

THE USE OF MUSIC THERAPY TO INCREASE LANGUAGE AGE  
IN INSTITUTIONALIZED MENTALLY RETARDED  
FEMALE ADULTS

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A THESIS

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To the Provost of the Graduate School:

I am submitting herewith a thesis written by Janet L. Jones entitled "The Use of Music Therapy to Increase Language Age in Institutionalized Mentally Retarded Female Adults." I have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts, with a major in Music Therapy.

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ABSTRACT

The purposes of this study were to develop a protocol which music therapists might utilize in increasing language skills in the mentally retarded and to compare the effectiveness of this protocol with traditional speech/language therapy.

Twenty-two mentally retarded female adults were randomly assigned to a control group or an experimental group. The control group received traditional speech/language therapy and the experimental group received a music therapy adaptation of traditional speech/language therapy.

The dependent variable was the Preschool Language Scale, and an Analysis of Covariance of the posttest scores with the pretest as covariate revealed no significant difference between posttest scores of the experimental and control groups.

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## CHAPTER I

### Introduction

Language is a multifaceted component of human behavior. From the first few days of life to the end of life, people rely on language in order to interact with the environment. Language is used for survival, to control behavior, to extend beyond the bounds of physical capabilities and experiences, to develop self-concept, and to internalize the standards of our society. "Language is our most useful tool in learning and serves as the most important element in transmittal of information about our past, present, and future growth" (Rousey, 1984, p. 25-26).

Many mentally retarded clients experience language deficits and consequently can not adequately exchange information with those in their environment. There are many names given to language deficits including language delay, speech handicap, speech impediment, and language disorder. It is important to make a distinction between the terms 'language' and 'speech'. Speech and language are considered two separate entities, but closely linked in the general development of a child (Rousey, 1984). Language "refers to the words, their pronunciation, and the method of combining them for use and understanding by others" (Kaluger and

Kaluger, 1984, p. 195). The ability to speak is only one aspect of language, and is less important, developmentally, than the ability to understand language and to use it as a thought process" (Cooper, et al., 1978, p. 20). Nonverbal aspects of language include facial expressions and body language.

The word 'speech' refers to "the development of units of speech sounds, the phonemes, and the maturation and proper articulation of these sounds" (Kaluger and Kaluger, 1984, p. 195). Language and speech are two components of the broad category of the total communication process consisting of four interacting phases: listening, speaking, reading, and writing (Blumberg, 1975).

Language has been further divided into three components: inner language, receptive language, and expressive language. Inner language or inner speech is a term coined by Vygotsky (1962), that denotes the language of the mind, or the private speech we use only for our own thinking and reasoning. Receptive language is the ability to understand what has been spoken or non-verbally conveyed, and expressive language is producing meaningful sounds and utterances.

The use of music therapy with language delayed mentally retarded clients has been of interest to this author for several years. After working as a speech therapist

technician with mentally retarded clients and then beginning a music therapy practice with mentally retarded clients, the potential for combining the two fields became quite evident.

There has been an interest in this area by a few music therapists for some time, as the following review of literature indicates. Music therapy has been used with clients to improve articulation errors, teach language concepts, improve functional speech skills, and decrease rate of speech. Since this has been done by this author only in clinical practice, there is a need to study scientifically the methods used in order to verify, change, or improve them.

#### Purposes of the Study

The purposes of this study were to develop a protocol which music therapists might utilize in increasing language skills in the mentally retarded and to compare the effectiveness of this protocol with traditional speech/language techniques.

## CHAPTER II

### Review of the Literature

#### Normal Language Development

An understanding of normal language development is important if music therapists are to assist in improving language skills in mentally retarded clients. Many theories have been proposed concerning the manner and sequence in which language is acquired. The first theories to be considered will be those of acquisition.

The three major theoretical positions on language acquisition are behavioral, nativistic, and cognitive. The behaviorists believe that language is learned through operant conditioning (Kaluger and Kaluger, 1984). Language behavior is shaped by parents and others who selectively reinforce words until the young child generalizes language rules. According to Havighurst (1972) there is controversy over whether the first sounds uttered by an infant are purposeful or accidental. Both sides of the argument agree, however, that infants emit speech sounds without learning them and that people around them teach them to attach meaning to the sounds.

The second theory is the nativistic or innate view. Those who support this view believe that the human brain is

programmed for language development and they cite three major types of evidence for this:

- (a) A high correlation between developmental stages of myelinization in the central nervous system and developmental stages of language acquisition;
- (b) Structural differences between humans and other animals in primary sensory areas, secondary association areas, and the tertiary association areas of the cortex with their connections to other areas of the cortex and limbic system; and
- (c) The relative ease of humans in performing intermodality and transfer tasks compared to the comparative difficulty (indeed virtual impossibility) for nonhumans (Muma, 1978, p. 154).

Other interesting evidence supporting this view is the finding that children in vastly different cultures with vastly different languages learn their respective language in much the same way and in much the same sequence (Muma, 1978).

The third view is the cognitive view which holds that language comes from intellectual development. According to Piagetian theory, a child must first be capable of mental representations before utterances can be considered language (Clark, 1978). Muma (1978) states:

Language and verbal behavior are first and foremost cognitive behaviors. Our verbal behavior is determined by what we know, by what we perceive and think in a given circumstance, and by the cognitive operations in productions and comprehension. ...Anyone who undertakes language assessment for intervention must deal with cognitive systems (p. 35).

Table 1 provides a summary of the major components of the three acquisition theories:

Table 1

Summary of Language Acquisition Theories

---

<u>Behavioristic</u>	<u>Nativistic</u>	<u>Cognitive</u>
1. Environmental orientation	1. Hereditary orientation	1. Developmental orientation
2. All learning is based on a few basic principles	2. Concern with generative linguistics	2. Rooted in European psychological and developmental thought
3. Language development is part of a universal learning system	3. Emphasis on similarity of languages	3. Concern with development of perceptions and relation between language and cognition

4. Language mechanisms are simple	4. Goal of language study is development of language theory	4. Continuous interaction between hereditary structure of organism and input from environment.
5. Language is an acquired function	5. Linguistic structuring and acquisition are innate	5. Concern with linguistic ontogeny
6. Interest in language are an observable behavior	6. Concern with question of internalized competence	6. Belief that speech and thought influence and reflect each other

(Adapted from Kaluger and Kaluger, p. 196)

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Another category of theories are those concerning the sequence in which language is learned. In the overall development of language, it is generally assumed that comprehension preceded expression (Rousey, 1984). True linguistic development, referred to as linguistic communication, begins at about two years of age (Kaluger and Kaluger, 1984). Prior to that, an infant goes through a prelinguistic development that consists of five stages: reflexive vocalization, cooing, babbling, lalling, and

echolalia. The reflexive period consists of nondescript sounds or speechlessness and involves unindifferentiated crying. After about one month, the infant is able to make different crying sounds to indicate different feelings such as hunger, pain, and happiness. At about six or seven weeks the infant begins cooing, which is a vocalization consisting of squealing, gurgling sounds lasting fifteen to twenty seconds.

