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presented by

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THE EFFECT OF MUSIC THERAPY SESSIONS ON THE DEVELOPMENT OF SPECIFIC LANGUAGE SKILLS IN LANGUAGE DELAYED PRESCHOOL CHILDREN

By

Margo C. Wells

A THESIS

Submitted to

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ABSTRACT

THE EFFECT OF MUSIC THERAPY SESSIONS ON THE DEVELOPMENT OF SPECIFIC LANGUAGE SKILLS IN LANGUAGE DELAYED PRESCHOOL CHILDREN

By

Margo C. Wells

The purpose of this study was to investigate the use of music in the form of singing songs to aid the development of specific language skills in language impaired preschool children.

The subjects for this investigation were three preschool age, language delayed males from a preschool program developed for language delayed children. These children attended four instructional sessions implementing the music/language technique developed by the researcher.

The researcher concluded that the instructional method as implemented had no effect on the development of the targeted language skills for these children. Also, there was no significant measure of improvement in language skills as measured by a pretest and posttest. This thesis is dedicated in honor of my Lord, Jesus Christ. Without the strength and encouragement of God, this would not have been completed. To God be glory forever, in Jesus' name, Amen.

The researcher would also like to dedicate this thesis to her mother for her love, encouragement, support and guidance. Thank you, Mom, for the special way you continued to say, "You can do it, I believe in you."

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iii

TABLE OF CONTENTS

List	of Tables	vi
List	of Figures	vii
Chapt	er	
I.	The Problem	1
	Introduction Purpose of the Study Research Hypothesis Individual Research Hypotheses	1 5 5 6
	Limitations	7 7
II.	Review of Related Literature	10
	Language Development in Normal and Language Impaired Children Stages of development Phonological development in normal	10 10
	Children Motivations for learning language Language development and the language	14 15
	<pre>impaired child Theories behind language impairment Prognosis Metalinguistic Awareness and the Area of</pre>	16 17 17
	Phonology Definitions Metalinguistic awareness in normal	20 20
	children Metalinguistic abilities in the language	20
	impaired Intervention Strategies Music therapy with the language delayed for communication development	22 25 28
	Music therapy as language therapy with the mentally impaired	29
TTT		30
•	Gample	22
	Selecting the subjects Subject profiles	32 33 33
	Materials and equipment	37

•

	Procedure	38		
	Inspiration for this study	38		
	Trial sessions Revisions and subjects for the actual	39		
	sessions	50		
	Practice session	51		
	Pretest and music instructional			
	session no. 1 procedures	52		
	Music instructional sessions no. 2			
	and no. 3	53		
	Music instructional session no. 4 and			
	posttest procedures	54		
	Observers and Scoring	55		
IV.	Case Studies	57		
	Subject J.	57		
	Subject C	62		
	Subject S	67		
		•••		
v.	Results	74		
	Review of Hypotheses and Interpretations	74		
177	Summary and Conclusions	02		
VI.	Summary and conclusions	63		
	Summary	83		
	Discussion	83		
	Recommendations for Further Research	87		
APPEND	ICES			
Α.	Words Used for Preliminary Investigation	90		
	······································			
в.	Word Lists Used for Trial <u>WMASSP</u> Testing	96		
C.	Word Lists Used for WMASSP Pretest and			
0.	Posttest	98		
		20		
D.	Songs Used for Preliminary Investigation	99		
E.	Songs Used for Instructional Sessions	107		
		107		
F.	Scoring Directions and an Example of a			
	Pretest and Posttest Scoring Sheet	113		
G.	Raw Data Scores for Subjects J. C. and S	116		
H.	Glossary	117		
		120		
DIDLIUGRAPHI				

LIST OF TABLES

-

1.	Pretest	and	Posttest	Mean	Scores	for	Subject	J	75
2.	Pretest	and	Posttest	Mean	Scores	for	Subject	c	7 9
2.	Pretest	and	Posttest	Mean	Scores	for	Subject	s	81

LIST OF FIGURES

1.	Differences for Subject	in Scores from Pretest and Posttest J	76
2.	Differences for Subject	in Scores from Pretest and Posttest C	80
3.	Differences for Subject	in Scores from Pretest and Posttest S	82

CHAPTER I

THE PROBLEM

Introduction

Language is an important part of our lives. It is through language that one's culture is transmitted. We order our world and categorize our experiences through language. These experiential categories are arranged with the rules that are learned from those in our environment (Kavanagh, 1985; Hahn, in Jones, 1972).

Language is learned, not innate. Bryen (1982) and Kavanagh (1985) point out that we must learn "language" before learning a <u>specific</u> language. Language development in children involves the transfer of what the child sees and discovers in the environment to the mind where it becomes a part of the child's being, ready for use (Kavanagh, 1985).

Language is a cultural and social tool. Shared meanings of experiences are communicated in a cultural context. Certain signals and ways of communicating are learned from those in our environment. These signals, or cues, are speech, content, gestures, and tones (Kavanagh, 1985). Hahn (in Jones, 1972) agrees with Kavanagh in stating that communication is made up of articulation, body language, and voice.

Language is made up of a variety of articulated sounds. A child must learn all of these complex sounds and sound combinations to communicate effectively through speech. The

child must also learn "tone, change of pitch, loudness, appropriate facial expressions, and gestures" (Hahn, in Jones, 1972, p 35). Molyneaux (in Jones, 1972) agrees that language is a complex system, pointing out that it is a coordination of several neuromuscular events. Speech depends on our ability to retain, formulate, express, receive, and integrate linguistic symbols. It is a complex combination of physiological, psychological, and social factors (Molyneaux, in Jones, 1972).

We have seen that language is very much a part of our social structure. In fact, language is given two special functions: 1) social relationships, and 2) conveying information to another. Further, since we are social beings, our ability or lack of ability to communicate either makes us part of the social structure, or excludes us. Those who have problems communicating often are among those who are excluded from total social interaction. With physical signals understood, shared meanings of experiences in a cultural context can be communicated. If one cannot understand the subtle cues in language, one cannot constantly interpret what others say, much less help others to understand what is communicated (Kavanagh, 1985). Even when two people with different languages try to share something with one another verbally, they realize a common experience. Therefore, one without language is truly isolated from the rest of society (Kavanagh, 1985).

This study focuses on the language development of language impaired children, especially in the area of phonology. It focuses on how music can be used as an intervention for helping these children to develop new language skills.

One might ask the question, "How can music help children to learn language skills?" Music may be useful in this area for reasons found in various research studies in which music has been used as a tool in the learning process. Alley (1979) has found that music has a strong research base to document its effectiveness in facilitating learning processes. Music can be used in the educational setting to help children develop different skills. Alley (1979) gives the definition of music therapy in the schools as follows:

"Music therapy in the schools is the functional use of music to accomplish specific pupil progress in an academic, social, motor, or language area." (p. 118)

Alley (1979) states that music functions best in the special education setting as a supplement to special education and other related services. Music can be used to teach academic objectives in any academic area as befits the child (Alley, 1979).

The following have been documented in research as being effective ways in which music can aid in special education objectives for a child with special needs:

"1) Teaching academic skills, 2) reducing severely inappropriate behavior problems, 3) increasing on-task school behavior, 4) increasing physical responses, such as self-help skills, imitative behavior, 5) activity level, 6) teaching language skills, 7) teaching social skills, and 8) improving perceptual motor skills." (Alley, 1979, p. 118-119)

What makes music a valid way to teach language skills is that music and language are related. Rhythm, for instance, exists in much of daily life: in music, in the heartbeat, in breathing, and in speech sounds, especially in reading. In music, harmony and melody are terms used to describe the arrangement of different pitches. Melody may be described as a sequence of changed or repeated tones. The human voice is the primary producer of melody. Melody is learned naturally in the child within language (McCarthy, 1985, p. 237).

Along with the similarities between speech and melody, the dynamics of speech and music are the same (loudness, softness, gradual or sudden changes in volume). Also, form, which is the framework that organizes and gives meaning to the elements of music, is present in song lyrics, words in poems, and in stories (McCarthy, 1985).

Furthermore, there are similar elements of both music and oral and written communication in children's nursery rhymes, chant materials, and playground games. Action songs, which are a part of the musical traditions of many cultures and make up much of the repertoire of children's songs, are highly repetitive, melodically simple, and help build good listening, speaking, and/or singing skills that form the basis for clear and effective reading ability (McCarthy, 1985; Nadon-Gabrion, 1984). It is for these reasons and those above that McCarthy (1985) suggests that the components of music, such as rhythm, harmony, melody,

dynamics, form, and mood can aid the teacher in promoting language development.

Nadon-Gabrion (1984), like McCarthy (1985), draws several parallels between music and language stating that music and language both require discrimination of aural cues and the translation of those cues into meaningful responses. Aural discrimination is essential for both the development of music literacy and the understanding of written symbols in music and language. A child who cannot discriminate the qualities and characteristics of sound will have extreme difficulty imitating, or interpreting the sounds of both language and music (Nadon-Gabrion, 1984).

Purpose of the Study

The purpose of this study was to investigate the use of songs through singing to help language impaired preschool children to develop specific language skills in the area of phonology.

Research Hypothesis

The subjects for this study were three language impaired preschool children functioning at different levels of language ability. There was a separate research hypothesis for each child. By the conclusion of this study, each child was to be able to produce the sounds, or positioning of the lips for a specific sound, at a percentage level specified for that child as determined by the examiner, aided by a speech pathologist familiar with

the subjects. It should be mentioned that the procedure used was accompanied by on-going language training in the classroom by the children's teachers in an integrated language teaching approach.

Individual Research Hypotheses

Subject J

Given that Subject J presently pronounces words beginning with the /k/ (as in kite) and /g/ (as in gum) sounds with those sounds 50% of the time when requested of him, he will produce the /k/ and /g/ sounds with 80% accuracy in songs using words beginning with these sounds by the conclusion of four music instructional sessions with the examiner. Also, the ability to use these sounds outside of a song shall increase to 60% as measured by a posttest at the conclusion of this study.

Subject C

Given that Subject C can produce the final position /b/ (as in tub) and /g/ (as in dog) sounds correctly 50% of the time at the request of a teacher on words he knows, he shall be able to produce these sounds with 80% accuracy in songs using these final position consonants at the conclusion of the four music instructional sessions with the examiner. Also, the subject will have a 5% carry over to words he has not practiced in the music instructional sessions on a posttest.

Subject S

Given that Subject S presently positions his lips correctly for the initial /w/ (as in water) sound with 20% accuracy when requested of him, after four music instructional sessions with the examiner, he will produce the positioning of the lips for this sound with 80% accuracy in song. Also, there shall be a percentage increase from 20% to 30% in words on a posttest.

Limitations

This study was limited in terms of the population sample. Originally, there were five children selected for this study. During the actual procedure, there were three children involved. All of the children selected for this study were of the Caucasian race, and were from a middle to low socio-economic background. Also, the children were not selected randomly. All were from the same school, and from the same program within the school.

Because of the specific problem that was investigated, the population sample was limited, since the children selected for this study were the only ones in the pool who exhibited the particular language problem of a phonological defect. The children were selected from two classrooms of language impaired children by their teachers.

Overview

A review of literature is discussed in Chapter II of this paper. Language development in normal children is

presented first. Phonological development is also discussed. Next follow language development in the language impaired child, and a look at phonological development in the language impaired child. The next part of Chapter II is devoted to discussing different communication intervention techniques that have been studied with the language impaired child population. The use of music as a language intervention with the language impaired and the mentally impaired is also included.

Chapter III is a discussion of the methodology for this study. The setting, materials, equipment, and procedures for this study are included. Also included is a profile of each of the subjects in terms of background, age, diagnosis, and various cognitive and language comprehension test results.

In Chapter IV, a case study is presented for each subject describing the events of the practice session and the four instructional sessions. In Chapter V, the mean scores for the pretest and posttest are given and discussed. The progress of the subjects throughout this study is also discussed in this chapter. In Chapter VI, a summary of this project is stated along with the conclusions the researcher drew. Also, recommendations for further research in this area are given.

In the appendices, a list of words for the trial sessions, practice session, and instructional sessions (pretest and posttest words) is given. Also, the songs used

for the preliminary sessions and the method sessions are listed. An example of a scoring sheet is included along with the scoring directions. Also included is a glossary of the speech pathology terms used in this paper.

CHAPTER II

REVIEW OF RELATED LITERATURE

Language Development in Normal and Language Impaired Children

Linguistic knowledge has to do with the learning of basic rules that govern the meaning of language (semantics), the linguistic structures that represent the semantic intent (syntax), and the rules governing the medium through which language is communicated - either spoken (phonemic system), written (graphic system), or signed (Gerber and Bryen, 1981, p. 29). Language is defined as a rule-governed-symbol system that is capable of representing what one understands of his or her environment and the world. It is a social generative code (Gerber and Bryen, 1981, p. 27).

