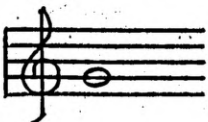
3rd. TRIAL



Sang E

Sang F

Sang Ab



Sang F#

Right

Right

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

3rd. TRIAL



Sang G#

Sang G

Right

Sang F#

Sang D

Sang G#

Sang G

Sang D#

Sang G

Sang D

Sang D#

Sang G

Right

Right

Right

Sang F

Sang F

Sang A

Sang Ab

Sang F#

Sang A

Sang F

Sang F#

Right

Sang Db

Sang G

Right

Right

Sang G

Sang D

Sang C

Sang F

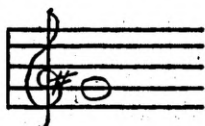
Sang E

TONES TO BE MATCHED

1st. TRIAL

2nd. TRIAL

3rd. TRIAL



Sang C

Right

Right



Sang C

Sang G

Right

Summary

The greater number of correct responses on the third trials indicated that she could hear different tones.

LESSON THREE

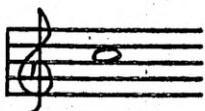
This lesson consisted of tone matching. The high and low tones of the piano were shown to her. Then the relationship between the highs and lows on her body and the highs and lows on the piano was demonstrated to her.

TO BE MATCHED

1st. TRIAL

2nd. Trial

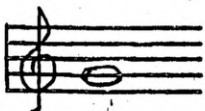
3rd. TRIAL



Sang G

Right

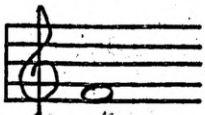
Sang G



Right

Right

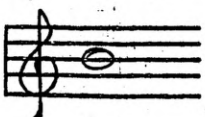
Right



Right

Right

Sang G



Sang A

Sang F#

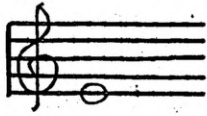
Sang A

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

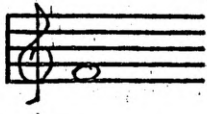
3rd. TRIAL



Right

Right

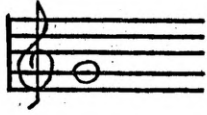
Right



Right

Right

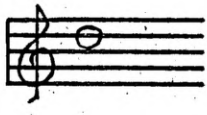
Sang D



Right

Right

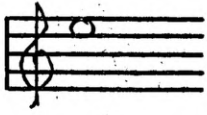
Right



Sang E

Sang A

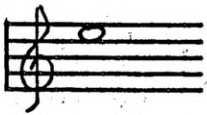
Sang Eb



Right

Right

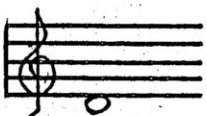
Sang D



Sang G

Sang B

Right



Sang C

Right

Sang E

Summary

Most of the notes missed were very close to being correct. The tone G seemed to be always right.

LESSON FOUR

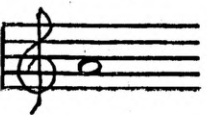
Lesson four dealt with tone matching.

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

3rd. TRIAL



Sang F#

Sang G#

Right

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

3rd. TRIAL



Right

Sang G#

Right

Sang C

Right

Sang G

Sang A

Right

Right

Sang F#

Right

Sang B

Right

Right

Right

Right

Right

Right

Sang E

Right

Sang F

Right

Right

Right

Right

Sang G#

Right

Right

Sang C

Sang F

Right

Sang D

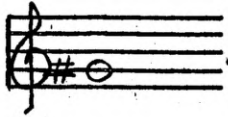
Right

Sang C

Right

Sang E

TONE TO BE MATCHED



1st. TRIAL

Sang F#

2nd. TRIAL

Right

3rd. TRIAL

Sang G

LESSON FIVE

Lesson Five dealt with tone matching and tonal memory. The tone to be matched was played on the piano and then sung from memory.

TONE TO BE MATCHED



1st. TRIAL

Sang D

Sang F#

Right

Sang Ab

Right

Right

Sang F#

Right

2nd. TRIAL

Right

Sang D

Right

Right

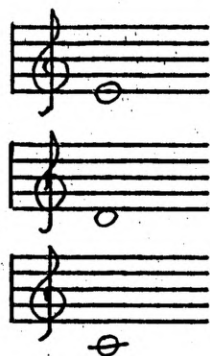
Sang C

Sang A

Right

Right

TONE TO BE MATCHED



1st. TRIAL

Right

Right

Right

2nd. TRIAL

Right

Right

Right

Summary

There was a great deal of improvement evidenced in this lesson.