Babbling is an extension of cooing and begins about the third or fourth month. Babbling sounds are made for the infant's own enjoyment and consist of vowel sounds with occasional consonants. Lalling, or imperfect imitation, usually begins about the sixth or seventh month and is characterized by infants repeating sounds they have heard in their environment. This is the first stage when hearing and sound production are associated. During lalling infants begin to combine vowels and consonants into repetitive syllables such as 'ba-ba-ba'.

By nine or ten months, the infant begins to reproduce words more accurately, although there is no comprehension of the sounds they are making. During this stage, termed echolalia, some children have the ability to echo sound combinations and speech inflections that have all the mannerisms of adult speech. This is known as jargon.

True speech happens when a child intentionally and correctly uses a word and anticipates a response. This usually begins between twelve and eighteen months, and by the age of eighteen months a child's vocabulary consists of about 50 words. Tables 2 and 3 provide a summary of speech production (expression) and perception (reception) for the first year.

Table 2

Speech Production and Perception for the First Year

PRODUCTION	PERCEPTION
Stage I-Birth Crying-the basic pattern is due to the state of the infant, i.e. anger or pain	Stage I-Birth Responds to sounds and vocalizes
Stage II-at 3 weeks Pseudo cry and non-cry utterances. There are a variety of temporal and frequency patterns.	Stage II-at 2 weeks Distinguishes between voices and other sounds. Voice of caretaker will cause infant to stop crying.

(table continues)

Stage III-At 4 to 5 months  
 Babbling and the production of intonated utterances. Utterances become increasingly more speech-like until first year.

Stage IV-At 9 to 12 months. Production of patterned speech, i.e. words.

At 6 to 8 years-  
 Correct articulation of the speech sounds of the language  
 (Menyuk, p. 15)

Stage III-At 2 to 4 months  
 Discrimination between angry and friendly, familiar and unfamiliar, male and female voices, and temporal aspects of the signal.

Stage IV-At 5 to 6 months  
 Increasing evidence of sensitivity to intonation and rhythm. Discrimination of intonational patterns and possibly features.

At 2 years-discrimination between all possible minimal pairs of words.

Table 3

Vocal Development, Birth Through Eight Years

AGE	VOCALIZATIONS
Birth	Cry and other physiological sounds
1-2 Months	Cooing and sounds as well as cry
3-6 Months	Babbling as well as cooing
9-14 Months	First words as well as babbling
18-24 Months	First sentences as well as words
3-4 Years	Use of all basic syntactic structures
4-8 Years	Correct articulation of all speech sounds in context

(From Menyuk, 1972, p. 11)

Cooper, Moodley, and Reynell, (1978) have suggested that language develops in the following sequence:

1. Attention Control: This stage consists of 6 phases ranging from extreme distractibility, which is normal in the first year of life, to a mature school entry level where integrated attention is well established and well sustained.

2. Concept Formation: This stage begins with awareness of permanence of objects about 9 or 10 months and includes the skills of one-to-one matching, classification, size and quantity discrimination. Also included in this stage is an understanding of positional concepts such as

prepositions at the purely perceptual level. This usually begins soon after 12 months.

3. Symbolic Understanding: Included in this stage are the skills of object recognition, large doll-play, small doll-play, role playing, recognition of two-dimensional symbols, and understanding and use of gestures.

4. Verbal Comprehension: Understanding verbal labels and relating two named objects are the skills included in this stage.

5. Expressive Language: In this final stage, language is used as communication, and language is used as an intellectual process in planning, guiding, and integrating practical activities.

The important years for language development are between 1 1/2 and 4 1/2, as there is very rapid language development during these years. By 4 1/2 years, most children have fully established language which can be internalized as a thinking process. It is easier to influence language development during these three years of development than it is in later years, as other intellectual processes may have already outstripped the deviant language and the whole has become skewed (Cooper et al., 1978).

Blumberg (1975) has also studied the normal language acquisition sequence and has suggested eight stages of

language development without suggesting normative ages.

These stages are as follows:

I. Development of Auditory Awareness and Accuracy in Auditory Skills--Included in this stage are: (a) the ability to detect the presence of sound at various levels of intensity and frequency; (b) the ability to direct and sustain attention to sounds; (c) the ability to remember and recall auditory sound patterns; (d) the ability to detect likeness and difference between two or more sounds; (e) the ability to collate a variety of independent sounds to form aural units; and (e) the ability to decode and derive meaning from auditory stimuli.

II. Development of Concrete Factual Information Available for Ready Recall--The tasks in this stage include associating symbols and experience, memory span associated learning, and the ability to integrate new information successfully with previously learned concepts.

III. Concept Development--Included are the concepts of sense, shape, size, space, classifications of objects, functions of objects, etc.

IV. Development of Accurate Verbal Disclosure and Syntax--Included in this stage are proper use of nouns, pronouns, prepositions, conversational speech, labeling emotions, and descriptive sentences.

V. Development of Imagination--Included are the concepts of pretending and sequence closure.

VI. Development of Comprehension--This stage includes the abilities to understand, draw conclusions, select main ideas, separate the relevant from the irrelevant, recall important factual detail, make inferences, and follow and recall sequences of events.

VII. Developing the Ability to Handle Visual Symbolic Language Related Material--In other words, reading.

#### VIII. Writing

Rousey (1984) has identified four factors that affect language and speech acquisition. The first of these is readiness of the child to learn. The second factor involves the physical capacities of the child and can include hearing, intellectual abilities, and neuromuscular or brain integrating problems. Environmental influences constitute the third factor and include child-rearing practices, the amount of positive or negative feedback the child receives from attempts to communicate, and the child's position in the family which could influence the amount of time with the parents available for the child. The final factors in language and speech acquisition are General Criteria. Included here are the ability to understand language, the ability to listen creatively and generalize, and the ability to talk creatively.

### Language Disorders

Four categories of language problems are found in clients who have not developed language normally. These are: (a) disorders of articulation, (b) disorders of fluency, (c) disorders of voice, and (d) disorders of language (Miller, 1982). These disorders may be caused by biological or psychological factors or by a combination of the two.

Articulation disorders are manifested in pronunciation problems. Common errors in articulation include the omission of sounds, the substitution of one sound for another, and the distortion of sounds. The following table indicates the normal sequence of articulation development in children.

Table 4

#### Summary of Articulation Development in Children

AGE	ADEQUATE SPEECH PRODUCTION
18 Months	All vowels
2.5 Years	h,w,hw
3 Years	p,b,m
3.5 Years	t,d,n
4 Years	k,g,ng,j

(table continues)

5 Years	f,v
6 Years	l,r,y,s,z,sh
	ch,zh,th,consonant blends

(From Menyuk, 1972, p. 11)

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The most serious disorder of fluency is stuttering. Much controversy exists concerning the causes and treatment of stuttering. Some of the theories concerning its cause stress psychological, physical, and environmental origins. Voice disorders can involve pitch, quality, and intensity problems and require special training for the therapist whose goal is remediation.

Language disorders range from syntactical errors to the inability to understand words. Common language problems include expressive and receptive aphasia and speech delay. Speech delay is said to have occurred when a child has not developed the appropriate language skills for his\her age. Some specific examples of receptive language delay include the inability to understand the prepositions 'in','on', and 'under'; the inability to understand size and length; the inability to understand the function of objects and the inability to identify body parts. Examples of expressive language delay include the inability to converse in sentences, the inability to repeat digits, the inability to

articulate consonants correctly, and the inability to name items in categories, such as animals.