Language development begins with the first cry of a baby. Within the first month, the child develops sensitivity to sound. The baby begins to respond to the human voice during this time. As the baby grows older, a smile can be elicited by the hearing of the human voice (Dale, 1976; Oksaar, 1983; Owens, 1984).

Early vocalizations seem to develop through a sequence of four broad stages. The transfer from one stage to the other may be gradual or abrupt. It varies among children (Dale, 1976). The stages of pre-linguistic development are listed in Dale (176) as follows:

Stage I - Crying

The birth cry of a baby is characterized by cries and similar vocalizations. It is usually characterized by a rising and falling frequency - contour, and is part of a respiratory, inspiration-vocalization cycle that is repeated about once a second. Varying cries produced by infants to get the attention of the parents for varying needs can usually be distinguished from each other by the parents.

Stage II - Other Vocalizations and Cooing

An infant begins to make different sounds near the end of the first month. The articulatory organs (tongue, lips) begin to be used in new ways. By the end of the second month, the child begins to make "cooing" sounds. These sounds are similar in sound to the back vowels and often are made with rounded lips. The /u/ sound is very frequent in a child of this age.

Stage III - Babbling

By the middle of the first month, the infant's speech begins to become more speechlike. Sounds resembling consonant sounds begin to emerge. Also, combinations of consonants and vowels begin to be produced. The child also begins to use adult-like speech inflections.

Stage IV - Patterned Speech

This is the final prelinguistic stage. It begins near the end of the first year of life. Words constructed of phonemic elements begin to be used. These sounds are different from the many sounds used in babbling. These are real, specific words (p. 204-25).

Bryen (1982) states that object permanence, or the concept, must be established before the child can use language. Once this concept is established, the child is able to realize that an object may exist, whether in view or absent, changes in action, locations, or attributes of the object. Object permanence as a concept begins to develop at birth, and is completed around 18 to 24 months of age (Bryen, 1982).

The child must not only develop object permanence, but also representation, in which the child understands that a linguistic symbol can stand for, or represent another object, event, or action. Representation develops through a child's interaction with objects, and ends with the experience of symbolic play (Bryen, 1982).

Since language grows out of one's understanding of the world, one must look at prelinguistic abilities to understand how language is acquired. The things needed for language to develop are first formulated in what is called the Sensory-Motor Stages of development, named by Jean Piaget. Not only object permanence and representation must be developed, but imitation as well. Through imitation, a child learns sounds and language uses. From what the child hears, language sounds are retained and shaped, or omitted if not heard or modelled. During this period, the child begins to develop intentional behavior (means to ends) which

is also important for language development. This happens between the ages of eight to twelve months of age. The child begins to use previously acquired schema to achieve desired ends (Bryen, 1982).

During the next stage of development, a child begins to develop new schema and invents new ways to obtain desired objects. This is between 12 to 18 months of age. Children begin to put words together around 18 to 20 months of age in normal language acquisition. This is when language truly begins, because it is a <u>systematic</u> means by which we express or understand many things (Dale, 1976).

In an older child, 18 months or older, language can be analyzed even further. During this time, a child's early understanding of the environment is context-and-action bound. Objects and people initially exist depending upon the perceptual availability and the child's actions upon them (Gerber and Bryen, 1981).

As the child develops cognitively in the areas of object permanence and imitation, the child's knowledge of the world is freed from certain contexts and actions. The child then has the ability to represent objects, actions, and relations in the mind without them being present. This can be seen through the emergence and growth of language, imaginative play, drawing, and dreams (Gerber and Bryen, 1981).

As a child develops and continues to interact with the environment, the child begins to form perceptions of the

world more and more like an adult. Therefore, the child's language to represent perceptions also becomes more adultlike (Gerber and Bryen, 1981).

Phonological Development in Normal Children

Now that the stages of language development in normal children has been discussed in a general manner, a more analytical look at language development will be taken. To begin, the holaphrastic stage of language acquisition lasts about six months between 12 to 18 months of age. During this time, approximately 50 words are acquired, after which the vocabulary expands rapidly, due to the fact that object permanence and representation have developed by that time. The order of acquisition has been outlined in Ingram (1977) as follows:

- The first syllables are consonant-vowel or consonant-vowel-consonant vowel reduplications (i.e., mama, papa).
- The first consonants are labial, most commonly /p/ or maybe /m/.
- 3. These are followed by /t/ and then /k/.
- 4. The first vowel is /a/, followed by /i/ and /u/.
- 5. A homorganic fricative is acquired only if the stop has been acquired. (p. 17)

In Winitz (1969), the order of phonological acquisition is listed as follows in terms of the ages at which these sounds are mastered:

- 1. 0-36 months all vowel sounds.
- 2. Three years /m/, /b/, /p/, /w/, /x/, /h/, /n/.
- 3. Four years $\frac{t}{d}, \frac{d}{k}, \frac{g}{d}$.

- 4. Five years /f/, /v/.
- 5. Six years /s/, /z/, /r/, /1/.
- 6. Six years and beyond /sh/, /ch/, /dz/.

Hahn (in Jones, 1972) discusses communication in terms of articulation, body language, and voice. The structural system of symbols that make up language are composed of several combinations of articulate sounds. The child needs to learn all of these complex sounds and sound combinations of consonants and vowels. The child also needs to learn other aspects of language, such as tone, change of pitch, dynamic level, gestures, and facial expressions. All of these, "the child must store in a memory of successful speech behaviors and recall them as needed." (Hahn, in Jones, 1972, p. 35).

Motivations for Learning Language

Language develops in a particular order in the child, as previously mentioned, from what the child sees and hears in the world. What motivates a child to learn may be the use of language itself for the child who wants to learn to communicate with others. As stated before, if one does not learn the language of those in one's culture, one will face being left out of society in terms of the social setting. The inherently reinforcing quality of effective communication, therefore, needs to become the motivating factor in a child's learning of language. This reinforcing quality needs to be present in training programs (Friel-Patti and Lougeay-Mottinger, 1985).

Language Development and The Language Impaired Child

It has been found that language impaired children develop language in terms of a rule based system, as do normal children, but at a delayed rate of acquisition. A child's language system is defined as delayed even if the same rules in acquiring and using speech sounds are the same as in normal development, yet delayed in time. A child's language system is defined as deviant only if the language system varies in any way from the normal system of language development (Ingram, 1977).

Zirkelbach and Blakesley (1985) give the following characteristics of the language impaired child in their research:

- The language deficient child has problems acquiring new vocabulary. The same words may be used over and over again. Words may be learned in specific contexts, almost as if they were proper names, and not generalized to other appropriate contexts.
- 2. Multiple meanings of words may confuse this child. The child may know common meanings of words, but not less familiar ones. The child may know one meaning of a word and try to use this word even in inappropriate circumstances.
- 3. Word definitions and/or explanations of similarities and differences may be poor.
- 4. The child may have problems thinking of an appropriate word when speaking; the child exhibits "word finding" problems. Difficulty with retrieving words may increase as utterances increase in length. Dysfluency may become so marked that it resembles stuttering.
- 5. The quality of verbal expression in these children may be poor.
- 6. The child does not use verbal information to make inferences or draw appropriate conclusions.

- 7. The child may exhibit errors in oral and/or written language.
- 8. The child may exhibit defective interpretation of, and response to social situations. The child may be unaware of how much information the listener requires, and may "jump into the middle" of a topic, confusing the listener. The child may also have problems tracking a rapid conversation. Because of limited comprehension, the child may have difficulty discussing topics of interest to his/her peers. (p. 605-611)

Children with language-based disorders have been labelled as developmentally aphasic, dysphasic, language impaired, specific language disabled, and language delayed. They show no extreme perceptual, intellectual, or emotional difficulties as do other groups of handicapped children (i.e., the deaf, mentally impaired, or autistic); yet, they acquire language much more slowly than their peers, which causes them to have difficulty in school (Schery, 1985, p. 73). These children have significant deficits in the production and comprehension of language, but have normal nonverbal intelligence levels (Bernstein and Stark, 1985).

Theories Behind Language Impairment

The following have been found to be associated with the level of articulatory skill or verbal ability a child attains, or the delay thereof in normal acquisition of speech:

 Chronological age, 2) mental age, 3) physical maturation, 4) motor skill, 5) auditory memory span,
sound discrimination, 7) organic abnormalities (brain injury, defective hearing), or functional abnormalities associated with speech mechanisms, 8) emotional immaturity or abnormality, 9) extended or serious illness during early stages of verbal development, birth order, 10) membership of a twin pair, 11) faulty speech models, 12) bilingualism, or poor speech standards in the home, 13) undesirable social environment and parental adjustment (Molyneaux, in Jones, 1972, p. 26-27).

Gerber and Bryen (1981) state that subtle cognitive problems are believed to be the cause of learning disabilities, though it is not known what these cognitive problems might be. Recent research supports the theory that learning disabled children, including the language impaired, may have a lower level of cognitive development that may thus affect perceptual abilities. These perceptual abilities would be ones such as visual analysis, searching and retrieval abilities (word finding), and language and communication abilities. One researcher has stated that the cognitive problems believed to exist may not be so much the lack of practical knowledge, but rather a relative difficulty in representing voluntarily that which the child already knows. Representation competence is needed for the adequate and accurate use of any symbol system, of which language is one. The problems of cognitive development not only affect a child's ability to relate to the world, but may also interfere with normal functioning in a social setting (Gerber and Bryen, 1981).

Another viewpoint being investigated in research is the theory that children with language and other learning impairments may have auditory processing deficits. This view has not been accepted as yet due to a lack of proof and conflicting reports in research (Gerber and Bryen, 1981).

Many research reports show that many learning disabled children, especially those with language problems, have had language problems during the preschool years, the problems continuing into the school years (Aram and Nation, 1980).

Prognosis

In a study reviewed by Aram and Nation (1980), 18 language impaired and 18 articulation impaired children were followed up 13 to 20 years after initial contact with them. The follow-up compared the two groups in terms of communication status as adults, academic achievement, and level of formal education. The children designated as language impaired had more communication problems and academic difficulties (especially reading), and differed in the types of post-secondary education attempted than the articulation impaired children. This suggests that, especially with the language impaired children, difficulty in academic areas followed them through life to the point of follow-up. In the study done by Aram and Nation (1980), 40% of the language impaired children in their study were found to be in classes for the emotionally impaired, mentally impaired, hearing impaired, or had been held back for more than one year. Each child in the language impaired group showed a lag in normal achievement in the areas of reading and math. Preschool speech was found not to help these children much, though no suggestions were given for what could help them to develop language skills.

Metalinguistic Awareness and the Area of Phonology Definitions

Since this thesis is concerned with the development of language skills, especially in the area of phonology, the author finds it necessary to touch upon the major area of language development of which phonology is a part. This is called metalinguistics. Metalinguistic awareness is defined in Fujiki, Brinton, and Dunton (1987) as:

... The ability to think about and reflect upon the nature and function of language. It includes being able to identify word boundaries, recognize that two sentences have a synonymous meaning, and interpret figurative forms. Metalinguistic awareness plays an important role in learning how to read. It also plays a part in the acquisition of language skills generally learned in the middle of childhood years, such as sociolinguistic development and the ability to interpret figurative forms. (p. 413)

In addition to the above, metalinguistic awareness includes "the ability to treat language as an object of thought instead of the use of language system to comprehend and produce sentences." (Kamhi, Lee and Nelson, 1985, p. 207). Children begin to be able to make metalinguistic judgements between the ages of four and eight years of age. Metalinguistic awareness also has to do with the awareness of words, syllables and sounds, the latter of which this paper investigated (Kamhi et al., 1985).

Metalinguistic Awareness in Normal Children

Fox and Routh (1975) did a study to observe the development of children's ability to divide sentences into words, words into syllables, and syllables into sounds (phonemic units). It is important that children develop the ability to segment language in this way before being able to comprehend or produce speech. It is also important for a child to have this ability (especially being aware of sounds) before learning how to read. The awareness of sounds usually begins when the child is an infant. This ability becomes more complex as the child grows (Fox and Routh, 1975).

Researchers agree that children beyond the infant stage have difficulty identifying different speech sounds within spoke words. One researcher stated that a child lacking this ability by the age at which reading is taught would probably not reach the primer level in reading. Another researcher has stated that school age children without the ability to segment speech into phonemic units must be taught to do so before successfully learning to do sound-symbol associations in learning how to read (Fox and Routh, 1975).