LESSON SIX

TONE TO BE MATCHED



1st. TRIAL

Sang G

Right

Right

Sang A

Sang D

Sang Eb

2nd. TRIAL

Sang G

Right

Right

Sang A

Right

Sang F#

TONE TO BE MATCHED



1st. TRIAL

Sang F

Right

Sang F

Right

Sang B

Right

Right

Sang F

2nd. TRIAL

Right

Sang F

Sang Eb

Sang F

Sang F

Sang E

Sang F

Sang F

The first line of "America" was sung in the key of F. She touched her body to indicate highness or lowness of pitch, which resulted in more accurate pitch.

LESSON SEVEN

This lesson was devoted to singing.

SONG	KEY	SYLLABLE	COMMENTS
Jingle Bells	F	00	Only one note missed.
Home on the Range	F	00	5th. line F sung for the first time.
Johnny Schomker	C	00	Well done.
Polly Wolly Doodle	F	00	Upper notes missed.
Jingle Bells	F	Words	Very well done.

Summary

Her performance on simple tunes indicated that some songs could have been given to her a little earlier.

LESSON EIGHT

This lesson was devoted to singing.

SONG	KEY	SYLLABLE	COMMENTS
Jingle Bells	F	00	Trouble on high tones.
America	F	00	Well done.
Jingle Bells		Words	All right
America		Words	Some trouble with tones and words at the same time.

Following are the results of the first and second testing on the "Measures of Musical Talent".

TABLE 5. RESULTS IN MUSIC TESTING FOR SUBJECT 4

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	0	15
Sense of Consonance	12	0
Tonal Memory	12	32

Summary

During the last lesson, the classroom teacher of the student was invited to hear her sing. She was a proud girl and greatly surprised her teacher.

CASE FIVE

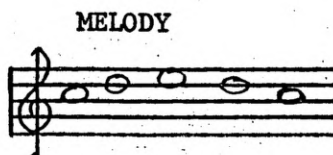
The subject, age 9, I.Q. 101, was small. His father was employed by the Forest Service and was away from home a great deal. His mother owned a lunch counter. He had five older brothers and sisters, none of whom resided at home.

His speaking voice was guttural with an unpleasant quality. He had a singing range of ten tones. He was able to match all tones within his singing range with difficulty. He could sing intervals quite well and he was able to hear and match all tones of a triad. His voice was placed well down in his throat, and on the upper tones he tightened up considerably.

His musical outlets were limited to accordion lessons and to singing in Sunday School. He wasn't sure whether he liked music or not. However, he liked the accordion, song flute, and class piano of the third grade.

LESSON ONE

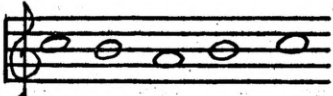
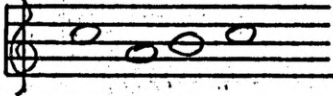
Part one of the lesson dealt with melody retention. The following melodies were played on the piano, and he was asked to sing them from memory.



1st. TRIAL
Right

2nd. TRIAL
Wrong

3rd. TRIAL
Right

MELODY	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Wrong	Wrong	Right
	Wrong	Wrong	Wrong
	Wrong	Wrong	Wrong

Part two of the lesson consisted of matching correctly the following tones.



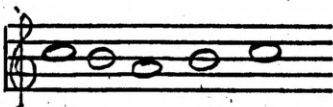
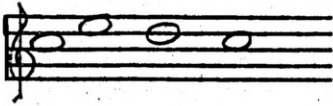
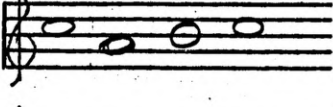
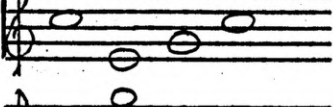
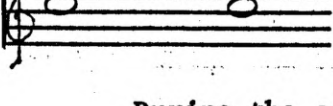
The first line of "America" was sung in the key of F on the syllable OO with good pitch.