### Language Assessment

The first step to remediation of language disorders is assessment of language skills. There are many language assessment tools available, one of which is the Preschool Language Scale (PLS) (Zimmerman, Steiner, and Pond, 1979). The PLS is designed to measure the auditory comprehension (receptive language) and verbal ability (expressive ability) of children from one to seven years old. The test consists of forty auditory comprehension items and forty verbal ability items plus an articulation test. Each item falls within one of five categories; sensory discrimination, logical thinking, grammar and vocabulary, memory and attention span, temporal/spatial relations, and self-image. It is easy to administer and requires few materials. In scoring the test, the clinician can arrive at a language age for the child based on the correct number of responses.

Another assessment instrument, the Sequenced Inventory of Communication Development (SICD) (Hedrick & Tobin, 1975), consists of a receptive scale and an expressive scale. Each scale measures from 4 to 48 months, and scoring relies on parental observations as well as clinician-administered test items. The test comes with a kit of materials that include plastic toys, pictures, and differently pitched bells.

The Boehm Test of Basic Concepts (Boehm, 1967) is strictly a receptive test based on the areas of comprehension of space, quantity, and time concepts. It consists of 50 sequentially pictured items and the subject points to the correct picture from a group of three. It is standardized on children from kindergarten through third grade and is easily administered in a short amount of time.

The Test for Auditory Comprehension of Language, or TACL, (Carrow, 1973) is another receptive scale that measures language age from 3 months to 7 years. It is administered in much the same manner as the Boehm, and it tests for understanding of grammatical functions such as plurals, possessives, and superlatives. It is easy to administer and score and may be given in a short amount of time.

Some of the commonly used tests for articulation skills include the Goldman-Fristoe Test of Articulation (Goldman & Fristoe, 1969), the Templin-Darley Tests of Articulation (Templin & Darley, 1960), and the Fisher-Logemann Test of Articulation (Fisher & Logemann, 1971). These are usually given by a speech or language clinician and not by other professionals. The first two tests of this group assess phoneme production in all three positions of a word: initial, medial, and final. The Templin-Darley is considered by Compton (1980) to be the most comprehensive and versatile

set of articulation tests available and is used for both children and adults.

Several music therapy assessments also contain language components. Included among these are the Music Therapy Assessment Profile (MTAP) (Michel & Rohrbacher, 1982), the Westplate Auditory Perceptual Tool Assessment in Music (APT-AIM) (Westplate, 1978), and the Music-Perception Assessment of Cognitive Development (M-PACD) (Rider, 1981).

The two components of the MTAP that assess language skills are the Communication and Cognition sections. There are 33 items in the communication scale and 33 items in the cognitive scale. Both begin at 0 months, and they test skills through 23 months and 27 months, respectively. The test items can be administered in a variety of ways, as is characteristic of developmental assessments.

The APT-AIM, developed by Westplate (1978) assesses auditory skills from birth through 6 years. It consists of 50 test items and requires some verbal skills of the subject. The procedure for each test item is thoroughly explained and requires the use of musical instruments.

Rider's M-PACD (1981) is based on Piagetian theories of cognitive development and is designed for individual assessment of children and adults with mental ages between 0 months and 15 years. It requires little or no musical background on the part of the administrator. There are 20

test items, and a collection of various instruments and other objects is necessary for administering the test.

### Language Therapy

Three major approaches to language therapy have been identified by Snow, Midkiff-Borunda, Small, & Proctor (1984): behavioristic, sociolinguistic, and psycholinguistic. In the behavioristic approach, the client is viewed as a positive learner, and the clinician's role is to structure language therapy with predetermined stimuli, responses, and reinforcements.

The psycholinguistic orientation incorporates both syntactic and semantic analyses. The therapist views the client as an active learner, and the clinician's role is to discover the individual's learning strategies through interaction and to facilitate language growth on that basis.

The sociolinguistic approach stresses the interactional perspective in language therapy. The clinical procedures are 'process-oriented' rather than product oriented, and they view the conversation, itself, as the language learning context. The following table summarizes the clinical approaches and gives specific examples for each view.

Table 5

Overview of Clinical Procedures

APPROACH	EXAMPLE	CLINICAL PHILOSOPHY
Behavioral	Stimulus--picture of boy with one foot in front of other Response--"the boy is walking" Reinforcement-- gets a happy face Programmed instruction: Examples: Distar, Fokes Sentence builder, Language Master	*elicited imitation *drill with elaborate extrinsic reinforcement *one communication partner *behaviorally based *product oriented *finite length of interaction (table continues)

Psycholinguis- tic	Stimulus--windup doll walking across table	*task at cognitive level of child *elicited
	Response--"boy walking"	imitation is meaning based
	Reinforcement-- "Yeah, the boy is walking"	*reinforcement is linguistic feedback
		*one or more communication partners
		*clinician/child in control of stimulus
		*meaning based *process/product oriented
		(table continues)

Sociolinguistic	Child--chooses windup toy to play with	*task at cognitive and social level of child
	Clinician--holds windup doll ready to go	*language models meaning based and functionally based
	Child--"walk doll" (duck, monkey, dog, etc.)	*reinforcement is intrinsic to the conversation
	Clinician--lets doll walk and says "the doll is	itself *stimulus chosen by child
	walking	*turn taking in
	Child--"walk more"	control of
	Clinician--	stimulus
	acknowledges	*socially based
	child's request	*process oriented
	for action by	*role exchange-
	winding up doll	expressive focus
	again and expands	*one or more
	utterance	communication
		partners
		*infinite length
		of interaction

(Adapted from Snow et al., 1980, p. 70)

Numerous authors have suggested programs for language remediation. (Blumberg, 1975, Cooper, Moodley, & Reynell, 1984, Rousey, 1984, Gordon, Ryan, & Shilo, 1972, Cole & Cole, 1983, and Adler, Nolan, Sinclair, Ford, & Wallace, 1980). A summary of some of the guidelines suggested by these and other authors follows.

Rousey (1984) espouses a developmental approach to language therapy in which the goal is to fit speech and language into the picture of the whole child in terms of mental, emotional, and physical growth and development. The Oklahoma State Department of Education (1972) has suggested that the ability to use adequate speech in all social situations is the ultimate goal in language therapy for the mentally retarded and that improvement of language and communication is more important than correction of certain speech sounds. They have also suggested the following guidelines for language therapy with the mentally retarded:

1. Observe what words each child needs to know in order to improve his oral communication.
2. Make child's attempt at speech rewarding and pleasurable.
3. Teach speech and language in association with child's environment.
4. Encourage any attempt or effort which child makes to communicate.

5. Develop speech in relation to social phrases and the child's needs.
6. Do whatever is possible to promote the child's feeling of confidence which will in turn help in stimulating speech.
7. Teacher should accept small gains, should provide classroom atmosphere which encourages children to participate and which is understanding and helpful.
8. Discourage parents from correcting speech sounds.
9. Make every effort to understand the child's speech in order to motivate him to speak.
10. The feelings of the child in the group should be accepted even if his behavior is not.