In Fox and Routh (1975), children ages three to seven years were given a segmenting task in which they were to segment sentences into words, words into syllables, and syllables into sounds. The results showed that children are able to segment sentences, words, and syllables at younger ages than previously thought. The ability to segment sentences into words and words into syllables was related to age, receptive vocabulary, and other dependent variables at a moderate level. Sentence segmentation was found to be related to reading comprehension. Children as young as

three years of age were able to segment completely into units most of the words given them. Fox and Routh (1975) suggest that perhaps methods for training children to analyze speech into phonemes could be done. This would enable the study of the possible transfer effects of such training on reading comprehension.

Metalinguistic Abilities in the Language Impaired

Before discussing the awareness of sounds, syllables and words in the language impaired child, a definition of phonological disorder shall be given:

Phonological disorder refers to a developmental sound disorder characterized by the inaccurate production of attempted adult words which is so severe that intervention is needed. This disorder does not appear to be linked to any organic disorder. It differs from functional articulation disorder in that it indicates a systematic rule-based behavior, not a deficit in the sheer production of individual speech sounds, as in an articulation disorder (Schwartz, Leonard, Folger and Wilcox, 1980, p. 358).

The following were highlighted in Schwartz, et al. (1980) as being some characteristics of a phonological disorder;

1) Reduced syntactic complexity, 2) a relatively large number of syntagmatic as opposed to paradigmatic responses on a word association task, 3) reduced ability to accurately judge possible and impossible English words. (p. 358)

In Schwartz, et al. (1980), the phonologies of normalspeaking children were compared to those of language impaired children at an early stage of development. The chronological age range of the language impaired children was from two years and seven months to three years and seven months. The normal children ranged in age from 19 months to 21 months of age.

The emphasis in this study was mostly on the consonants present in the children's speech. Selection constraints were inferred from an analysis of the consonants (prevocalic, intervocalic and postvocalic) within words and the syllabic structures of the adult form of the words attempted by each child. It has been noted in research that young children are selective in the words they attempt in early phonological acquisition. Thus, production constraints referred to the limitations on the consonants and syllabic structures of the children's productions (Schwartz, et al., 1980).

Schwartz, et al. (1980) found that there were few differences between normal-speaking and language impaired children in the syllabic structures of the words they attempted. Also, intervocalic and postvocalic consonants within attempted words did not differ between normal and language impaired children. There were some differences between the groups in terms of the characteristics of the adult words attempted, but similarities outnumbered the differences.

Few differences were found between the normal children and language impaired children in terms of the syllabic structures and consonants produced, though there were some differences between intervocalic and postvocalic consonants produced.

The findings from this study suggest that the phonological behavior of language impaired children does not differ from that of normal children chronologically younger than they. Schwartz, et al. (1980) therefore suggest that language impaired children should be approached in the same way that normal, younger children are approached in terms of language development progress.

Kamhi, et al. (1985) examined language impaired children's awareness of words, syllables and sounds as well as Schwartz, et al. (1980). Kamhi, et al. (1985) agree with Fox and Routh (1975) that awareness of words, syllables and sounds is a prerequisite to learning how to read. "A child must understand that a spoken word corresponds with one written word. The next step is for a child to be aware that words consist of distinct syllables and sounds (Kamhi, et al., 1985, p. 208).

In Kamhi, et al. (1985), a segmenting task similar to that of Fox and Routh (1975) was done comparing the segmenting abilities of language impaired and normal children. The findings from this study suggest that the metalinguistic deficit of language disordered children not only affects their ability to make grammatical judgements, but also their ability to segment sentences and words into smaller units. Language disordered children may not only have difficulty assessing already acquired language knowledge, but they may also have difficulty acquiring knowledge about the linguistic elements that comprise

sentences and words. Kamhi, et al. (1985) suggest that "clinical objectives for older preschool and early school age children should include not only the traditional comprehension, production, and conversational objectives, but also the development of metalinguistic abilities, especially objectives that target word, syllable, and sound awareness." (p. 212).

Intervention Strategies

Several techniques have been tried with language impaired children to help them develop various language skills. Musselwhite (1986), for example, developed and tested a method of using signing and self-cueing to draw the attention of these children to inflectional markers at the end of words (example, "ing"), the proper use of pronouns, basic language concepts, initiation requests, and other language structures.

McCormick (1986) lists the language facilitation strategies she found to be effective with language impaired children in her study. These are listed as follows:

- Talk with the child about shared perceptions when objects, events and/or relations attract the child's attention.
- 2) Model, imitate, and expand on desired or actual utterances from the child.
- Repeat and clarify your utterances when the child appears to have misunderstood a word, statement, or request.
- 4) Use higher speech frequencies, shift intensity of the voice, speak at a slower rate, and stress important elements in a sentence to call attention to what is being said. (p. 123)
The above approach is an incidental teaching approach. Such an approach attempts to center a child's environment around language skills being learned at any given time. This allows the child ample opportunity to use words for objects, events and relations seen in the environment, and thus a chance to use newly developed communication skills. McCormick (1986) stresses the importance of communicative behaviors being functional, spontaneous, generalized and appropriate in order for communication goals to be met.

Hahn (in Jones, 1972) gives several pointers for focusing on speech sounds when working with the language impaired child. These are:

- 1) The teacher should model specific sounds in short sentences. A phrase should be said at regular speed, after which a word should be extracted and repeated slowly. The consonant sound being focused on should then be isolated from the word, then repeated reunited with the word. The word should be spoken slowly by itself first, and then returned to the phrase.
- 2) Direct teaching should be done on sounds in initial position only. It has been found that children learn sounds in initial position first as infants. This suggests that perhaps it would be best to use this natural process of learning with the language impaired child.
- 3) The moving part of the teacher's speech mechanism when producing sounds can be pointed out to help the child understand how a sound is produced.
- 4) The children in the class can be asked to produce a sound being focused on in a lesson. When correctly produced, the child should be rewarded by the teacher immediately.
- 5) The sound being focused on should be used in several familiar words as the children listen. Later, the teacher could deliberately make mistakes in producing the words and ask the children for help to produce the words correctly.

- 6) Only two or three consonants should be focused on at a time and that these sounds should be used throughout the day on which they are taught.
- 7) The learning of clear production should follow the same procedures used to teach new vocabulary words.
- 8) Rewards should be ones which the <u>children</u> find rewarding.
- 9) Practice on several consonant blends should be avoided until the children have learned those sounds in initial position alone.
- 10) The teacher should make learning as fun as possible.
- 11) The teacher should be as verbal as possible since the teacher shall be the model for the children. (p. 46-47)

Cole and Dale (1986) used another approach to intervention in their study. They explored the effectiveness of both an Interactive Approach and a Programmed Language Presentation Approach with language impaired preschool children. The first focused on getting the children involved in conversational speech that allowed them to use the skills they had acquired and reinforced them. The second was more structured. The teacher initiated each verbal interaction, and the child was to respond to prompts, imitate the teacher's utterances, or produce a particular response to what the teacher had said. Individual goals were focused on for each child. Both approaches were found to be effective.

Curlatta and Horn (1982) reported a study in which an interactive approach was used to facilitate the use of grammatical skills among language impaired children. The idea of the conversational approach was similar to Cole and Dale (1986) in that it allowed the children to practice their individual language skills in a natural way. Conversational content was centered around grammatical target rules and focused on every day happenings (i.e., getting ready for school, going to the store). The children involved showed a production of trained target rules at 90-100% correct at the end of the study.

Music Therapy with the Language Delayed for Communication Development

In a study by Seybold (1971), techniques from a speech therapy program and a devised music therapy procedure were combined and tested with a group of speech delayed children to determine if music can aid in the development of language skills. There was a control group and an experimental group for this study. The control group received only speech therapy. The experimental group received music therapy and speech therapy. The music activities focused on singing songs which had several concepts integrated into them (sequencing of events, references). Nonmusical activities immediately followed each musical activity. The purpose for this was to stimulate the use of spontaneous speech. Action songs, story telling activities, names of body parts, and other basic language concepts were put to songs.

The results of this study showed that the experimental group made more gains in acquiring the targeted skills than the control group; however, the statistics of the findings

were not significant enough to draw specific, concrete conclusions about the use of music therapy as speech therapy with the language impaired. More research is needed in this area.

Music Therapy as Language Therapy with the Mentally Impaired

Because there is not much information on the use of music as therapy in language development with the language impaired, the use of music in terms of language therapy for the mentally impaired shall be touched upon. In a study by Wylie (1983), evidence was found that suggests that mentally impaired children develop express speech patterns in a similar way as normal children. In other words, they are able to imitate vocalized sounds, whether spoken or sung, as do normal children. Wylie (1983) worked with a group of children ranging from trainable to severely and profoundly mentally handicapped children living at a residential home. All were capable of producing verbalized sounds and could hear auditory stimuli well enough to respond. Wylie (1983) sought to discover what kind of timbre elicits the most verbal responses from mentally impaired children. Recorded singing was found to elicit the most verbal responses from the children, stimulated by the words in the recorded songs. This showed, as in other research, that verbal models work best with these children.

Another study by Lathom, Edson, and Toombs (1965) showed that music can be an effective aid in the development of language skills in the mentally impaired. These researchers suggest that the music therapist can set to musical activities skills being taught in speech therapy, and that the speech therapist can help teach the words to the songs taught to the child in music therapy. This way, the two disciplines work together to help reinforce the skills the child may be learning.

The progress of one child was followed through such a program as stated above where the music and speech therapists worked together to help the child develop elementary reading skills. The child was taught action songs incorporating the words he learned in speech therapy. As more words were taught in speech therapy, the child was required to produce more complete sentences in music therapy.

Summary

In summary, several viewpoints have been developed concerning the problems of the language impaired, such as a slight cognitive delay, or problem with auditory discrimination, but no definite answer has yet been found for the cause of language delay in children. There has been an increasing interest in metalinguistics and the problems associated with the language impaired in this area because of the role metalinguistics play in the development of language and reading skills.

Several methods have been tried to aid language impaired children to develop individual language skills in the area of metalinguistics. Music has been used in the

past with normal children, since music is a natural part of the child's life, and develops in a child the same way as language does. Music has been found to be effective when used as speech therapy for language impaired children and mentally impaired children as well, though more research is needed in these areas. This study attempted to expand upon what has been done using music as language therapy for language impaired children. The goal of this paper was to establish concrete evidence of music's effectiveness, or lack thereof in this area.

CHAPTER III

METHODOLOGY

Sample

The subjects of this study were five preschool children from the Clinton County area in the state of Michigan. All of the children had been diagnosed as language impaired, and had no other major impairments. The subject group was initially composed of four boys and one girl. The children ranged in age from four years and two months to six years and zero months. The mean age was 4.96 years of age. Only three of the children were included in the instructional method portion of this study.

Selecting the Subjects

The researcher had been working for four months with the children in two different classrooms from which children for this study were selected. The researcher asked the classroom teachers which of the children specifically had a phonological problem. The children with a phonological problem were pointed out to the researcher. The teachers stated that the school had a policy which allowed the children to be involved in research studies, to be video and audio taped, and to have their records examined. The teachers told the researcher that the children could be taken out of the classroom individually to participate in this study.

Subject Profiles

1. Subject J was a male child, five years and three months of age. He was from a middle socio-economic background. Subject J had been diagnosed as language impaired. His cognitive abilities had been found to be within the average to high average range of intelligence. Medical history revealed a history of middle ear infections with P.E. tube insertions.

The Fisher-Logemann Test of Articulation Competence was administered to Subject J in 10/88 to assess his ability to produce correct phonemes (speech sounds). The subject scored 13 correct consonant productions of the 25 consonant phonemes tested. Erroneous sounds were /k/ and/g/. These were tested at below age level. Consonant blends were found to be difficult for the subject. The subject's articulatory skills were considered to be mid-to-moderately delayed for his age level.

The <u>Carrow Test for Auditory Comprehension of Language</u> to assess the subject's ability to understand complex forms of language yielded a six year and three month age equivalency at a level above the subject's chronological age level. <u>The Expressive One Word Picture Vocabulary Test</u> was administered to Subject J in 10/88. He scored at the six year and eight month level.

The Test for Examining Expressive Morphology as well as the Patterned Elicitation Syntax Test were administered to Subject J in 10/88. Subject J scored at the three to three

year and six month level on both tests showing a severe delay in the ability to use correct grammatical forms in expressive language. The forms difficult for the child were pronouns, auxiliary verbs (is, are), and past tensing verbs. In summary, receptive and expressive vocabulary skills were age appropriate for this child. His expressive grammatical skills, however, were delayed by one year and six months.

2. Subject A was a female child, four years and 11 months of age. She was from a lower-middle class socio-economic background and had been diagnosed as language impaired.