Summary

Pitches did not seem to be a problem. Incorrect singing procedures seemed to cause his difficulty in singing.

LESSON TWO

Lesson two was a continuation of melody retention.

MELODY	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Right	Right	Right
	Right	Right	Right
	Right	Wrong	Right
	Right	Right	Right
	Right	Right	Right

During the second part of the lesson he was urged to talk high. He was able to talk four tones higher than he had sung.

Summary

His problem seemed to be primarily one of voice usage and melody retention.

LESSON THREE

Lesson three dealt with the problems of voice usage and tonal memory.

The first line of "America" was sung with the stomach muscles well tightened and the lips well out. He sang very well on the syllable OO with no pitch problems.

The syllable OO was changed to $\bar{O}$ on the same song with the lips

in the OO position. He had some difficulty keeping his lips in position. Pitch seemed to be all right.

Next, the song was sung using words, but the mouth was kept in the OO position. He did this very well.

On the second part of the lesson, different arpeggios were tried but with little success.

Summary

Voice usage still needed improvement.

LESSON FOUR

This lesson dealt with the correct use of the voice. On all the following songs, correct body posture was stressed..

SONG	COMMENTS
America	Sung three times quite accurately.
Silent Night	Some pitch problems.
Deck the Halls	There was a tendency to drop the pitch as the song progressed.
Hark the Herald Angels Sing	The tone was out of the throat and in the head.

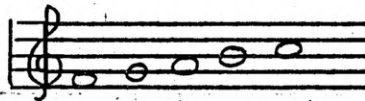
An attempt was made to relax the throat. An old idea of yawning and then singing from the yawn was used. This was quite difficult for him. Breathing exercises were then done.

LESSON FIVE

In lesson five, the training of the voice continued. Some time was spent in having him speak with a high voice. The words to "Silent Night" were read with a fair amount of inflexion. The work on yawning and breathing was repeated, and it was found that he had trouble keeping his tongue flat. It was held so high that it was blocking the sound. Practice with a mirror before him seemed to help him keep his tongue flat.

LESSON SIX

This lesson was a continuation of voice technique. It was suggested that the tone must start at the belt and move up over the back of the head. He sang the following notes on the syllable $\bar{O}$ in this manner and did very well.



Next, he sang "America" in the keys of A and Bb on the syllable $\bar{O}$ with good results. The song was tried in the key of G with words. This ended in failure.

Some time was spent on changing the $\bar{O}$ syllable to "ah". He had no trouble with this so long as his stomach muscles were kept taut.

LESSON SEVEN

Lesson seven was a singing lesson.

SONG	SYLLABLE	COMMENTS
Old MacDonald Had A Farm	OO	Very nicely done.
Home on the Range	Words	All right if the stomach was tight and chin down.
Jingle Bells	Words	All right.
Polly Wolly Doodle	Words	Well done.
Working on the Railroad	Words	Almost correctly in tune.

LESSON EIGHT

All the information relating to voice production was reviewed.

"America" was sung very well with the words.

The results of the first and second testing on the "Measures of Musical Talent" are as follows.

TABLE 6. RESULTS IN MUSIC TESTING FOR SUBJECT 5

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	9	5
Sense of Consonance	38	46
Tonal Memory	0	12

CASE SIX

The subject, age 9, I.Q. 107, was a very shy boy of slight build. He had a very nice attitude toward the lessons and worked very hard.

He had a range of eight tones when he was interviewed. He was not able to match any tones of a triad, to sing any intervals or half steps. He was very unsure of his voice, which was not much more than a whisper.

He lived on a ranch and rode the bus to school. His mother played a parlor organ in the home occasionally. There was a saxophone and a guitar in the home, but no one played them. There seemed to be no other musical outlets. He had much older brothers and sisters.

He liked music, but he knew he couldn't sing.

LESSON ONE

Lesson consisted of tone matching and tonal memory.