(Oklahoma Department of Education 1972, p. 30-31)

Cole & Cole (1980) have suggested four techniques the language therapist needs to know when providing day to day training: modeling, expansion, correction, and branching. Modeling takes place when the therapist presents verbatim to the client the actual language construction desired. This can be used to initiate or elicit a response in the initial stages of therapy.

Expansion is used to enlarge a client's response in conversation. For example, if the client says, "Dog

running." the therapist would say, "Yes, the dog is running." Correction is not as effective as once assumed and involves the therapist saying to the client, "No, we say...."

The final technique suggested by Cole & Cole is branching. This involves breaking down a task into small steps and presenting each step to the client separately before presenting the steps together. An example of this would be to teach the concepts of 'on' and 'in' separately before teaching them together.

Snow et al. (1980) have identified three desirable features which facilitate language development through interaction between therapist and client. The first is that the language used be communicatively useful for the client. The second is that the therapist's utterances are on the same topic as the client's own utterances. This is known as semantic contingency. Negotiation of meaning is the third feature and involves the therapist asking for clarification of incorrect or unintelligible utterances rather than correcting them. The fourth feature is simple imitation.

One of the problems in language therapy is generalization from the therapy setting to the natural environment. Hughes (1985) has identified the following principles for facilitating generalization:

1. Choose functional targets. As language targets, select behaviors that will be useful (i.e. functional) for the client in many natural environments. These will have a high probability of generalizing because they will meet a natural community of reinforcement.
2. Teach enough examples. Do not expect generalization after teaching only one example to criterion. The necessary range of examples may vary from 10 to 200, depending on the individual and the behavior.
3. Choose the best examples to teach. Think about the components of the generalized behavior that is the goal and pick examples that include those components.
4. Teach a few examples simultaneously. Try one or two trials with one example, then one or two with another example. Avoid massed trial training with only one example.
5. Teach loosely. Loosen the control over stimuli in the teaching sessions and the consequent events following opportunities to respond. Decrease the structure of the teaching situations to make them more similar to natural environments.

6. Vary the consequences. Make the reinforcement schedule and the reinforcers similar to the variety of consequences that occur in the natural environment. Work toward a thin, intermittent schedule of reinforcement, or delay it to increase the chance that the behavior will be maintained after treatment has ceased.

7. Program the natural environment. Restructure some aspects of the natural environment in such a way as to support the target behavior. This can involve increasing the opportunities for the behavior to occur as well as increasing the probability that the behavior will be effective (reinforced) when it does occur.

8. Teach self-monitoring. Use self-monitoring and verbal mediation where possible so that the client becomes both a stimulus for and a reinforcer of the target behavior. Teach clients to observe and report accurately their performance on the language targets (Hughes, 1985, p. 155).

Of great interest is the amount of language therapy literature suggesting the use of music activities to develop specific language skills. Authors who have recommended music activities include Cole & Cole (1980), Blumberg (1975), Gordon et al. (1972), the Oklahoma

Department of Education (1972), Dunn, Horton, & Smith (1968), and Strong (1983). In the work of Adler et al. (1980), numerous music activities are prescribed for a large variety of skills to be implemented by either a movement therapist, a special educator, or a speech clinician.

### Music Therapy and Language Therapy

A review of the music therapy literature has revealed a relative small amount of research concerning the use of music therapy with language delayed clients. In a study concerning the diagnostic uses of music in special education, Solomon, (1980) reported four emerging themes:

1. Music was an integral part of the pioneering attempts to educate and train handicapped children.
2. Singing has been used to involve the nonspeaking child in speech, to improve breathing, and develop proper articulation.
3. Before the invention of sophisticated audiology equipment, much diagnostic work in the special education classroom involved music.
4. The use of music in education of the deaf is not new. In fact, it can be traced to the early 19th century.

Walker (1972) reported that the use of music and related audio-visual stimuli paired with appropriate verbal stimuli facilitated the learning of 10 specific speech sounds and increased the quantity of speech for 6

institutionalized mentally retarded males. In a similar study, Talkington and Hall (1970) concluded that verbal production as measured by echoic responses can be increased through the use of musical activity reinforcers.

Pirtle and Seaton (1973) used structured musical experiences to teach musical concepts and concluded that music experiences aid children in developing concepts that are essential to the development of other concepts. They also concluded:

The structural approach to music may be the partial answer to help the neurologically handicapped child attend to auditory stimuli; associate sound with experience; retain sound sequence; differentiate between sounds; and develop listening skills such as auditory memory, ability to follow directions, and ability to understand the spoken word. (p. 300)

In a single subject case study, Deutch and Parks (1978) showed that the use of contingent preferred music was effective in reducing inappropriate speech and increasing appropriate speech. Seybold (1971) worked with eight language delayed preschool children and found that music therapy was more effective than traditional speech therapy in developing spontaneous speech as measured by the Houston Test for Expressive Language.

Murphy and Simons (1958) reported an observed improvement in 5 young girls' speech intelligibility, voice volume, speech mechanism motility, pitch and variety, amount of talking, ease of voluntary speaking, and attitudes toward self, the therapist, the group and activities of the group. The improvement was attributed to a music therapy program that included singing, dancing, listening, and playing instruments.

Lathom, Edson, and Toombs (1965) reported the concurrent use of music and speech therapy to improve articulation and language development in a mentally retarded 8 1/2 year old. In a similar case study, Samanski (1977) described a program in which a speech pathologist worked with a recreation\music counselor to teach signs, stimulate sign language, and develop speech through the use of singing, moving, and playing.

In the conclusion of their article concerning music for the child with speech limitations, Breinholt and Schoepfle (1960) state:

Through many and varied rich music experiences, the child with speech limitation may be helped not only with his specific difficulties in speech but the problems that are common to all children. As he grows and develops-emotionally, physically, socially, intellectually, and spiritually-he is

helped to face his immediate problems. Music is one way through which he may become stronger as a person and thus better able to adjust to frustrating experiences which so frequently accompany speech limitation. Music and its many avenues not only provide these experiences but can also develop a child's aesthetic awareness of the world in which he lives and his relation to it (p. 52).

In summary, there is much literature available to those seeking information concerning language development, assessment, and remediation. There is a deficit, however, in the amount of literature dealing with specific methods for increasing language skills in mentally retarded clients through music therapy. Although several researchers have reported improved language skills through a variety of techniques, few have compared music therapy techniques with traditional speech/language techniques, and few have offered unique methods and music therapy activities.

#### Statement of the Problem

The problem addressed in this study was to ascertain whether the development of a specific music therapy protocol for improving expressive and receptive language skills in mentally retarded clients was more effective than traditional speech/language therapy techniques.

### Null Hypothesis

The following null hypotheses were tested in this study:

H<sub>0</sub>1: There will be no significant difference between Auditory Comprehension scores on the Preschool Language Scale for the experimental (music therapy) and control (language therapy) groups.

H<sub>0</sub>2: There will be no significant difference between Verbal Ability scores on the Preschool Language Scale for the experimental (music therapy) and the control (language therapy) groups.

H<sub>0</sub>3: There will be no significant difference between the total number of items scored correctly on the Preschool Language Scale relative to the twenty-one items emphasized for the experimental (music therapy) and control (language therapy) groups.