Subject A was given <u>The Expressive One Word Picture</u> <u>Vocabulary Test</u> in 10/88. She scored at the five year and zero month age level indicating appropriate expressive vocabulary skills. Perceptive vocabulary skills were found to be age appropriate as well.

The <u>Carrow Test for Auditory Comprehension of Language</u> was administered to the child in 10/88 to assess her ability to understand complex forms of language. Subject A scored an age equivalency of six years and three months indicating that her understanding of language was higher than her chronological age.

<u>The Test for Examining Expressive Morphology</u> was given to the child in 10/88. This is a fill-in-the-blank test of grammar. <u>The Patterned Elicitation Syntax Test</u>, which is a sentence repetition test of grammar used to assess expressive use of correct grammar forms in sentences was given to the subject as well. The child scored at the three

year and zero month level on both tests indicating a one year and six month delay in development. The child was found to make errors in the use of plurals, possessives, past tenses, pronouns, and auxiliary verbs (is, are, an). This subject's speech consisted of run-on sentences.

In summary, receptive language in Subject A was age appropriate as were expressive vocabulary naming skills. Express grammatical development, however, was severely delayed. The present focus for this subject during this study in the classroom was self-monitoring of her rate of speech flow, correct production of vowels, and correct use of grammatical forms.

3. Subject C was a male child, four years and two months of age. He was from a middle socio-economic background, and had been diagnosed as language impaired. An evaluation from 5/88 showed a delay of 11 to 21 months in receptive and expressive language skills.

<u>The Peabody Picture Vocabulary Test - Form L</u> was administered to Subject C in 6/88. The test yielded a raw score of 22, an age equivalency of two years and ten months. On the <u>Auditory Comprehension of Language Test - Revised</u>, Subject C received an age equivalency of three years and one month. The subject also exhibited substitution and omission problems as stated by the <u>Goldman-Fristoe Test of</u> <u>Articulation</u>.

Subject C had not mastered consonant blends. His connected speech intelligibility was poor. His average

sentence length was three to four words. He had a receptive language delay of approximately ten months, and an auditory comprehension delay of seven months.

4. Subject E was a male child, five years and two months of age. He was from a middle socio-economic background. His hearing was normal, though there was a history of inner ear problems. Subject E did not begin to talk until the age of approximately three years and six months, and then, very unintelligibly. The tubes placed in his ears for the inner ear problems were reported to have helped his speech development, as reported by his mother.

In 1988, the <u>Stanford Binet Intelligence Scale - Form</u> <u>L-M</u> was administered to Subject E. He obtained a mental age score of four years and five months. His intelligent quotient was average. The basal age where he passed all items was at the age three level. The ceiling where he failed all items was at the age six level. Below the five year level, all of the child's failures were language related. At the five year level, two of the failures involved were perceptual-motor skill related. Informal conversation with the child revealed his ability to count to six, and the fact that he was developing color recognition. Alphabet familiarity was not assessed because the child would not respond to the assessment questions. Articulation testing revealed errors of omission and substitution.

5. Subject S was a male child, six years and zero months of age. He was from a low socio-economic background. He had been diagnosed as language impaired and learning impaired.

On the <u>Carrow Test of Auditory Comprehension of</u> <u>Language</u> administered to the child in the fall of 1988, the subject scored at the chronological age level of four years and zero months. On <u>The Preschool Language Scale</u>, the child scored a chronological age equivalence of three years and four months in receptive skills, and two years and three months in expressive skills. The child had multiple articulation errors. The history of this child was limited in terms of the information in his school files.

Setting

The sessions took place at Clinton County Intermediate School District in a classroom. The room was approximately 24x24 in size. There was limited furniture in this particular room. The examiner and child sat on the floor.

Materials and Equipment

The following were used during this study:

- 1) One cassette recorder.
- 2) Cassette tapes (90 minutes)
- 3) One classical guitar
- 4) Assorted instruments (xylophone, glockenspiel, Indian drum, maraca, tambourine, jingle bell).
- 5) Flash cards:
 - a. Subject J Consonants
 - 1. /k/ (initial position)

	2.	/g/	(in:	itial	position)	
b.	Sub	ject	A - Vowels			
	1.	u a				
	2.	e				
	3.	U i				
	4.	20				
	5.	U U				
c.	Subject C - Consonants					
	1.	/g/	(fi	nal p	osition)	
	2.	/b/	(fi	nal p	osition)	

- 3. /t/ (final position)
- d. Subject E Consonants
 - 1. /g/ (final position)
 - 2. /d/ (final position)
 - 3. /y/ (final position)
- e. Subject S Consonants
 - 1. /w/ (final position)

Procedure

Inspiration for This Study

This study was inspired in part by a study by Seybold (1971) in which the language skills being studied in speech therapy were put to song for the children involved. Nonmusical, verbal activities followed each music session which allowed the generalization of language skills learned through song to regular conversational speech. In the present study, there was a speech sound accuracy measurement done in the first instructional session preceding the instructional technique. During the last instructional session, a posttest was given after the instruction technique to determine if the method tested allowed for the generalization of the skills taught through this method into conversational speech. A total of four instructional sessions were conducted.

Trial Sessions

Four trial sessions were included in this study. An outline of these sessions is given below.

Trial Session No. 1

The purpose for this session was to identify specific individual language deficits which could be remediated through a music therapy technique. The examiner first spoke to the teachers of the children to obtain some background of the children and information concerning specific problems that they had in order to identify and target specific speech sounds. The teachers suggested that the examiner target the following sounds for each child:

Subject J - Initial consonant sounds /g/ and /k/. Subject A - Vowel sounds in initial, medial and final position.

Subject C, E, and S - Consonant and vowel sounds in initial, medial and final position, and the names of the colors of the rainbow.

The first trial session took place as follows: 1. The examiner went to the child's classroom and escorted the child to the session room. The child was told to sit on the floor facing the examiner. 2. The examiner gave the child a tambourine and sang the song, "Music Time is Here Again." This lasted for approximately one minute.

3. The examiner took the instrument away from the child and taught the child a song entitled "Snowflakes," by Jean Warren. The song was sung in its entirety first. Next, it was spoken phrase by phrase, and the child was asked to repeat the spoken phrase with the examiner. Next, the song was sung through with the examiner and child singing together.

4. The child was told that a list of words would be said which the child was to repeat after the examiner. The examiner proceeded to say each word, followed by a repetition by the child. This lasted for approximately two minutes.

5. The examiner asked the child if he/she had a favorite song. If not, the song, "Three Green Speckled Frogs," by Esther L. Nelson was sung. The children had been taught this song during four months of previous music sessions in a classroom setting with the examiner.

6. The child was then escorted back to the classroom.

Results from Trial Session No. 1

Subject J

This child substituted the /t/ sound in the place of initial position /k/ sound two times out of eight attempts. The initial position /g/ sound was replaced by the initial

position /d/ sound two times out of eight attempts. The child's teachers stated that the child's performance was more than likely influenced positively by the examiner's modelling of the words.

Subject A

Subject A pronounced her vowel sounds correctly 97% of the time, yet produced the medial position /o' sound as /a'four times out of eight attempts. According to the child's teacher, this subject's correct pronunciation of vowel sounds varied often. This day, she did very well.

Subject C

This subject failed to put final position consonant sounds on the ends of his words. This was noted with final position /t/, /b/, /g/, and /k/ sounds.

Subject E

This subject failed to place final position /g/ and /y/ sounds on his words 99% of the time.

Subject S

This subject substituted the /m/ and /b/ initial position sounds for 99% of the words given to him to repeat. These sounds substituted for the initial consonants /c/, /d/, /s/, /t/, /f/, and /l/.

Trial Session No. 2

This trial session was similar to the first trial session in that the same format was followed. The purpose

of this session was to determine what the children were capable of producing in terms of consonant blends. The session was carried out as follows:

1. The examiner went to the child's classroom and escorted the child to the session room.

2. The child was directed to sit on the floor facing the examiner, and was given the choice of either a drum or a jingle bell to play while the examiner sang "Music Time is Here Again."

3. The examiner and child then sang the song "Snowflakes." No instrument was given to the child for this song. The words were reviewed by the examiner singing first, then having the child sing with her.

4. The examiner then asked each child if he/she "had any news." This was the phrase the children's teachers used to facilitate conversational speech.

5. The child was told that a list of words would be said by the examiner which the child was to repeat.

6. The examiner gave the child the choice of playing a bell or a drum for the closing song of the session. The child was asked if he/she knew the song, "Old King Cole." Four out of five of the children attempted to sing the song with the examiner.

7. The child was escorted back to the classroom.

Results from Trial Session No. 2

After speaking with the children's teachers, it became apparent to the examiner that consonant blends are not

mastered in normal speaking children until the age of six. Only one child had reached that age, so the goal for this session was unrealistic. The examiner, therefore, analyzed the language samples to see if the same problems existed with each child as in the first trial session. The results were as follows:

Subject J

This child pronounced the /gl/ blends as /d/ three out of three times. One of the words did not begin with a consonant blend. The word was "guppy," but was pronounced as "duppy." The "cr" and "cl" blends were pronounced as the /d/ sound, as in "dover" for "clover" and "dib" for "crib." During the conversational speech time, the child constantly replaced the /k/ sound with the /d/ sound. This was consistent with the findings from the first session.

Subject A

This subject continued to pronounce the /o/ sound as /a/ during the word list sample. The subject's conversational speech was understandable, but not articulated.

Subject C

Subject C left the endings off the ends of his words 55% of the time during the word list speech sample. During the conversational speech time, the subject's speech was unintelligible.

Subject E

This child failed to put final position consonants on his words 20% of the time. Some of the omitted consonant sounds were /d/, /m/, and /s/. This subject's conversational speech was very difficult to understand.

Subject S

Subject S left all of the endings off his words when going through the word list. His conversational speech was too limited in content to be analyzed. All but four of the word list words were begun with the /m/ sound regardless of the actual consonant sound. The four words not begun with the /m/ sound were words that began with the /b/ consonant sound.

Trial Session No. 3

The purpose of this session was to determine if the children were capable of singing on pitch, and to see if singing words made it easier for them to say the sounds which caused them problems. The session was conducted as follows:

1. The examiner went to the child's classroom to escort the child to the session.

2. The child was asked to sit on the floor facing the examiner.

3. The examiner sang "Music Time is Here Again" while the child listened (no instrument was given to the child in this session).

4. The examiner asked the child to sing some words which focused on the problem sounds for each child. The child was asked to sing what the examiner sang in repetition.

5. The child was asked to sing "Mary Had a Little Lamb" with the examiner. If the child did not know the song, the examiner sang the parts the child did not know, then asked the child to join in.

Results from Trial Session No. 3

Subject J

Subject J could not match pitch when words were sung outside of the context of a song. When "Mary Had a Little Lamb" was sung, however, he matched pitch 70% of the time. The subject did not sing the problem sounds any differently than he spoke them.

Subject A

Subject A matched pitch three out of seven times when words were sung out of the context of a song. The subject matched pitch 85% of the time when singing "Mary Had a Little Lamb." The subject watched the examiner's mouth closely and appeared to be attempting to imitate what the examiner's mouth did as she sang. The vowel sounds, $\overline{/a}$, $\overline{/a}$, $\overline{/i}$, and $\overline{/o}$ were clearly heard to be pronounced correctly.

Subject C

This subject matched pitch two times out of ten while singing the list of words out of the context of a song. It was difficult to hear him when he was singing "Mary Had a Little Lamb" as far as intonation was concerned, because he was singing very softly. At least three pitches in the song were in tune. The subject watched the examiner's mouth the same way that Subject A did as the song was sung.

Subject E

This child began clapping with the examiner when she first started singing at the beginning of the session. The children had been asked to do this during the four months of music in the classroom. The child put the consonant sound of /d/ at the end of his words, which he had not done in previous sessions while speaking. The subject did not sing on pitch, but appeared to enjoy music and to be motivated by it. At the end of two of the trial sessions, this one included, the child asked to play the examiner's guitar. As he played, he sang a song he made up about his favorite cartoon.

Subject S

Subject S was able to sing on pitch. The subject could not match pitch when the word list words were sung, but did so 99% of the time during the song. From what the examiner could discern listening to the recording of the session, the child sang the /w/ sound one time out of five

attempts, which, according to his teachers, was unusual for him.

Trial Session No. 4

the child to the session room.

This session was performed to test the methods to be used during the instructional sessions. The children were exposed to the flash cards to be used for the <u>WMASSP</u> in order to make sure the child knew what the pictures illustrated. The session was conducted as follows: 1. The examiner went to the child's classroom and escorted

2. The beginning song, "Music Time is Here Again," was sung. The child was given a rhythm instrument to play. This lasted for approximately 90 seconds.