TONE TO BE MATCHED



1st. TRIAL

Right

Wrong

Wrong

2nd. TRIAL

Right

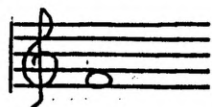
Right

Right

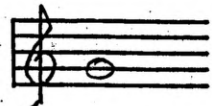
TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

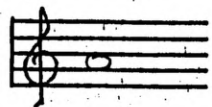


Right

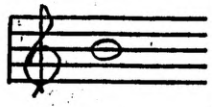


Wrong

Right

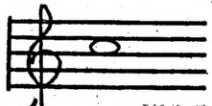


Right



Wrong

Wrong



Wrong

Wrong

"America" was sung in the key of F, but the result was not satisfactory.

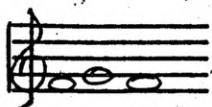
Simple Tunes were played on the piano, and he sang them from memory with the following results.

TUNE

1st. TRIAL

2nd. TRIAL

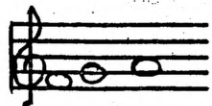
3rd. TRIAL



Right

Wrong

Right



Wrong

Wrong

Wrong

Summary

The subject tried very hard but didn't seem to be able to hear the difference in tones.

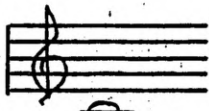
LESSON TWO

Lesson two consisted entirely of tone matching. The game of airplanes and airports was used for motivation.

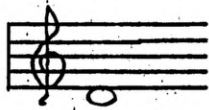
TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL



Right



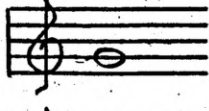
Right



Right

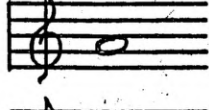


Right

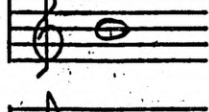


Wrong

Right

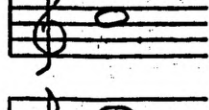


Right



Wrong

Right

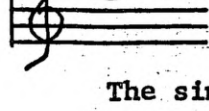


Wrong

Right



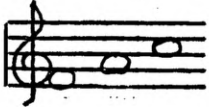
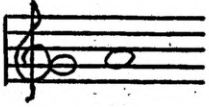
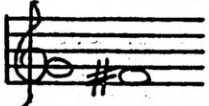
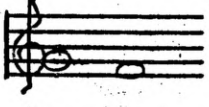
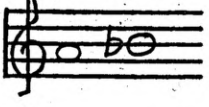
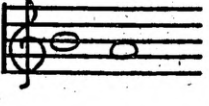
Right



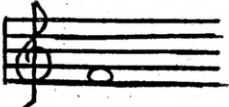
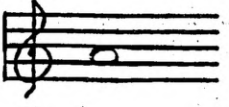
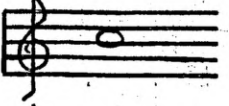
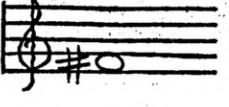
Right

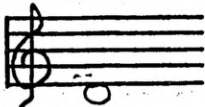
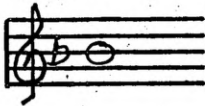
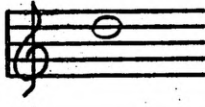
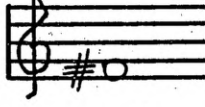
The simple tunes were played on the piano and he sang them from

memory with the following results:

MELODY	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Wrong	Wrong	Wrong
	Right		
	Wrong	Wrong	Wrong
	Wrong	Wrong	Wrong
	Right		
	Wrong	Wrong	Wrong

Random tone matching was tested. The note was given twice on the piano and he repeated it with the following results.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Right		
	Right		
	Right		
	Wrong	Wrong	Wrong

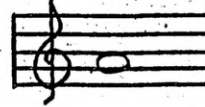
TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Right		
	Right		
	Wrong	Right	
	Right		

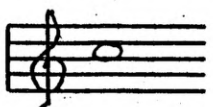
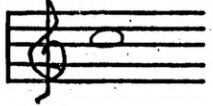
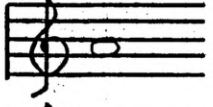
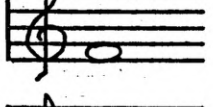
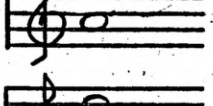
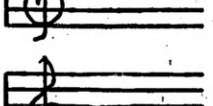
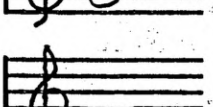
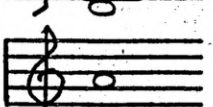
Summary

There was improvement in tone matching. Melody retention was very low.