## CHAPTER III

### Method

#### Subjects

Subjects for this study included 22 mentally retarded female adults residing at Denton State School. They ranged in age from 25 to 45 years with a mean age of 33.5. Five of the subjects were classified as profoundly retarded, 12 were classified as severely retarded, and 5 were classified as moderately retarded. Their lengths of institutionalization ranged from 14 to 25 years with a mean of 20.7. All resided on the same dormitory at the beginning of the study.

#### Design

The design of this study was the Pretest-Posttest Control Group Design (Campbell and Stanley, 1963). The control group received traditional language therapy and the experimental group received music therapy in addition to traditional language therapy. Subjects were randomly assigned to the control and experimental groups.

#### Experimenter

The experimenter for this study was a Board Certified Registered Music Therapist whose clinical experience has included 1 1/2 years as a therapist technician in the Communication Therapy Department at Denton State School.

All treatment sessions were conducted by this therapist. The pre- and post-tests were administered by a Certified Speech/Language Pathologist.

#### Setting

The pre- and post-tests were administered individually in the Communication Therapy Clinic in the Education and Training Center on the Denton State School Campus. The treatment sessions were held in the Music Therapy Classroom which is also in the Education and Training Center on campus. Included in the treatment room were chairs, a stereo system, a piano, and a variety of instruments which were stored out of sight.

#### Equipment

The equipment used in the treatment sessions included a guitar, various rhythm instruments, a soprano xylophone, pictures cut from magazines, and pictures from the Peabody Language Development Kit (Dunn, et al., 1968). A complete list of the items used for each activity can be found in Appendix A and Appendix B.

#### Dependent Measure

The dependent variable for this study was the Preschool Language Scale (Zimmerman et al., 1979). A description of its content is found under the "Assessment" section in Chapter II. The test was chosen because of its frequent use at the institution where the study took place and the

experimenter's familiarity with the test and experience in administering it.

Although the test was developed to measure language age in children with normal intelligence between the ages of 1 and 7 years, the experimenter believes the test is appropriate for the purposes of this study. Research has shown a lack of speech and language assessment tools specifically designed for use with the mentally retarded (Pickett and Flynn, 1983). In two separate studies of speech and language assessments used with the mentally retarded, however, the Preschool Language Scale was listed as one being frequently used (Pickett & Flynn, 1983 and Rushakoff & Johnson, 1979).

Test reliability has been established with a median reliability coefficient of .88 (Zimmerman & Steiner, 1970). Concurrent validity studies have shown a high correlation in scores between the Preschool Language Scale and the Peabody Picture Vocabulary Test, (Dunn & Dunn, 1959, Mcloughlin and Gullo, 1984, and Zimmerman and Steiner, 1979) which is also frequently used in assessing speech and language in the mentally retarded. (Pickett & Flynn, 1983 and Rushakoff & Johnson, 1979)

#### Procedure

The procedure consisted of 3 weekly half hour sessions continuing over 7 consecutive weeks with a total of 21

sessions. The sessions for the experimental and control groups were held at 1:00 and 1:30 respectively on Monday, Wednesday, and Friday. The specific tasks emphasized each session were items that a majority of the subjects had performed incorrectly on the pretest. A description of the session plans for the control group the and experimental group can be found in Appendix A and Appendix B, respectively. The control group received traditional language therapy, and the Communication Therapy staff at Denton State School served as consultants for defining specific procedures. The experimental group received music therapy adaptations of traditional language therapy. For each session, both groups worked on identical tasks. All music activities were from original compositions of the experimenter.

### Statistical Analysis

Statistical analysis was conducted using the Statistical Package for the Social Sciences (SPSSX). Analysis of covariance was performed using separate ANCOVA tests to test the first two hypotheses. An ANOVA test was conducted to test the third hypothesis.

## CHAPTER IV

### Results

Twenty-two clients began the study, and all completed the treatment. One client in the control group was not available for posttesting making the total number of clients for the experimental group and control group 11 and 10, respectively.

Tables 6 and 7 present the pretest and posttest scores, measured in months, on the Preschool Language Scale for the control and experimental groups, respectively. Also presented is the total number of items scored correctly on the pretest and posttest relative to the twenty-one items emphasized during treatment.

Table 6

Pretest and Posttest Scores for Auditory Comprehension (AC), Verbal Ability (VA), and Total Number of Correct Items of the Twenty-One Emphasized During Treatment (TOT) for the Control Group

Client #	PRE VA	POST VA	PRE AC	POST AC	PRE TOT	POST TOT
1	33	30	22.5	28.5	3	3
2	40.5	46.5	42	51	7	13
3	36	45	43.5	46.5	9	14
4	54	51	39	46.5	8	13
5	33	37.5	28.5	30	3	4
6	45	42	31.5	31.5	7	8
7	43.5	43.5	30	33	6	9
8	48	48	39	43.5	9	10
9	55.5	51	42	45	11	15
10	37.5	30	33	36	6	6

Table 7

Pretest and Posttest Scores for Auditory Comprehension (AC), Verbal Ability (VA), Total Number of Correct Items of the Twenty-One Emphasized During Treatment (TOT) for the Experimental Group

Client #	PRE VA	POST VA	PRE AC	POST AC	PRE TOT	POST TOT
12	33	33	28.5	28.5	4	5
13	33	33	31.5	31.5	4	5
14	37.5	34.5	27	30	4	6
15	33	45	27	31.5	4	7
16	60	64.5	64.5	70.5	16	19
17	72	69	66	78	17	17
18	30	37.5	27	28.5	2	6
19	36	39	33	30	6	8
20	25.5	19.5	13.5	15	0	0
21	51	46.5	46.5	52.5	12	14
22	43.5	49.5	28.5	31.5	5	7

The means and standard deviations for pretest and posttest scores for each variable are given in the following tables.

Table 8

Means and Standard Deviations for Pretest and Posttest Scores for Auditory Comprehension (AC), Verbal Ability (VA), and Total Number of Correct Items of the Twenty-one Emphasized During Treatment (TOT) for the Control Group

Variable	Mean		Standard Deviation	
	Pre	Post	Pre	Post
AC	35.10	39.15	7.01	8.20
VA	46.60	42.45	8.10	7.72
TOT	6.90	9.50	2.56	4.25

Table 9

Means and Standard Deviations for Pretest and Posttest Scores for Auditory Comprehension (AC), Verbal Ability (VA), and Total Number of Correct Items of the Twenty-One Emphasized During Treatment (TOT) for the Experimental Group

Variable	Mean		Standard Deviation	
	Pre	Post	Pre	Post
AC	35.73	38.86	16.47	19.55
VA	41.32	42.82	14.20	14.38
TOT	6.72	8.54	2.27	5.71

A t-test was conducted on the pretest means for Auditory Comprehension (AC), and Verbal Ability (VA), and total number of correct items relative to the twenty-one items emphasized during treatment (TOT). On none of the variables were the differences in means significant. Table 10 shows the t values for each variable.

Table 10

Two-sample t-Test on Pretest Scores for Auditory Comprehension (AC), Verbal Ability (VA), and Total Number of Correct Items of the Twenty-one Emphasized During Treatment (TOT)

Variable	t Value	Degrees of Freedom
AC	-.41	19
VA	.83	19
TOT	.25	19

Three Analysis of Covariance (ANCOVA) were conducted on the posttest scores using pretest scores as the covariate. No significant difference was found between the control and experimental groups. Table 11 summarizes the results of these three tests.