3. The examiner administered the <u>WMASSP</u> to the child. Each flash card illustration was placed on the floor in front of the child one at a time. The examiner asked the child, "What is this?," while pointing to the illustration. If the child did not respond after three verbal prompts, the examiner said, "This is a (name of object illustrated)," and explained what the object was. This lasted for approximately two minutes.

4. The individual instructional songs were taught to each child. This lasted for approximately five minutes.
5. The child was escorted by the examiner back to the classroom.

Results of Trial Session No. 4

It became apparent to the examiner during this session that it would be best to focus on only one or two speech sounds per child. This was decided because of the short attention span of children this age, and also because the examiner did not want to overwhelm the children with too much material. An account of each run of this session with each child is given below:

Subject J

Subject J was able to identify all of the illustrations on the flash cards for the <u>WMASSP</u> except for "kite." The child used the word "duck" for "goose," but the illustration resembled a duck. Also, the child used the word "fence" for "gate." The /g/ sound was substituted for by the /d/ sound. The /k/ sound was substituted for by the /t/ sound. It was difficult for the examiner to hear in this session if the /g/ or /k/ sounds were produced in song due to the child's soft singing. This session lasted for eight minutes.

Subject A

Subject A knew all of the words designated for her on the <u>WMASSP</u> except for "web," "shell," "fox," and "log." The "ship" was called a "boat." The /o' sound continued to sound like the /a' sound when produced. The subject sang all of the words with the targeted vowel sounds in them during the singing portion of this session. These words were "dropped," "egg," "kitchen," "mop," "had," and "up." This session lasted for a total of eight minutes.

Subject C

Subject C pronounced the /t/ sound correctly three out of five times. The /b/ sound was mispronounced five out of five times on the <u>WMASSP</u> in that it was left off of the endings of the words. Three of the words, "can," "cub," and "bib," appeared to be unfamiliar to the child, as evidenced by his puzzled facial expression and shrugged shoulders. The ending /g/ sounds were left off of the words for the <u>WMASSP</u>. During the singing, the examiner realized that there were too many words in the songs composed for this child. Some of the words were taken out later in the actual study. The child articulated the final /t/ sound throughout the instructional song for that sound. The child watched the examiner's mouth throughout the song as he had done before while singing. This session lasted for eight minutes.

Subject E

This subject had a shorter attention span than in the last three sessions, however he did participate in the <u>WMASSP</u> procedure and learned the songs the examiner taught him during this session. After singing one of the songs, the child began to sing the first song he had learned before without the examiner, which showed that the songs were retainable in his memory. The /y/ sound was pronounced correctly in the songs and during the <u>WMASSP</u>. The /d/ sound was pronounced correctly five out of five times on the

<u>WMASSP</u>. The /g/ sound was pronounced correctly three out of five times on the <u>WMASSP</u>. The words that the subject needed help with on the test were "jug," and "x-ray." The "log" he called "wood," and the "rug" he called "carpet." The examiner let the child know that he was correct with the latter two identifications, but clarified the words to him by explaining why the wood was called a log, and why the carpet was called a rug.

Subject S

Subject S could not pronounce the words for the <u>WMASSP</u>. When singing, however, he sang the /w/ sound for the word "whoa" and the word "water." He spontaneously began to sing when the examiner began to sing. He sang on pitch as well. He was the only one of the children who could sing perfectly on pitch. The examiner used the <u>WMASSP</u> procedure once more at the end of the session to determine if the /w/ sound produced in singing would transfer directly into speech. It did not transfer in this session. The child requested to play the examiner's guitar at the end of the session. As soon as he had the instrument in his hands, he began to strum and sing the "whoa, whoa, whoa" chorus from "The Cowboy" song that he had just been taught. Music appeared to be a good motivator for this subject.

Revisions and Subjects for the Actual Sessions

Revisions were made in the research design for this study, after obtaining the results from the four trial

sessions, speaking with one of the children's teachers (a speech pathologist), and speaking to the school administration. Two of the subjects, Subject A and Subject E, were dropped from the study because their language behaviors were inconsistent during the trial sessions. The examiner decided that it would be difficult to measure their progress. One of the speech sounds for Subject C (/t/) was dropped because the examiner thought three speech sounds would be too many for him to focus on. The amount of previously planned sessions was reduced from 15 to five to accommodate the wishes of the school administration. Also, to reduce the number of times the children would have to undergo testing procedures, the examiner agreed to do one pretest and one posttest instead of a pretest and posttest at the beginning and end of each session. A practice session was added to go over the test words with each child. The examiner modelled the words for the children when necessary during the practice session to make sure the children knew the words illustrated on the flash cards. During the actual pretest and posttest, no model was provided. An outline of the practice session, pretest procedure, music instructional sessions procedure, and posttest procedure are given below.

Practice Session

The practice session lasted for approximately ten minutes and followed the format below:

1. The examiner went to the child's classroom and escorted him to the session room.

2. The examiner asked the child to sit on the floor facing her. A rhythm instrument was given to the child to play during the first song.

3. The song, "Music Time is Here Again," was sung by the examiner. The child played the instrument he was given. This lasted for 30 seconds.

4. The examiner placed the cards for the <u>WMASSP</u> in front of the child one at a time and said, "This is a(an) (name of illustrated object)." She then said, "What is this?," and waited for the child's response. The cards were reviewed again, only the second time, the examiner asked first, "What is this?," and waited for the child's response. If no response was given, the examiner said, "This is a(an) (name of object)." The examiner then asked, "What is this?," and waited for the child's response.

5. The examiner sang the song, "Step Right Up and Play Your Own Song." The child was asked to select from a group of assorted instruments and play with the examiner while she sang. This lasted for approximately one minute.

6. The child was escorted back to his classroom.

Pretest and Music Instructional Session No. 1 Procedures

The pretest was given to each child during the first music instructional session. The session was conducted as follows:

1. The examiner went to the child's classroom and escorted him to the session room.

2. The child was asked to sit on the floor facing the examiner. A rhythm instrument was given to the child to play during the first song.

3. The examiner sang "Music Time is Here Again," and the child played the instrument given to him. This lasted for 30 seconds.

4. The examiner told the child that the flash cards he had seen before would be shown to him, and he would be asked to give the name of the picture on the card. The examiner placed each card in front of the child one at a time and said, "What is this?," while pointing to the card. This lasted two minutes.

 The examiner sang the instructional songs for the child, and taught him the songs phrase by phrase. Each song was sung two times. This lasted approximately five minutes.
 The child selected an instrument to play from the group of assorted instruments on the floor to the left of examiner. The instructor sang "Step Right Up and Play Your Own Song" while the child played the selected instrument. This lasted for one minute.

7. The child was escorted back to his classroom.

Music Instructional Sessions No. 2 and No. 3

The music instructional sessions lasted no more than ten minutes per session. These sessions were conducted as follows:

1. The examiner went to the child's classroom and escorted him to the session room.

2. The examiner asked the child to sit on the floor facing her, and a rhythm instrument was given to the child to play during the first song.

3. The examiner sang "Music Time is Here Again." The child played the instrument given to him. This lasted for 30 seconds.

4. The examiner and child sang the instructional songs. Verbal praise was given for correct sounds produced, or in the case of Subject S, the correct shaping of the lips for the target sound. When produced incorrectly, praise was given for singing, but the child was asked to watch what the examiner's mouth and tongue did when producing a given target sound. The song was then sung the second time before moving on.

5. The examiner sang "Step Right Up and Play Your Own
Song." The child played along with the examiner on an
instrument selected from the group of assorted instruments.
6. The child was escorted back to his classroom.

Session No. 4 and Posttest Procedures

This session lasted for approximately ten minutes and was conducted as follows:

1. The examiner went to the child's classroom and escorted him to the session room.

2. The examiner asked the child to sit on the floor in front of her. A rhythm instrument was given to the child to play during the first song, "Music Time is Here Again."

3. The examiner sang the first song and the child played the instrument he was given. This lasted for 30 seconds.
4. The examiner and child sang the instructional songs.
Verbal praise was given as in the two previous sessions for correct pronunciation of target sounds. The correcting procedure used in the previous two sessions was also used in this session.

5. The <u>WMASSP</u> was administered to the child. The same procedure was used in the posttest as in the pretest.
6. The examiner explained to the child that this was their last session together, and gave him the choice of singing his favorite song, or playing his favorite instrument. If the latter was chosen, the song "Step Right Up and Play Your Own Song" was sung as in the previous sessions.
7. The child was escorted back to his classroom.

Observers and Scoring

Each session was tape recorded. The examiner wrote a report of her observations for each session with each child documenting the child's behavior and attempts to sing the words in each song (see Chapter IV). The <u>WMASSP</u> was administered to the children as a pretest before the music instructional method was implemented, and at the very end of this study in the final session. The pretest took place within the first instructional session directly before the instructional method. The posttest was given directly following the instructional method during the last session. The results of the pretest and posttest were scored by a

speech pathologist from Michigan State University who was a specialist in the field of preschool age speech pathology, and by the examiner. The results of the scores were averaged and graphed (see Chapter V). The pretest and posttest scores were compared at the end of the study to determine if the four music instructional sessions helped the children to meet the goals set for them. The WMASSP was scored as follows: 1) a score of one was given if the child did not attempt a word; 2) a score of two was given if a target sound was substituted for by another sound, or in the case of Subject S, if the /w/ sound was not heard before a substituted sound; 3) a score of three was given if the child pronounced the target sound correctly, or in the case of Subject S, if the mouth was shaped correctly for the /w/sound, and the /w/ sound was heard at the beginning of the word before any other sound. There were five words on the WMASSP per target sound for each child.

CHAPTER IV

CASE STUDIES

Subject J

Practice Session

The child was given an Indian drum and a mallet to play during the first song, "Music Time is Here Again." The <u>WMASSP</u> was administered to the child after the song. The examiner only modelled the words for the child that he appeared not to know (as evidenced by a wrong object name or hesitancy in stating the name of the object). The child knew all of the words for the test except for "gate," "goose," and "cub." The words beginning with the /k/ sound were begun by the child with the /t/ sound. For example, "cub" was pronounced as "tub." All of the words beginning with the initial /g/ sound were begun with the /d/ sound. For example, "girl" was pronounced "dirl."

The child selected the xylophone to play during the final song, "Step Right Up and Play Your Own Song." The child played vigorously and laughed while playing glissandos. After playing through the song, the child was escorted back to his classroom.

Pretest and Session No. 1

The child appeared to be depressed or tired in this session as evidenced by his slow motor movements, serious expression, and slouched posture. The examiner asked if he

was having a hard day, and he shook his head affirmatively. The child's face became animated when he began to play the drum given to him by the examiner to play during the song, "Music Time is Here Again." After the opening song, the pretest was administered to the child (the <u>WMASSP</u>) (see Chapter V, Table 1 and Figure 1).

After the pretest, the examiner taught the instructional songs to the child. "The Gorilla" song was sung three times; once by the examiner alone, and twice with the child. The child did not sing most of the words for this song. He appeared not to know the words very well. He did attempt to follow the examiner singing softly and a few beats behind her. During "The Cat" song, the child sang the word "cat" all of the three times it appears in the song the second time through the song. The child only sang half of the word "country" ("____try") both times the song was sung. The /k/ sound was substituted by the /t/ sound, as in "tat" for "cat."

The child selected the Indian drum to play for the closing song of the session, "Step Right Up and Play Your Own Song." The child was then escorted back to his classroom.

Session No. 2

The child appeared to be much brighter in this session than in the previous session. He galloped into the room, and smiled at the examiner while she was talking to him. The child was given the Indian drum to play for the

beginning song, "Music Time is Here Again." The child played the drum slowly first on the side, then rapidly on the top. The examiner asked for the drum to be handed to her after the song was finished. The child played a few more beats before returning it to her.

The instructional songs were sung next. The child substituted the initial /d/ sound for the /g/ sound in "gorilla" and "goodies" each time these words were sung. The song was sung through two times. During "The Cat" song, the initial /k/ sound as in "cat" and "country" was substituted for by the /t/ sound, as in "tat" and "tountry." This was done both times that the song was sung. The child was capable of making the initial /k/ sound, as evidenced during the pretest of the previous session. This ability had not become consistent, however.

During the song, "Step Right Up and Play Your Own Song," the child selected the Indian drum to play. The child beat very rapidly on the drum with enthusiasm. The child put the mallet down after the examiner ceased to play the guitar signalling for him to stop. The child then beat the drum a few times with his hands appearing to hear what sound it would make without the mallet with a curious expression on his face. The child was escorted back to his classroom.

Session No. 3

Subject J entered the room skipping and smiling. The Indian drum was given to him to play during the first song,

"Music Time is Here Again." The child played various rhythms on the drum.