LESSON THREE

Lesson three consisted of random tone matching. In the following exercise, the tone was played on the piano twice for listening, twice while he sang to himself, and twice before he sang aloud.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang F#	Right	Sang E
	Sang A#	Sang A#	Right
	Right	Sang Ab	Sang A#

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang Cb	Sang E	Sang B
	Right	Right	Right
	Sang A#	Sang Ab	Sang A#
	Sang E#	Sang A	Right
	Right	Sang A#	Sang Ab
	Sang C#	Right	Sang Cb
	Right	Right	Sang Gb
	Right	Sang Eb	Right
	Sang Ab	Right	Right

LESSON FOUR

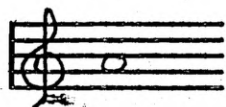
Lesson four was a continuation of tone matching. On the following tones, the pitch was given a total of six times on trial one, six times on trial two, and four times on trial three.

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

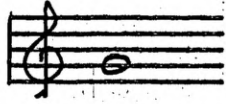
3rd. TRIAL



Sang B

Right

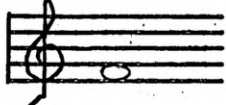
Sang Bb



Sang Gb

Sang Ab

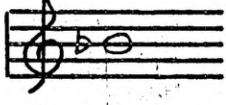
Right



Sang G

Sang F#

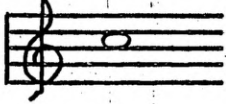
Right



Right

Right

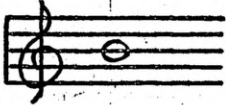
Right



Sang Bb

Right

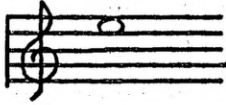
Sang Bb



Right

Right

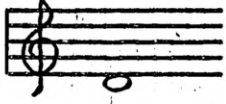
Right



Right

Right

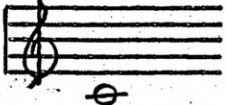
Right



Right

Right

Right



Sang D

Sang D

Right

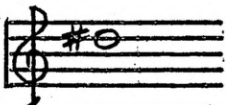
On the following tones, the pitch was given three times on the first trial, twice on the second trial and once on the third trial before the tone was sung.

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

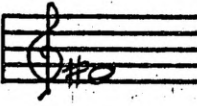
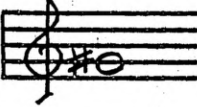
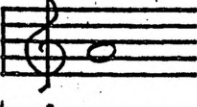
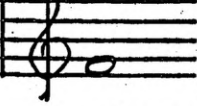
3rd. TRIAL



Sang G

Sang D

Sang D

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang E	Right	Right
	Sang G	Sang G	Right
	Right	Right	Right
	Right	Right	Right
	Right	Sang F#	Sang F#

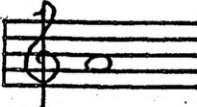
The second part of the lesson consisted of singing the first phrase of "America". The melody was played on the piano and then he repeated it. He sang it correctly two out of ten attempts. Generally, he was very badly off pitch.

Summary

There was a definite improvement in tone matching.

LESSON FIVE

On the following test each pitch was played twice before the subject sang it.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang F#	Right	Right

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

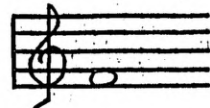
3rd. TRIAL



Sang F#

Right

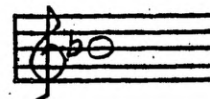
Right



Sang F#

Right

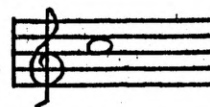
Right



Sang B

Right

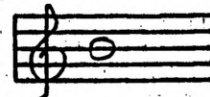
Right



Sang C

Right

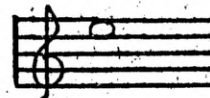
Right



Right

Right

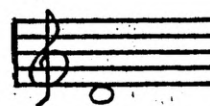
Right



Sang D

Sang Eb

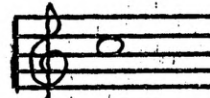
Right



Right

Right

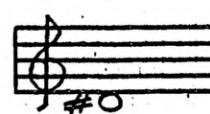
Right



Sang D

Sang C#

Sang D



Right

Sang F

Right

"America" was used for tonal memory practice.