Table 11

Analysis of Covariance for Auditory Comprehension (AC), Verbal Ability (VA), and Total Number of Correct Items of the Twenty-one Emphasized During Treatment (TOT) Posttest Scores

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<u>AC</u>	<u>df</u>	<u>SS</u>	<u>MS</u>	<u>F</u>	<u>Sig</u>
Between	1	11.94	11.94	.41	.531
Within	18	525.39	29.19		
Total	19	537.33			
<u>VA</u>					
Between	1	5.42	5.42	.69	.416
Within	18	140.61	7.81		
Total	19	146.03			
<u>TOT</u>					
Between	1	3.57	3.57	.94	.345
Within	18	68.28	3.80		
Total	19	71.85			

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Within group differences between pretest and posttest scores were calculated with a t-test and are illustrated in Table 12.

Table 12

T-Test For Within Group Differences Between Pretest and Posttest Scores for Auditory Comprehension (AC), Verbal Ability (VA, and Total Number of Correct Items of The Twenty-one Emphasized During Treatment (TOT)

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	Variable	t Value	Degrees of Freedom	2-tail Prob.
Experimental Group	AC	2.60	10	p < .05
	VA	.89	10	*
	TOT	4.79	10	p < .001
Control Group	AC	4.67	9	p < .002
	VA	-.09	9	*
	TOT	3.61	9	p < .01

\* not significant

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## CHAPTER V

### Summary, Discussion, and Recommendations

The purposes of this study were to test a protocol which music therapists might utilize in increasing language skills in the mentally retarded and to compare the effectiveness of this protocol with traditional speech/language therapy.

Twenty-two mentally retarded female adults were randomly assigned to the experimental group or the control group. Clients in the control group received traditional speech/language therapy for a total of 21 sessions, and the experimental group received a music therapy adaptation of traditional speech/language therapy for a total of 21 sessions. The dependent variable was the Preschool Language Scale, and it was administered as a pretest and a posttest.

Null hypotheses for the study were tested using the Statistical Package for the Social Sciences-SPSSX. Results of the analysis can be summarized as follows:

H<sub>0</sub>1: There will be no significant difference between Auditory Comprehension scores on the Preschool Language Scale for the experimental (music therapy) and control (language therapy) groups.

H<sub>0</sub>2: There will be no significant difference between Verbal Ability scores on the Preschool Language Scale for the experimental (music therapy) and the control (language therapy) groups.

H<sub>0</sub>3: There will be no significant difference between the total number of items scored correctly on the Preschool Language Scale relative to the twenty-one items emphasized during treatment for the experimental (music therapy) and control (language therapy) groups.

These three hypotheses were tested using an Analysis of Covariance (ANCOVA). All three null hypotheses were accepted because no significant differences were found on the Verbal Ability, Auditory Comprehension, and Total for scores the control and experimental groups.

#### Discussion and Additional Recommendations

Several possible explanations for the non-significant differences could be explored. Both groups were conducted by the experimenter (a Board Certified Registered Music Therapist) in order to rule out experimenter differences. Many of the clients participating in the study knew the experimenter to be a music therapist in the facility and those in the control group possibly responded as well as the experimental group because of their anticipation of music activities, a generally enjoyable experience. During the first 10 or 11 sessions, clients in the control group

frequently asked to sing, although they were never told singing or music would take place. After the study was completed and the sessions were no longer being held, several from the control group came to the therapist to ask when they would have "music" again. Sessions for the control and experimental groups were held in the music therapy classroom, and this could account for part of the expectation of the control group to receive music. An interesting observation is that due to the difference in cues (i.e. verbal cues versus musical cues) there were generally more trials per session on any given task for the control group than for the experimental group. For example, speaking the command "Give me the little ball" took less time than singing a verse of "I'm Looking for the Little \_." (See Appendix C.) If each group had been given the same number of trials for each task, a more significant difference in favor of the music condition could possibly have been observed.

The significant difference between pretest and posttest scores for both groups on Auditory Comprehension and not Verbal Ability may suggest that receptive skills are more readily improved than expressive skills. It is noted that although significant improvement was made in both groups on receptive skills, only 6 of the 21 items emphasized during treatment were receptive items.

Another interesting observation is that in both groups most clients were able to perform consistently some tasks correctly during the treatment sessions but were not able to perform them correctly on the posttest. More tasks were performed correctly during treatment than on the posttest for the experimental group than for the control group. One possible explanation for the discrepancy is that different cues for the same task can often elicit different responses. Even though the items were presented as closely as possible to the way they were presented on the pretest and posttest, generalization on many tasks for mentally retarded clients is difficult. Teaching generalization of language skills through music therapy is a topic for further research.

More significant findings might have been produced if the dependent variable had not included so many tasks. There were 80 items on the test, but it was feasible to emphasize only 21 during the treatment sessions. Suggestions for further research include either using a dependent variable with fewer items or extending the length of treatment. Other possibilities include focusing on more specific areas of language such as prepositional concepts or syntax rather than emphasizing language as a whole. An interesting follow up for this study would be to test for retention of items learned after a specified period of time.

Some of the specific items on which subjects in the experimental group showed more improvement included comprehending physical needs (i.e. answering "What do you do when you are hungry?"), comprehending size (i.e. distinguishing between big and little objects, and touching thumbs (i.e. following the direction to "Touch your right thumb against your left thumb"). Subjects in the control group showed more improvement on comprehending remote events (i.e. answering "What do you do when you've lost something?") and distinguishing morning from afternoon. These differences suggest that some language skills may be more easily learned with music therapy methods and others may be more easily learned with traditional methods. Further research in this area is indicated.

Even though no significant difference between the control and experimental groups was found on the dependent variable, it would appear from the indications of the study, that music therapy is at least as effective as traditional speech/language therapy methods in increasing language skills. The implications of this are important as multi-sensory, multi-modal approaches are thought to enhance the learning of a concept (Hodges, 1980). When considering clients individually, there is a strong possibility that music therapy may be more effective than traditional methods for some. A future study in which each client receives both

treatments could help confirm or deny this supposition and supply a rationale for providing music therapy services for those who do respond better to music therapy treatment.

Music therapists who are well informed and trained in the area of speech and language can be valuable members in the interdisciplinary process of increasing language skills, which is ideally the responsibility of every treatment team member for mentally retarded clients.

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APPENDIX A  
LANGUAGE ACTIVITIES FOR CONTROL GROUP

1. Objective: Identifies Self By First and Last Name.  
Procedure: The therapist said hello to each client and asked her to speak her name.
2. Objective: Gives Address  
Procedure: After the therapist repeated the address of Denton State School several times, each client was asked to repeat the address.
3. Objective: Repeats Digits  
Procedure: The therapist instructed the clients to listen and repeat the numbers after she said them. This was first done a collectively, and then individually.
4. Objective: Distinguishes Parts of Objects  
Procedure: A car constructed of cardboard was shown to the clients and the wheels, doors, and lights were pointed out. The clients were individually asked to come and point to one or more of the parts.
5. Objective: Identifies Little Objects  
Procedure: A number of pairs of objects with one of the pair being little (i.e. a big ball and a little ball) were presented to the clients with the therapist identifying the little object of each pair. The clients were then asked to identify the little object of the pair.