After the first song, "The Gorilla" song was sung. The child continued to substitute the /d/ initial consonant sound for the /g/. The child watched the examiner's mouth 80% of the time through the song both times the song was sung. The child sang loudly with the examiner, and sang 80% of the words. During "The Cat" song, the child sang loudly with his examiner, and appeared to try to sing on pitch, adjusting his pitch to match the examiner's as he sang. The child put an accent at the beginning of each word beginning with the initial /k sound. The /k sound was heard in the word, "cat," the first time the word was sung the first time through the song. The other seven times the /k/ sound was to be sung, however, the /t/ sound reappeared in the child's vocalizations. The child sang enthusiastically during the session.

The child selected the Indian drum to play during the final song of the session, "Step Right Up and Play Your Own Song." The child appeared to experiment with the sound of the drum, tapping it in various places (top, rim, and bottom). The child was escorted back to his classroom at the close of the session.

Session No. 4 and Posttest

The child entered the room and sat on the floor next to the drum where he has been instructed to sit for each session. The subject appeared to be in a joyful mood as

evidenced by his smiling, galloping, and talking to the examiner on the way to the session and at the beginning of the session. The Indian drum was given to the child to play during the song, "Music Time is Here Again." The child experimented with the sound of the drum, hitting it on the top, and then on the rim. The child also flipped the drum over to hear how it sounded on the other side.

"The Gorilla" song was sung next. The child continued to substitute the /d/ sound for the initial /g/ consonant sound for the words "gorilla" and "goodies." The child sang all of the words in each phrase, which he had not done before. The child sang on pitch 80% of the time throughout this song. During "The Cat" song, the child continued to substitute the /t/ sound for the /k/ sound as in "tat" and "tountry" for "cat" and "country." Again, the child sang on pitch 80% of the time. The child could not do this before this session. The posttest was given after these songs were sung (see Chapter V, Table 1 and Figure 1).

Before the last song, "Step Right Up and Play Your Own Song," was sung, the examiner explained that it was her last day, and allowed the child the opportunity to sing his favorite song, or play an instrument he wanted to play. He elected to play the Indian drum without the mallet (palms of his hands). The child played the drum for a few seconds after the examiner stopped playing guitar and singing. The examiner asked him if he knew what he was going to do for spring break. He said he did not know. The examiner then escorted him back to his classroom.
Subject C

Practice Session

The child was given the Indian drum and a mallet to play during the beginning song, "Music Time is Here Again." The child played loudly while the examiner sang and played guitar.

This subject had the most difficulty of the three children with his words for the <u>WMASSP</u> in terms of object cognition and word association. The following words were modelled for the child: cab, cub, web, knob and bib. It should be noted that the final consonant /b/ sounds were pronounced in web, knob, and bib when modelled for the child the first time through the words. The second time through, the child did not produce any final position /b/ sounds.

The following were modelled for the ending /g/ sound: log, dog, rug, bug, pig. The /g/ sound was left off of the ends of all of these words both times through the word list. Through hand gestures, the child showed the examiner that he understood what a knob, bib, log, and rug are. The child looked at the illustration of the dog and called it a "puppy," which is normal for a child his age to do.

After this, the child was asked to select an instrument to play during the last song. He chose the xylophone. The examiner sang and played guitar while the child played glissandos on the xylophone.

Session No. 1

Subject C appeared to be in good spirits, as evidenced by his smiling, laughing and talking with the examiner before the session began. The child was given the Indian drum to play during the first song, "Music Time is Here Again."

The pretest was administered to the child at the conclusion of the session beginning song (See Chapter V, Table 2 and Figure 2).

The instructional songs were sung after the pretest was given. During "The Bag" song, the child sang with the examiner, watching her mouth and appearing to attempt to imitate what her mouth did. The first two times through the song, the child sang only the words, "bag" and "full." "Bag" was pronounced "ba__," and "full" was pronounced "bur." The examiner reminded the child after singing the song the second time to lift the tongue up in the back of his mouth to meet the roof of the mouth to make the /g/ sound in "bag." The examiner modelled the word two times, but the song was not repeated.

During the song "Corn on the Cob," the word "cob" was modelled by the examiner four times during the first time through the song. The child pronounced the word "cob" as "ba__" throughout the song the first time. The second time through the song, the examiner told the child that she would sing the first and third phrase, and that he was to sing the second and fourth phrase of the song. In other words, the

only word he had to sing was "cob." The child was told to bring his lips together to form the /b/ at the end of the word "cob." The child continued to pronounce the word as "ba ."

For the final song of the session, "Step Right Up and Play Your Own Song," the child selected the glockenspiel to play. The child played mostly glissandos while the examiner played guitar and sang. The child was then escorted back to his classroom.

Session No. 2

Subject C was very quiet when he entered the session room. He was given an Indian drum to play while the examiner sang, "Music Time is Here Again." The child played the drum with a slow, irregular beat.

The instructional songs were sung next. The child sang the word "bag" as "ba__" both times that "The Bag" song was sung. He continued to sing while watching the examiner's mouth. During the song, "Corn on the Cob," the child sang the word "cob" several ways. He either began the word with the initial /b/ sound, or with the initial /d/ sound. The second time through the song, the last time the word "cob" was sung, the child brought his lips together to form the /b/ final position sound with a verbal prompt and model by the examiner. The child was verbally praised for doing so. The examiner said, "Good! I saw your lips come together!"

For the closing song, "Step Right Up and Play Your Own Song," the child selected the glockenspiel to play. The

child played many glissandos while the examiner played guitar and sang. The child was then escorted back to his classroom.

Session No. 3

The child calmly entered the room and sat down as directed near the Indian drum on the floor. The child played the drum while the examiner played guitar and sang, "Music Time is Here Again."

The song, "The Bag," was sung next. The child watched the examiner's mouth throughout the song. The first time through the song, the word "bag" was sung by the child with the final position /g/ sound omitted. The same pattern persisted the second time through the song. The word "bag" was sung a total of twelve times each time the song was sung. As it is written, it is only to appear a total of ten times.

During the song, "Corn on the Cob," the child sang the word "cob" a total of eight times throughout the song (as it appears eight times). Each time the child sang the word <u>after</u> the examiner. "Cob" was pronounced by the child as "pa" or "da." At the end of the first time through the song, the examiner modelled the word sung on the last note of the song two times, having the child sing with her. The final time, she emphasized the /b/ final position sound, and the child formed the /b/ sound after here, although there was a delay between the beginning and ending of the word. The second time through the song, the child appeared to be distracted, often looking away from the examiner. The child continued to leave the endings off of the word "cob."

For the final song, "Step Right Up and Play Your Own Song," the child selected the xylophone to play. The child played glissandos on the instrument while the examiner played guitar and sang. The child was escorted back to his classroom at the conclusion of the song.

Session No. 4 and Posttest

The child was directed to sit on the floor in front of the examiner. The child appeared to be in a good mood, as evidenced by his smile. The child played the Indian drum and sang after the examiner (singing a phrase behind her) during the song, "Music Time is Here Again." This is the first time the child had sung spontaneously without being asked to sing. Ordinarily, the examiner sang this song alone while the child just played the drum. The examiner gave him verbal praise for singing at the conclusion of the song.

"The Bag" song was sung next. The child pronounced the word "bag" as "ba__" each time the word was sung. The child sang a few words behind the examiner throughout the song. When "Corn on the Cob" was sung, the child sang the first part of the song ("I like corn on the cob...") which he had not sung since the first session. The child sang a word for each of the words, though they were not clear. The child continued to pronounce the word "cob" as "da__," or "ba__." When he sang the phrase, "I like corn on the cob," it sounded like "A___ torn on da__."

The posttest was given after the instructional songs were sung (see Chapter V, Table 2 and Figure 2). Before the final song was sung, the examiner explained that this was the last session. She gave the child an opportunity to choose a favorite song to sing, or the choice of an instrument to play. The child elected to play the xylophone. The examiner sang "Step Right Up and Play Your Own Song" while the child played glissandos up and down on the xylophone. The child talked with the examiner for a few seconds before he was escorted back to his classroom.

Subject S

Practice Session

Subject S was given an Indian drum at the beginning of the session to play during the song, "Music Time is Here Again." The child wanted to play the xylophone after playing the drum, but was told that he would be given the opportunity to do so near the end of the session.

On the <u>WMASSP</u>, the child appeared to know all of the words, but could not pronounce them correctly. "Web" was modelled for the child, but he pronounced it as "me__." The child thought the illustration of the worm was a snake. After "worm" was modelled for him, the child pronounced it as "mer." "Window" was pronounced as "__oh" with a forced glottal sound. It was said by the examiner once more after the child's attempt to say it. The word "wagon" was pronounced "aaa," and spoken by the examiner after the child's attempt. The word "watch" was modelled first by the examiner, and produced by the child as "maah." The examiner said the word once again after the child's attempt. The words were produced by the child the same way as the first time the second time through the words.

The child selected the xylophone to play at the end of the session. He often struck the instrument hard, causing the bars to fall off. The examiner stopped singing "Step Right Up and Play Your Own Song" and modelled for the child the correct way to play the instrument. At the end of the session, the child put the mallet away, picked up the instrument, and placed it where the examiner originally had it sitting in the room. The child was then escorted back to his classroom.

Pretest and Session No. 1

The child entered the room giggling and ran behind a couch playfully trying to hide from the examiner. The child was directed to sit on the floor next to the Indian drum. The examiner gave him the drum and told him he could play one of the other instruments near the end of the session, as he was looking at them and reaching for them. The child played the drum while the examiner sang and played guitar.

The pretest was given to the child after the first song was sung (see Chapter V, Table 3 and Figure 3). After the pretest was administered to the child, "The Cowboy" song was sung. The examiner began to sing, and the child began to sing with her watching her lips and appearing to attempt to imitate what her mouth was doing. The child appeared to

attempt to sing the words "cowboy" and "stop." These words sounded like "buy" and "mah." The child sang the word "whoa" twelve out of the twelve times it appears in the song. Each time, the child appeared to form the initial /w/ sound correctly. The song was sung once through.

During the song "Water is Wet," the song was sung once through by the examiner with the child attempting to imitate what she did with her mouth while singing. The song was sung an additional time with the child singing with more confidence. The child sang "wa" a total of ten times the first time through the song, and a total of eleven times the second time through the song (the "wa" syllable occurs by itself in sequence a total of ten times in the song).

The child selected the xylophone to play during the final song, "Step Right Up and Play Your Own Song." The child played loudly, often jostling the bars on the instrument. The child set the bars back in order each time they were upset, appearing anxious to begin playing again (quickly putting them back in place). The child was escorted back to his classroom after the session.

Session No. 2

The child was absent from school on this day, so the examiner was unable to collect any data.

Session No. 3

The child ran into the room and sat next to the collection of instruments on the floor. The examiner

assured him that he would be given the opportunity to play one of them near the end of the session. The child played a steady beat on the Indian drum 70% of the time, though it was not in rhythm with the examiner.

During "The Cowboy" song, the examiner sang the first part of the song, then gave a verbal prompt for the child to join in on the chorus. The chorus consisted of the word "whoa," which was to be sung a total of twelve times. The first time through the song, the child sang inaudible, frequently glancing at the instruments next to him. The second time through the song, the examiner asked the child to see if he could sing louder than she. The child attempted to sing the song starting from the beginning at that point. He continued to sing "buy" and "mah" for "cowboy" and "stop." The word "whoa" was sung 60% of the time with the correct /w/ sound formation of the lips. The other 40% of the time, the child brought his lips together to form the /m/ sound, as in "moe" for "whoa." The child had his eyes on the instruments the first time through the song. His eyes were on the examiner 80% of the time the second time through the song.

During the "Water" song, the child continued to appear distracted by the instruments. He stared and poked at the xylophone while singing. The examiner reminded him that one more song remained to be sung before he could play on an instrument. The child watched the instruments, mouthing the words to the song the first time through the song. When

verbally redirected to look at the examiner, he did so and sang. The examiner noticed some /m/ formations on the child's lips, but could not get an accurate record of how often this occurred due to the fact that he could barely be heard. The child's attention span was noted to be at a lower level than in previous sessions.

For the final song, "Step Right Up and Play Your Own Song," the child selected the glockenspiel to play. The child played a very controlled scale up and down the instrument while the examiner played guitar and sang. The child was then escorted back to his classroom.

Session No. 4 and Posttest

The child entered the room and sat close to the instrument collection on the floor. The examiner explained that he could play one of the instruments near the end of the session. The examiner spoke with the child about having his St. Patrick's day clover on (made of construction paper). The child pointed to it and said, "Mine!" Next, the beginning song, "Music Time is Here Again," was sung. The child beat the Indian drum given to him with a steady beat, slightly under the examiner's tempo. The child stopped playing when the examiner stopped playing and singing.