TRIAL	PART OF SONG USED	SYLLABLE USED	COMMENTS
1.	First phrase	Humming	Fair
2.	First phrase	00	Right
3.	First phrase	0	Right except for last note

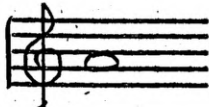
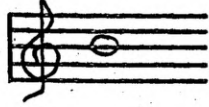
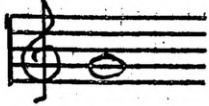
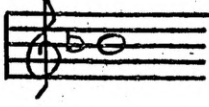
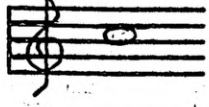
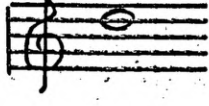
TRIAL	PART OF SONG USED	SYLLABLE USED	COMMENTS
4.	First line	00	Right
5.	First line	00	Right
b.	Whole song	Humming	Right

Summary

There seemed to be some improvement in matching and there was definite improvement in tonal memory.

LESSON SIX

Lesson six consisted of tone matching and singing of the C scale. On the following test, the pitch was given only once before the subject sang the tone.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Right	Sang G	Right
	Right	Right	Right
	Right	Right	Right
	Right	Sang A	Right
	Right	Sang B	Right
	Right	Sang A	Sang A

TONE TO BE MATCHED



1st. TRIAL

Sang F#

Right

Right

Right

2nd. TRIAL

Right

Right

Right

Right

3rd. TRIAL

Right

Right

Right

Right

The C scale was sung on the syllable OO, but the subject had to listen very closely to succeed.

Summary

There was much improvement in matching. He seemed to have to listen very closely to be able to sing correctly.

LESSON SEVEN

Lesson seven consisted of tone matching and song singing.

TONE TO BE MATCHED



1st. TRIAL

Right

Right

Right

2nd. TRIAL

Sang G#

Right

Right

3rd. TRIAL

Right

Right

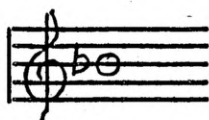
Right

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

3rd. TRIAL



Sang C

Right

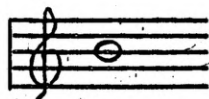
Right



Right

Right

Right



Sang Bb

Right

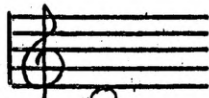
Right



Right

Right

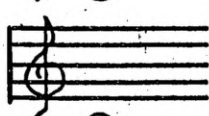
Right



Right

Right

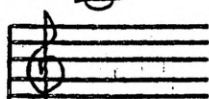
Right



Right

Right

Right



Right

Right

Right

SONG SUNG

SYLLABLE

COMMENTS

America

ah

About one-half correct

America

ah

Almost right

Home on the Range

ah

About three-fourths correct

Polly Wolly Doodle

ah

About one-fourth correct

LESSON EIGHT

Lesson eight consisted of singing without piano accompaniment.

SONG SONG	KEY	SYLLABLE	COMMENTS
America	F	00	Sung quite poorly
America	F	00	Only three notes missed
America	F	00	Fifteen notes were missed
Home on the Range	F	00	Satisfactory

Below are the results of the first and second testing on the "Measures of Musical Ability"

TABLE 7. RESULTS IN MUSIC TESTING FOR SUBJECT 6

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	11	19
Sense of Consonance	0	70
Tonal Memory	4	0

Summary

In eight lessons there was some progress but not as much as had been anticipated. However, some time after the lessons had ended, the subject was observed singing with other students in the classroom, and the difficulty seemed to be resolved.

CASE SEVEN

The subject, age 9, I.Q. 87, was a rather large, well-developed boy. He seemed eager to be started but his interest lagged considerably as he progressed with the lessons.

His father was employed in a local lumber mill. His mother was a housewife. He had two sisters and four brothers. There was a piano in the home which was played by the mother and one of the sisters. Neither played it seriously however. There was no other outlet for music.

When the subject was tested, he had a range of seven tones. He could not sing half-steps. His voice was quite large but uncontrolled. There was no evidence of breath support or voice placement. His voice had an unpleasant sound.