6. Objective: Distinguishes Parts of Objects  
Procedure: Pictures of a car, horse, and cow were shown to the clients and parts on each were discussed. The clients were then asked to point to specific parts, such as the door of the car or the eye of the cow.
7. Objective: Identifies Little Objects  
Procedure: Pictures of pairs of big and little objects were cut from magazines and mounted on construction paper. After group discussion during which the little item of each pair was identified by the therapist, the clients were asked to come and point to the little object.
8. Objective: Counts to 3  
Procedure: The therapist had 3 bean bags and threw them to each client one at a time and had the client count them as they were thrown.
9. Objective: Counts to 3  
Procedure: Three like objects were placed in front of the clients and the therapist instructed the clients count them as she pointed to each one. This was first done collectively and then individually.
10. Objective: Identifies Little Objects  
Procedure: Small and large pumpkins were cut from construction paper and clients were asked to pick a little one from the group and tape it on the wall.

11. Objective: Counts to 3  
Procedure: Three pumpkins cut from construction paper were secured to an 11 x 14 inch piece of paper.  
Clients were asked to count them collectively and individually.
12. Objective: Understands the Prepositions 'In' and 'On'  
Procedure: After demonstration from the therapist, clients were asked to place a plastic block either 'in' or 'on' a box.
13. Objective: Comprehends Physical Needs  
Procedure: Clients were shown pictures cut from magazines of a person wearing a coat, a person eating, and a person in bed sleeping, and after discussion were asked to respond to these questions: "What do you do when you are sleepy?", "What do you do when you are cold?", and "What do you do when you are hungry?"
14. Objectives: Touches Thumb (Differentiation of Self), Comprehends Double Commands, and Comprehends Directional Commands  
Procedure: After demonstration by the therapist, clients collectively and individually practiced placing their left thumbs against their right thumbs, placing their right thumb against their right little finger, or placing their left hand on their left knee.
15. Objective: Knows Morning Versus Afternoon

Procedure: Clients were shown pictures of a boy eating breakfast and a boy taking a nap. After discussion of common morning and afternoon activities they were asked questions concerning morning and afternoon.

16. Objective: Comprehends Physical Needs

Procedure: Clients were shown pictures cut from magazines of people eating, sleeping, and wearing coats. After discussion, clients were asked questions concerning what they do when they are hungry, sleepy, and cold.

17. Objective: Comprehends Remote Events

Procedure: Same procedure as above, except pictures were of a person looking for something and a person crossing the street. Clients were asked what they do when they have lost something and what they do before they cross the street.

APPENDIX B

LANGAUGE ACTIVITIES FOR THE EXPERIMENTAL GROUP

1. Objective: Gives First and Last Name  
Song: "Hello Friend"  
Procedure: After the therapist sang the song for each client, the client was asked to say her complete name.
2. Objective. Repeats Digits:  
Song: For 2 digits, the digits were sung on the tones sol and do. For 3 digits, the digits were sung on the tones sol, la, and do.  
Procedure: The therapist instructed the clients to listen as she sang the numbers and then to repeat them after her. This was done collectively and individually.
3. Objective: Distinguishes Parts of Objects  
Song: "Everything Has Its Parts"  
Procedure: A car constructed of cardboard was presented to the clients and its different parts were identified. The song was sung, and during each verse a different client was instructed to point to a specific part of the car.
4. Objective: Gives Address  
Song: "DSS Address"  
Procedure: Clients were taught the song as a group and encouraged to sing it when asked to give their address.
5. Objective: Identifies Little Objects  
Song: "I'm Looking for the Little \_\_\_\_\_"

Procedure: Clients were shown a collection of pairs of objects, one of which was little in comparison to the other. The song was sung and clients were asked to point to the little object of the pair.

6. Objective: Counts to 3

Song: "Can You Count?"

Procedure: Three instruments of the same kind were placed in front of the clients. At the conclusion of each verse of the song, the clients either individually or collectively counted them one at a time.

7. Objective: Identifies Little Objects

Song: "I'm Looking for the Little \_\_\_\_\_"

Procedure: Pictures of big and little objects were cut from magazines and mounted on construction paper.

During each verse of the song, a different client was asked to point to the little object in the picture.

8. Objective: Identifies Little Objects

Song: "Little Jack-O-Lantern"

Procedure: Big and little Jack-o-lanterns were cut from orange construction paper and placed in front of the clients. One by one they were instructed through the song to choose a little one and tape it to the wall.

9. Objective: Counts to 3

Song: "Three Little Pumpkins"

Procedure: Three pumpkins were cut from construction paper and mounted on an 11x14 inch piece of paper. Clients collectively sang the song as the therapist pointed to each pumpkin.

10. Objective: Repeats Digits

Song: "Listen Very Carefully"

Procedure: Clients were instructed to listen and repeat the numbers after the therapist.

11. Objective: Understands Prepositions 'In' and 'On'

Song: "In the Box"

Procedure: Pumpkins were cut from construction paper and during the song clients were instructed to put their pumpkins either 'in' or 'on' a cardboard box.

- 11 A. Same objective and procedure as above, except the clients were instructed through the song to place a rubber skeleton either in or on an organ bench.

12. Objective: Gives Name and Address:

Song: "I'm Glad That You Are Here"

Procedure: The song was sung to each client who was to respond by giving her name and address.

13. Objective: Touches Thumb, (Differentiates Self)

Comprehends Double Commands, and Comprehends

Directional Commands

Song: "Touch"

Procedure: After demonstration, the therapist sang the song and instructed the clients to either place their right thumb against their left thumb, place their right thumb against their right little finger, or place their left hand on their left knee.

14. Objective: Distinguishes Morning and Afternoon

Song: "Morning and Afternoon"

Procedure: Pictures of a boy eating breakfast and a boy taking a nap were shown to the clients and common morning and afternoon activities were discussed. The song was sung several times and after singing the song, the therapist asked questions pertaining to the content of the song (i.e. "When does afternoon start?").

15. Objective: Comprehends Senses

Song: "We Use Our Eyes"

Procedure: Clients were taught the song and after each verse things that are perceived by each particular sense were discussed.

16. Objectives: Comprehends Physical Needs

Song: "What Do You Do?"

Procedure: Clients were shown pictures cut from magazines of persons eating, sleeping, and wearing coats. After discussion, the therapist sang the question, and the clients were encouraged to sing the answer.

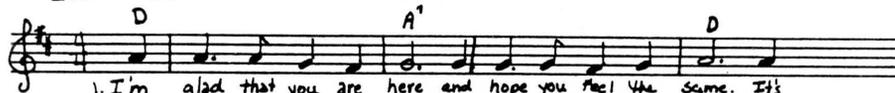
17. Objective: Comprehends Remote Events

The same procedure and song as above were used, except clients were shown pictures of someone looking for something and someone crossing the street during the discussion.

APPENDIX C

MUSIC ACTIVITIES FOR THE EXPERIMENTAL GROUP

## I'm Glad That You Are Here



1. I'm glad that you are here and hope you feel the same. It's  
 2. I'm glad that you are here I'm sure that you can guess. It's



time for us to start right now so please tell me your name.  
 time for us to start right now so tell me your ad- dress.