During "The Cowboy" song, which was sung next, the child sang the words "boy" and "stop" as he had in the previous sessions ("buy" and "mah"). The child sang the initial /w/ sound for the word "whoa" a total of 13 out of

the 12 times it occurs in the song. The child also attempted to sing more words from the first half of the song, "The cowboy wanted his horse to stop," though no words could be understood. It sounded mostly like humming between the words "cowboy" and "stop," which he did form with his lips, though incorrectly. The second time through the song, the child sang the words "boy" and "stop" again. The word "whoa" was sung 12 out of 12 times.

At the beginning of the "Water" song, the child appeared to be distracted by the instruments once again, moving toward them and striking the glockenspiel with his fingers. The first time through the song, the examiner could not hear the child sing a word, because his face was turned toward the glockenspiel, and his fingers were thumping the instrument. Also, a person entered the session room to take some chairs out for a meeting across the hall. The examiner waited for things to guiet down before beginning the song again. The child appeared to be confused between the songs. He began to sing some of the words to "The Cowboy" song. The examiner kept singing the words to the "Water" song until the child caught on and started to sing the correct words. The child sang "wa" for "water" It was sung "mah" once, but the four out of five times. examiner sang again louder, "wa," and the child corrected himself.

The posttest was administered to the child next (see Chapter V, Table 3 and Figure 3). Before singing the last

song, the examiner explained that this would be their last session together. The child was given the option to sing one of his favorite songs, or to play an instrument. The child selected the glockenspiel to play. The child played what sounded similar to a pentatonic scale while the examiner sang and played the song, "Step Right Up and Play Your Own Song." The examiner complimented him on the "pretty" sounds he had made at the completion of the song. The child was then escorted back to his classroom.

CHAPTER V

This study was designed to explore the effectiveness of the use of singing songs to help language impaired children develop specific language skills in the area of phonology. The progress of the subjects was measured by the <u>Wells</u> <u>Measurement of Accurate Speech Sound Production</u>, developed by this researcher for this study. The test mentioned above was used as a pretest and posttest, and was scored by the researcher and another observer. The pretest and posttest raw scores are listed for each subject in Appendix G.

In Table 1, the pretest and posttest mean scores are given for Subject J. A graph of these scores is given in Figure 1. The test words are listed on the horizontal axis, and the score levels are listed on the vertical axis. The pretest and posttest mean scores for Subject C are listed in Table 2, and a graph of these scores is given in Figure 2. It should be noted that two test items were omitted from the posttest for Subject C due to his lack of cognitive recognition of these items (bug and cab). The pretest and posttest mean scores for Subject S are listed in Table 3, and a graph of these scores is given in Figure 3.

Review of Hypotheses

1. Given that Subject J presently pronounces words beginning with the /k/ (as in kite) and /g/ (as in gum) sounds with those sounds correctly produced with 50%

Words	Pretest Scores	Posttest Scores
cub	2.00	2.00
car	2.00	2.50
COW	3.00	2.75
candle	3.00	3.00
cup	2.00	3.00
guitar	2.00	2.00
girl	2.00	2.00
gate	2.00	2.50
goat	2.50	2.25
goose	1.00	3.00

Table 1

PRETEST AND POSTTEST MEAN SCORES FOR SUBJECT J



DIFFERENCES IN SCORES FROM PRETEST TO POSTTEST FOR SUBJECT J

accuracy when requested of him, he will produce the /k/and /g/ sounds with 80% accuracy in songs using these sounds by the conclusion of four music instructional sessions with the examiner. Also, the ability to use these sounds outside of a song shall increase to 60% as measured by a posttest at the end of four instructional sessions with the examiner.

Subject J did not produce the correct /k/ or /g/ initial consonant sounds in song at any point during this study (refer to Chapter IV). The /k/ sound was heard one time in song during the entire study. Therefore, it can be concluded that the goal of 80% accuracy in the production of these sounds in song was not reached. This child can produce the /k/ and /g/ sounds 50% of the time when requested of him in isolated words (not in sentence form). The child's teachers state that this child cannot produce these sounds in sentence form. The songs were in sentence form.

The pretest and posttest scores for this child varied irregularly. If each word for each sound is assigned a percentage of 25%, the child went from a total of 40% accuracy to close to 60% accuracy by the posttest. Therefore, according to the <u>WMASSP</u>, the child came close to meeting the given goal, but did not reach it for the /k/ sound. Therefore, according to the <u>WMASSP</u>, the child reached the assigned goal of an increase of 10% in his ability to produce this sound. In song, there was 0% accuracy in the child's production of the /g/ sound.

2. Given that Subject C can pronounce the final position /b/ (as in tub) and /g/ (as in dog) sounds correctly 50% of the time at the request of a teacher in words he is familiar with, he shall be able to produce these sounds with 80% accuracy in songs using these final position consonants at the conclusion of four instructional sessions with the examiner. Also, the subject will have a 5% increase in the correct production of these sounds as measured by a posttest.

There was no significant increase in the correct usage of the final position/g/ and /b/ sounds as used in song. There was an increase from 0% to 20% in usage of both the /g/ and /b/ final position consonants as measured by the posttest.

3. Given that Subject S presently positions his lips correctly for the production of the initial /w/ (as in water) sound with 20% accuracy when requested of him by a teacher, after four instructional sessions with the examiner, the subject will produce the positioning of the lips for this sound with 80% accuracy in song. Also, there shall be a percentage increase fro 20% to 30% in words on a posttest.

This subject was present for three out of the four instructional sessions conducted by the examiner, and for the practice session. In song, the child was able to produce the initial /w/ sound with an overall accuracy rate of 67%. Therefore, the child did not reach the established goal for properly positioning the lips for the targeted speech sound in song. There was a 0% increase in the production of the initial /w/ sound from the pretest to the posttest.

From these findings, it can be seen that there was no significant change in the production of the targeted speech sounds for each child using the tested method by the conclusion of this study.

Та	bl	е	2	
-				

PRETEST AND POSTTEST MEAN SCORES FOR SUBJECT C

Words	Pretest Scores	Posttest Scores
cub	1.00	1.50
cab	1.00	
web	1.00	1.00
knob	1.00	1.00
bib	1.00	2.75
bug	1.50	
log	1.00	1.50
dog	2.50	2.00
rug	1.00	2.00
pig	2.00	2.00



DIFFERENCES IN SCORES FROM PRETEST TO POSTTEST FOR SUBJECT C

Та	bl	е	3
-			-

PRETEST AND POSTTEST MEAN SCORES FOR SUBJECT S

.

Words	Pretest Scores	Posttest Scores
web	2.00	2.00
worm	2.00	2.00
window	2.00	2.25
wagon	3.00	2.00
watch	2.00	2.00



DIFFERENCES IN SCORES FROM PRETEST TO POSTTEST FOR SUBJECT S

CHAPTER VI

SUMMARY AND CONCLUSIONS

Summary

It has been found and documented in research that music is a valid way to teach language skills to children, due to the fact that language and music are related in terms of rhythm, pitch, dynamics, and phrase.

Music is a natural part of a child's early years. Children sing songs to accompany playground games, and they are read nursery rhymes, which have specific rhythms. Action songs are sung by children in many cultures (McCarthy, 1985; Nadon-Gabrion, 1984).

Based on the premise that music can be used to develop such skills as auditory discrimination and can be used to organize language in time, the researcher investigated the use of songs with targeted speech sounds included to aid language delayed children in developing specific speech sounds.

The subjects for this study were three preschool age male children ranging in age from four years and two months to six years and zero months of age. All three of the children were diagnosed as language delayed with a phonological problem. Four trial sessions were held with these children and two other children who were eliminated from the study due to inconsistent language behaviors which

would have been too difficult to measure in terms of their progress throughout this study. The three subjects had also been exposed to music therapy through four months of music in the classroom with the examiner. One practice session was held in which the test items for the <u>WMASSP</u> were reviewed with the children. Four instructional sessions followed the practice session. The pretest was administered to the children during their first individual session with the researcher before the instructional songs were sung. The posttest was administered to the children immediately following the instructional songs during the final session. The following general conclusions were drawn at the conclusion of the study by the researcher:

- 1. The music instructional sessions as conducted in this study produced no significant change in the language behaviors in song of the three subjects who participated in this study.
- 2. The music instructional sessions produced no significant change in the language skills of the three subjects for this study between the pretest and posttest.

Discussion

Several factors may have influenced the outcome of this study. For one, more time was needed to work with the children in order to see a significant change in their language behaviors. Each child was involved in the study for up to ten minutes per session once a week for a total period of four weeks (not including the practice session in which the instructional method was not included). While the preliminary investigation was under way, the researcher was informed that the progress in language skills for these children takes a normal time period of up to five months to see a significant change in language behavior.

The researcher is also aware that the pool drawn from for this study was small and not representative of the total population of language delayed preschool children. The researcher only had three subjects to work with, which made the sample for this study very small.

The study may have been more effective if the researcher could have worked more closely with the school program that the children came from. The school administrators and teachers were more than helpful in attempts to carry out this study; however, the normal school program was not set up for inclusion of extra programs. Because of this, the researcher was not able to work with the children for more than ten minutes once a week.

What was helpful was that guidance was provided as to the focus for each child in terms of language skills by a speech pathologist (one of the children's teachers). The speech pathologist left school for a maternity leave halfway through the study, however, and this limited some needed guidance for the researcher. It is believed that using music in such a setting needs the input from a speech pathologist who is familiar with the children included in such a program.

It should be noted that at the beginning of the study, the researcher was not made aware of the proper channels

needed in order to obtain permission to do her study. Thus, many plans were made which later needed revision to meet the requests of the administration of the school.

Other than the influences on this study listed above, the measuring method for this study could have been improved in two ways: 1) The researcher should have sought more specific guidance from a speech pathologist to find words which would have been more age appropriate for Subject C; and 2) The method of measurement for progress during the instructional sessions could have been more specific and less subjective.

Aside from the factors which could have been improved, the examiner realized that singing and playing instruments worked effectively as a motivator for these children. Subject J, who was at that time trying to develop the ability to use the targeted speech sounds used in this study in the regular classroom in sentences, was able to practice producing these sounds in a natural way in sung sentences. This child had the ability to say these speech sounds in isolated words, but not in sentences. The child also appeared to enjoy playing the musical instruments brought in by the examiner, especially the Indian drum.

Subject C was working on the speech sounds targeted for this study in isolation in the classroom. In the songs used, the child was given the opportunity to practice these speech sounds over and over again in a natural way through song. Also, this child watched the examiner's mouth 90% of

the time and appeared to imitate the movements of her mouth as she sang. In the classroom, the teachers stated that the child was usually asked to watch the teacher's mouth, and then imitate the movements of the mouth as modelled. In singing, especially with this child, watching the researcher's mouth was almost always spontaneous. This child also enjoyed playing the instruments brought in by the examiner, especially the xylophone.

Subject S watched the examiner's mouth as she sang approximately 70% of the time. He began singing spontaneously 90% of the time unless asked not to. This was a child who spoke in unclear, one-word sentences. In song, he tried consistently to put two words together. He hummed that which he could not form with his lips, which gave him an opportunity to feel what it was like to have a continuous stream of sound coming from the vocal apparatus. This child, especially, was motivated by the presence of instruments. The instruments worked very well as a reward for him at the end of each session. He enjoyed playing the glockenspiel in particular.

In conclusion, there are many things the researcher would change about the way this study was carried out if done again; however, what was learned gives rise to the possibility and need for further research in this area.

Recommendations for Further Research

The researcher believes that much more specific research is needed in this area to determine the

effectiveness of integrating music into the teaching methods used to help language delayed children develop language skills. The researcher recommends that this be done in a program where the researcher is able to work with the children without hindrance because of the dynamics of the program of which they are a part. The researcher would also like to see such research take place in a program where the music therapist, speech pathologist, and special education teacher can formulate specific objectives for each child together so that each facet of the program can help the child integrate what is learned in all three settings.

The researcher believes that the investigation of the use of a music program to build language skills should be carried out for a period of time no less than six months, three times a week. The researcher should then confer closely with the speech pathologist and special education teacher to see if the training with music transferred to the other two facets of the program, and how what was done in the other program areas transferred into music.

The measurement technique for such an investigation may be similar to the one used in this study, however, as stated as earlier, the test items would need to be more age appropriate. The researcher recommends that a test method similar to the one used in this study be used in future research in place of a standardized test. This is because on the standardized test, only one word is given for each speech sound for each position of the sound (initial,

medial, and final). This does not afford the opportunity for the researcher to observe how consistent the language behavior being observed becomes as the investigation progresses.