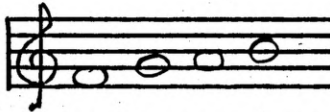
He said that he didn't like music and that he didn't like to sing. At first he said that he liked the song flutes and then changed his statement. He liked the class piano of the third grade. He liked rhythm band of the primary grades.

LESSON ONE

The subject tried to sing the C scale and was unable to do it correctly. He was shown some techniques of singing--tightening the stomach, raising the chest, pulling the chin down, and rounding the lips.

A part of the C scale was sung on the syllable $\bar{O}$. This was done

very poorly. The same thing was tried on the syllable OO. He was able to sing the following notes.



On the third trial he was able to extend the range two tones. He tried to sing "America" on the syllable OO in the key of F. He made no attempt to listen to what he was singing, and the result was very unsatisfactory.

Summary

The problem seemed to be one of concentration and use of his body in producing tones. It was suggested that he do some push-ups to strengthen his stomach muscles.

LESSON TWO

Lesson two was spent in tone matching. Each tone was played three times on the piano before it was sung.

TONE TO BE MATCHED



1st. TRIAL

Sang Eb

Sang G

Sang A

Sang Db

2nd. TRIAL

Sang D

Sang G#

Sang D

Sang A

3rd. TRIAL

Sang E

Sang A

Right

Right

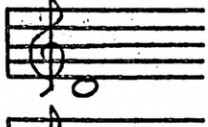
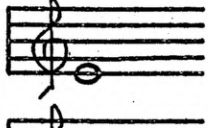
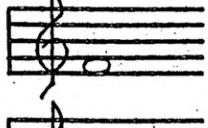
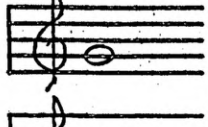
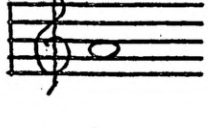
Summary

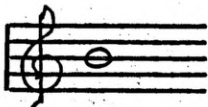
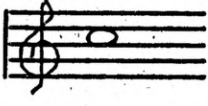
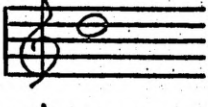
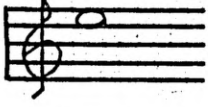
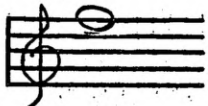
The two tones that were sung correctly were those on which there was a maximum of concentration. On most other tones there was poor concentration.

LESSON THREE

Lesson three started with singing "America" on the syllable OO in the key of F. The song was sung three times but the tune was badly distorted each time.

The second part of the lesson consisted of tone matching. The medium of airplanes and airports was used for motivation.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang C#	Right	
	Right		
	Right		
	Sang F#	Right	
	Sang E	Sang D	Right
	Right		

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Right		
	Right		
	Sang C	Right	
	Right		
	Sang D	Sang D	Sang D

The tone, or tower signal, was played until the subject thought he had heard it correctly. Then he tried to sing what he had heard.

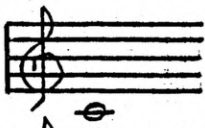
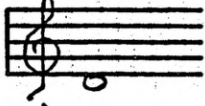
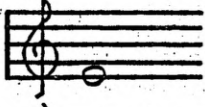
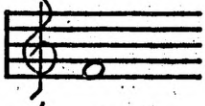
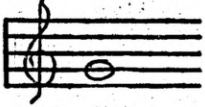
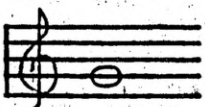
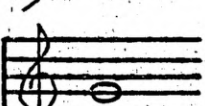
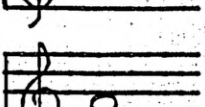
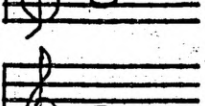
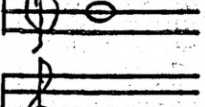
Summary

This lesson seemed to indicate that proper motivation was quite necessary. It also indicated that the real sense of pitch was not too bad, but that the body posture and concentration were of utmost importance.

LESSON FOUR

The subject had not done push-ups or other exercises to build up his stomach muscles. Some breathing exercises were done in this lesson. He was told to take a breath on one count and then hold it for a count of ten as he walked around the room.

The second part of the lesson consisted of random tone matching.

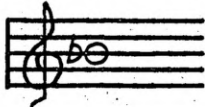
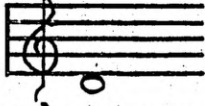
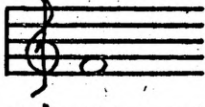
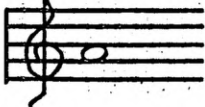
TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Wrong	Wrong	Right
	Right		
	Wrong	Wrong	Right
	Wrong	Wrong	Right
	Wrong	Wrong	Right
	Right		
	Right		
	Wrong	Wrong	Wrong
	Right		
	Wrong	Wrong	Right

Summary

Concentration and listening were important factors in the successes and failures in this lesson.

LESSON FIVE

Lesson five opened with tone matching. Each note was played four times before it was sung. The subject was urged to concentrate.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang C	Right	Sang C
	Sang Bb	Sang C	Sang B
	Right	Right	Right
	Right	Right	Right

"America" was sung on the syllable OO in the key of F. The subject was able to sing this with a lot of help. He mentioned that it didn't seem that the notes ought to be as high as was wanted.

LESSON SIX

"America" was sung in the key of F on the syllable OO and was quite satisfactory.

Tone matching was done on the syllable OO. He was told to try to think the tones higher in the head. On the following exercises, the note was played three times on the piano, and then the note was sung.

TONE TO BE MATCHED

1st. TRIAL

2nd. TRIAL

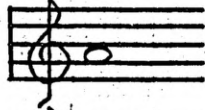
3rd. TRIAL



Wrong

Wrong

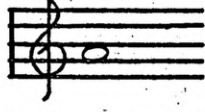
Right



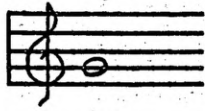
Wrong

Wrong

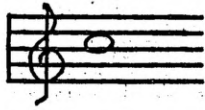
Wrong



Right



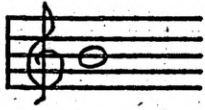
Right



Right

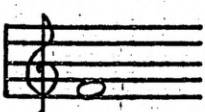


Right



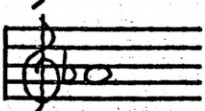
Wrong

Right



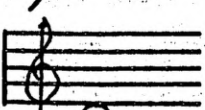
Wrong

Right

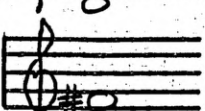


Wrong

Right



Right



Wrong

Wrong

Wrong

Summary

The lesson showed quite an improvement in tone matching. The

tones missed were due primarily to the improper use of the voice. Concentration was still a problem.

LESSON SEVEN

Lesson seven consisted of singing.

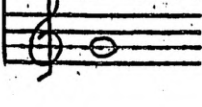
SONG TO BE SUNG	KEY	SYLLABLE	COMMENTS
America	F	OO	The tone floated quite well with some conception of pitch.
America	F	OO	About 60% correct.
America	G	OO	The pitch dropped very low.

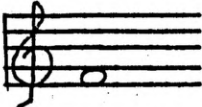
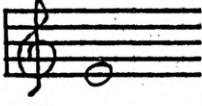
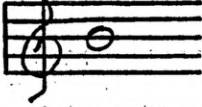
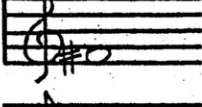
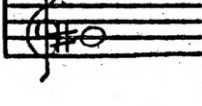
Summary

The stomach muscles relaxed on the last song. Listening was still a problem. His lip position was good.

LESSON EIGHT

"America" was sung in the key of F on the syllable OO without improvement over the last lesson. The rest of the lesson was spent on tone matching.

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang E	Sang B	Right
	Sang F	Right	Right
	Right	Sang A	Right

TONE TO BE MATCHED	1st. TRIAL	2nd. TRIAL	3rd. TRIAL
	Sang G	Right	Sang G
	Sang G	Right	Right
	Right	Right	Right
	Right	Right	Sang G
	Right	Right	Right

Summary

Motivation that produced concentration of vocal procedures and listening was not prominently evident. However, there was improvement in tone matching.

The results of the first and second testing of the "Measures of Musical Talent" were as follows.

TABLE 8. RESULTS IN MUSICS TESTING FOR SUBJECT 7

Section of the Test Used	Percentile Rank	
	First Testing	Second Testing
Sense of Pitch	9	5
Sense of Consonance	38	46
Tonal Memory	0	12