The researcher recommends that a more representative sample of preschool language delayed children be included in future studies for the sake of validity. The pool from which subjects are drawn needs to be larger, and should include children from various cultural, racial, and socioeconomic backgrounds.

Finally, the researcher recommends that a high quality audio or video tape and tape recorder be used. This would allow for accurate judgements to be made in terms of the pronunciation of speech sounds. APPENDIX A

WORDS USED FOR PRELIMINARY INVESTIGATION

•

Subject J	
<u>k</u>	g
key	go
king	give
cup	gift
cake	garden
cover	gate
can	game
candy	gorilla
kite	

<u>Subject A</u>

<u>a</u>	. <u> </u>	<u> </u>		Ē	
angel		boat		ear	
apron		doe		hear	
cave		bow		feet	
day		no		easy	
say		go		deer	
bay		note		tear	
pay		уо-уо		eat	
acorn		sew		near	
د <u>م</u>		0		с е	
apple	sand	fog	log	egg	head
after	band	dog	knob	leg	wet
man	can	ox	hog	bed	peg
laugh	pan	jog	knot	beg	elephant

Words for Trial Session No. 1 (Cont'd.)

<u>Subject A</u>

<u>ī</u>		ū	
tie	bike	tube	moose
high	ice	move	new
kite	pine	juice	dew
night	find	two	unicorn
υ <u>i</u>		<u>u</u>	
bit	mitten	up	mud
igloo	kit	tub	sun
dip	fit	cup	hug
gift	inch	supper	puppy

Subjects E, C, and S

boat	(b/0)	game	(g/ā)	pie	(p/i)
bib	(b/i)	juice	(j/u)	rest	(r/e)
bat	(b/a)	jump	(j/u)	run	(r/u)
beg	(b/e)	kite	(k/i)	see	(s/e)
bye	(b/i)	key	(k/ē)	such	(s/u)
can	(c/a)	laugh	(1/a)	tub	(t/u)
cup	(c/u)	log	(1/0)	two	(t/u)
dog	(d/ŏ)	man	(m/a)	water	(₩/0)
day	(d/\overline{a})	mop	(m/o)	wet	(w/e)
fan	(f/a)	no	(n/o)	уо-уо	(y/ō)
fog	(f/o)	name	(n/a)	yarn	(y/o)
feet	(f/e)	pencil	(p/e)	z00	(z/u)

Words for Trial Session No. 1 (Cont'd)

Subjects E, C, and S zebra (z/e) yellow pink green purple orange blue red (Consonant Blends, Initial and Final Position Consonants and Vowel o)

blue	(bl)	saddle	(dl)
blouse	(bl)	princess	(pr)
bird	(b)	prune	(pr)
bend	(b)	please	(pl)
glove	(gl)	play	(pl)
glue	(gl)	quick	(qu)
guppy	(g)	quake	(qu)
grape	(gr)	stay	(st)
clover	(cl)	stomach	(st)
crab	(cr)	cob	(ŏ/b)
clay	(cl)	jog	(o/g)
crib	(cr)	strap	(str)
drop	(dr)	splinter	(spl)
drift	(dr)	splash	(spl)
draft	(dr)	stripe	(str)
dream	(dr)	street	(str)
freeze	(fr)	tray	(tr)
flower	(fl)	tree	(tr)
flew	(fl)	wrap	(wr)
apple	(pl)	wrench	(wr)

94 Words for Trial Session No. 3

<u>Subject</u> J

/k/ Initial Position	<u>/g/ Initial Position</u>
cup	give
cake	gave
cave	gulp
curve	guy
cane	gone

<u>Subject A</u> U U U U U Vowels - /a/, /e/, /i/, /o/, /u/

wax	box
cub	fun
win	can
fox	pin
web	bed

Subject E

/g/ Final Position	/d/ Final Position	/y/ Final Position
log	sand	day
dog	band	say
sag	hand	pie
mug	find	bye
hug	pond	boy

Words for Trial Session No. 3 (Cont'd.)

Subject C

<pre>/t/ Final Position</pre>	<pre>/b/ Final Position</pre>	<u>/g/ Final Position</u>
wait	web	log
wet	cub	dog
bonnet	tub	sag
cat	cab	mug
nut	cob	hug

Subject S

<u>/w/</u>	Initial	Position
	wash	
	what	
	wate	r
	web	
	won	

APPENDIX B

WORD LISTS USED FOR TRIAL WMASSP TESTING
<u>Subject J</u>

/k/ Initial Position	<u>/g/ Initial Position</u>
cake	gate
car	girl
cat	goat
kite	guitar
COW	goose

<u>Subject A</u>				
/a/	/e/	/i/	/0/	/u/
hand	bed	fish	log	rug
rabbit	nest	window	dog	sun
wagon	net	pig	socks	drum
fan	shell	ship	knob	nut
cat	web	hill	fox	duck

Subject E

<pre>/g/ Final Position</pre>	/d/ Final Position	<u>/y/ Final Position</u>
log	hand	x-ray
dog	yard	boy
jug	road	pie
pig	slide	tie
rug	bed	еуе

Words for WMASSP (Trial Session) Cont'd.

Subject C

/g/ Final Position	/b/ Final Position	<pre>/t/ Final Position</pre>
log	knob	net
dog	web	nut
rug	bib	feet
pig	cub	goat
jug	cab	heart

<u>Subject S</u>

/w/ Initial Position
whale
web
window
wagon
watch

APPENDIX C

WORD LISTS USED FOR WMASSP PRETEST AND POSTTEST

Subject J

/k/ Initial Position	<u>/g/ Initial Position</u>
cup	gate*
cub	guitar*
car	goat*
candle	goose
COW	girl

Subject C

/g/ Final Position	/b/ Final Position
bug	cab
pig	knob
log	web
dog	cub
rug	bib

Subject **C**

/w/ Initial Position

worm
web
window
watch
wagon

* These words may be more difficult for this child because the /t/ sound is often used in substitution of the initial /k/ sound (i.e., "car" pronounced "tar"). Since the /k/ sound is being focused on, the presence of the /t/ sound in the /g/ sound words may be confusing. APPENDIX D

SONGS USED FOR PRELIMINARY INVESTIGATION

SESSION BEGINNING SONG

"MUSIC TIME IS HERE AGAIN"









SESSION CLOSING SONG

"STEP RIGHT UP AND PLAY YOUR OWN SONG"



SONGS FOR SUBJECT J





SONG FOR SUBJECT A

"MARY'S MESS"



SONG FOR SUBJECTS E AND C

"THE BAG"



SONGS FOR SUBJECT E

"DAY GOES BY"



"SAND"



SONGS FOR SUBJECT C



"MY COAT"

"CORN ON THE COB"



SONGS FOR SUBJECT S

"THE COWBOY"









SONGS FOR SUBJECT S CONTINUED....



"WATER"

APPENDIX E

-

SONGS USED FOR INSTRUCTIONAL SESSIONS

SESSION BEGINNING SONG

"MUSIC TIME IS HERE AGAIN"





F







SESSION CLOSING SONG

"STEP RIGHT UP AND PLAY YOUR OWN SONG"



SONGS FOR SUBJECT J





109 S FOR SUDIN SONGS FOR SUBJECT C



"THE BAG"

"CORN ON THE COB"



SONGS FOR SUBJECT S

"THE COWBOY"











SONGS FOR SUBJECT S













SONGS FOR SUBJECT S CONTINUED....



"WATER"

APPENDIX F

SCORING DIRECTIONS AND EXAMPLE OF A PRETEST AND POSTTEST SCORING SHEET

PRETEST AND POSTTEST SCORING DETAILS

There is a pretest and posttest scoring sheet for each child (Subjects J, C, and S) in this envelope. In th eupper right hand corner of each scoring sheet, there is a counter number. If you have a counter on your tape player, this is the place on the tape where the testing session begins for that subject. The words on the socring sheet are given in the exact order in which the flash card illustrations were presented to the child. A score of one is to be given if the child did not attempt to say a word, or gave the improper name for the illustrated object. A score of two is to be given if the child attempted to say the correct word as illustrated, but the targeted sound was not produced or was produced incorrectly. A score of three is to be given if the child said the correct word and pronounced the targeted sound correctly. Thank you very much for doing this!

Counter #28

PRETEST SCORING SHEET

<u>Subject J</u>

Initial /k/ sound

Circle the score:

cub	1	2	3
cup	1	2	3
car	1	2	3
COW	1	2	3
candle	1	2	3

Initial /g/ sound

Circle the score:			
guitar	1	2	3
girl	1	2	3
gate	1	2	3
goat	1	2	3
goose	1	2	3

POSTTEST SCORING SHEET

Subject J

Initial /k/ sound

Circle the score:

cub	1	2	3
cup	1	2	3
car	1	2	3
COW	1	2	3
candle	1	2	3

Initial /g/ sound

Circle the score:			
guitar	1	2	3
girl	1	2	3
gate	1	2	3
goat	1	2	3
goose	1	2	3

APPENDIX G

RAW DATA SCORES FOR SUBJECTS J, C, AND S

RAW DATA SCORES FOR SUBJECTS J, C, AND S

<u>Subject</u> J

<u>Words</u>	Pretest Scores		Posttest Scores	
	<u>Obs.#1</u>	Obs#2	<u>Obs.#1</u>	<u>Obs.#2</u>
cub	2.00	2.00	2.00	2.00
car	2.00	2.00	3.00	2.00
COW	3.00	3.00	2.50	3.00
candle	3.00	3.00	3.00	3.00
guitar	2.00	2.00	2.00	2.00
girl	2.00	2.00	3.00	2.00
gate	1.00	3.00	3.00	3.00
goat	3.00	2.00	2.50	2.00
goose	1.00	1.00	3.00	3.00
	Su	bject C		
cub	1.00	1.00	1.00	2.00
cab	1.00	1.00		
web	1.00	1.00	1.00	1.00
knob	1.00	1.00	1.00	1.00
bib	1.00	1.00	2.50	3.00
bug	2.00	1.00		
log	1.00	1.00	1.00	2.00
dog	2.00	3.00	2.00	2.00
rug	1.00	1.00	2.00	2.00
pig	2.00	2.00	2.00	2.00
	Su	bject S		
web	2.00	2.00	2.00	2.00
worm	2.00	2.00	2.00	2.00
window	2.00	2.00	2.50	2.00
wagon	2.00	2.00	2.00	2.00
watch	2.00	2.00	2.00	2.00

APPENDIX H

GLOSSARY

GLOSSARY

Fricative - A term used in the phonetic classification of consonant sounds on the basis of manner of articulation. It refers to sounds made when two organs come so close together that the air moving between them produces audible friction. There is no complete closure between the organs, but a stricture, or narrowing (i.e., voiced and voiceless in fin /f/, van /v/, thin, / θ /, this / /, sic /s/, zoo /z/, ship / /, measure / /, hoop /h/.

Holaphrase - A term used in language acquisition to refer to a grammatically unstructured utterance; usually consisting of a single word, which is characteristic of the earliest stage of language learning in children. An example of holaphrastic utterances would be "dada," "allgone," "more," and "there."

Homorganic - A general term in the phonetic classification of speech sounds, referring to sounds which are produced at the same place of articulation, such as /p/, /b/, and /m/.

Labial - A general term in the phonetic classification of speech sounds on the basis of their place of articulation. It refers to the active use of one lip (as in labio-dental sounds such as /f/) or both lips (as in bilabial consonants, such as /b/ or rounded vowels, such as /u/). The lips are actively involved in labial sounds.

Paradigmatic - In psycholinguistics, the term refers to a class of associative responses which people make when hearing a stimulus word, viz. those which fall into the same word-class as the stimulus. For example: girl following boy, white following black. The syntagmatic association, however, involves a change of word-class in the response.

Phoneme - The minimal unit in the sound system of a language.

Semantics - A major branch of linguistics devoted to the study of meaning in language.

Specific language impairment - refers to children who have a normal performance IQ delayed language form and have no other impairments.

Stop - A term used in the phonetic classification of speech sounds on the basis of their manner of articulation. It refers to any sound which is produced by a complete closure of the vocal tract.

Syntagmatic - In psycholinguistics, the term is used to refer to a class of associative responses which people make when hearing a stimulus word, vis., those which fall into a different word-class from the stimulus in that the response word could precede or follow the stimulus word in a sentence. Examples of syntagmatic responses or associations would be drive following car, sheep following black. The syntagmatic/paradigmatic shift refers to a change in the patterns of response noted in children around age seven, when the earlier pattern (primarily syntagmatic associations) develop into the more adult-like pattern primarily involving paradigmatic associations.

Syntax - A traditional term for the study of the rules governing the way words are combined to form sentences in a language.

System - In its most general sense, the term refers to a network of patterned relationships constituting the organization of language.

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