## Touch



1. Touch your left thumb against your right thumb. Lis- ten to what I say. Touch your



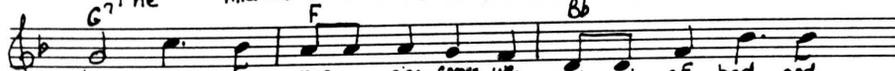
left thumb against your right thumb and make it a hap- py day.

2. Touch your right thumb to your right little finger 3. Touch your left hand to your left knee

## Morning and Afternoon



The be- gin-ning of the day is mor-ning, the first part of the  
 of the day is after-noon. It starts at 12 o'



day. When the mor- ning comes we get out of bed, and  
 clock. In the af- ter noon some folks take a nap, and



then we eat our break- fast.  
 ot. thers go to wo- rk.

Hello Friend

Musical notation for the song 'Hello Friend' in G major (one sharp). The melody is written on a single staff. Chords are indicated above the notes: A, D, A, G, E7, A, D, A, E7, A.

Hel-lo Friend it's great to see you and I hope you feel the same. Hel-lo  
 Friend it's great to see you will you please sing me your name?

Everything Has Its Parts

Musical notation for the song 'Everything Has Its Parts' in G major. The melody is written on a single staff. Chords are indicated above the notes: CM7, dm7, em7, FM7, CM1, dm7, G7, CM7, CM1, dm7, G7, dm7, G7, CM7, dm7, G7.

Ev-ery-thing has its parts. There are parts on ev-ery th-ing Can you Find the  
 parts I name just lis-ten to me sing. Can you find the door of the car,  
 door of the car, door of the ear? Can you find the door of the car and  
 Show it to me? \* nose of the cow, tail of the horse, etc.

DSS Address

Musical notation for the song 'DSS Address' in G major. The melody is written on a single staff. Chords are indicated above the notes: C, D, G7, C, G7, C.

Post of-fice box 3 6 8 Den-ton Tex-as. 7 6 2 0 1

Three Little Pumpkins

Traditional Tune

One lit-tle, two lit-tle, three lit-tle pumpkins, one lit-tle, two lit-tle  
 three lit-tle pump-kins, one lit-tle, two lit-tle, three lit-tle pump-kins,  
 three lit-tle pump-kins on Hal-lo-ween.

Listen Very Carefully

Lis-ten ve-ry care-ful-ly and say these num-bers af-ter me.

3   6   2   \* any combination of numbers.

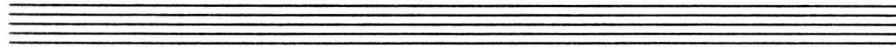
In the Box

(name) put the \*pump-kin in the box. (name) put the pump-kin  
 in the box. In the box, in the box, put it in the box.  
 (name) put the pump-kin in the box.

\* any item can be used.

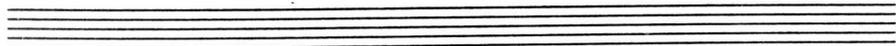
I'm Looking For the Little \_\_\_\_\_.

Handwritten musical notation for the song "I'm Looking For the Little". The music is written on a single staff in 4/4 time. The lyrics are: "I'm looking for the lit-tle \_\_\_\_\_. I'm look-ing care-ful-ly. I'm look-ing for the lit-tle \_\_\_\_\_. Can (name) find it for me?". Chords are written above the notes: F, C7, F, Bb, C7, Bb, C, F, Bb, F/c, C7, F.



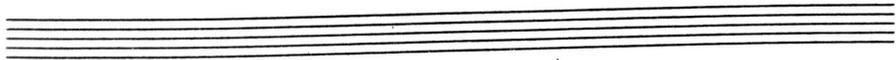
Can You Count?

Handwritten musical notation for the song "Can You Count?". The music is written on a single staff in 4/4 time. The lyrics are: "Can you count these \_\_\_\_\_ for me? Can you guess how ma-ny there will be? Can you count these \_\_\_\_\_ for me? Let's start counting them 1 2 3.". Chords are written above the notes: C, F, C, F, C, dm, G7, C, F, C/6, G7, C.



Little Jack-o- Lantern

Handwritten musical notation for the song "Little Jack-o- Lantern". The music is written on three staves in 4/4 time. The lyrics are: "Find a lit-tle Jack-o- lan-tern and put it on the wall, put it on the wall, oh put it on the wall. Find a lit-tle Jack-o- lan-tern and put it on the wall. Put it on the wall for me.". Chords are written above the notes: D, G, A7, D, G, A7, D.



## We Use Our Eyes

Handwritten musical notation for the song 'We Use Our Eyes'. The music is written on two staves in G major (one sharp) and 4/4 time. The melody is simple, using quarter and eighth notes. Chords are indicated above the notes: D, bm, G, D, G, D, bm, em<sup>7</sup>, A<sup>7</sup>, D.

1. We use our eyes to see. We use our eyes to see. So  
 ev-ery bo-dy try to use your eyes and see what you can see.

2. We use our nose to smell... 3. We use our ears to hear...

## What Do You Do?

Handwritten musical notation for the song 'What Do You Do?'. The music is written on two staves in C major and 4/4 time. The melody is simple, using quarter and eighth notes. Chords are indicated above the notes: F, C, am, dm<sup>7</sup>, G<sup>7</sup>.

1. What do you do? What do you do? What do you do when you're  
 I eat food. I eat food. I eat food when I'm

Handwritten musical notation for the song 'What Do You Do?'. The music is written on two staves in C major and 4/4 time. The melody is simple, using quarter and eighth notes. Chords are indicated above the notes: C.

hun-gry?  
 hun-gry

2. What do you do... when you're cold  
 I put on my coat... when I'm cold

3. What do you do... when you're sleepy  
 I go to bed... when I'm sleepy

4. What do you do... before you cross the street  
 I look for cars... before I cross the street

5. What do you do... when you've lost something  
 I look for it... when I've lost something

APPENDIX D  
HUMAN SUBJECTS REVIEW COMMITTEE EXEMPTION  
AND  
AGENCY APPROVAL

TEXAS WOMAN'S UNIVERSITY  
DEPARTMENT OF MUSIC AND DRAMA

PROSPECTUS FOR THESIS

This prospectus proposed by: Janet L. Jones, B.S., and entitled: The Use of Music Therapy to Increase Language Age in Institutionalized Mentally Retarded Adults

Has been read and approved by the members of her Research Committee.

This research (check one):

Is exempt from Human Subjects Review Committee review because  
Category 1: Research conducted in educational settings (Denton State School)  
 Requires Human Subjects Review Committee review because

Research Committee:

Chairman Ronald E. Nichols  
Member Nancy W. Howard  
Member Basil Hamilton



Gary E. Miller, M.D.  
Commissioner

Texas Department of Mental Health and Mental Retardation

Denton State School  
P.O. Box 368 • Denton, Texas 76202-0368 • (817) 387-3831

Jerry J. Vincent, Ph.D.  
Superintendent

September 26, 1986

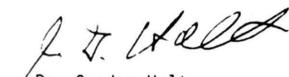
Janet Jones, RMT  
1912 North Lake Trail  
Denton, TX 76201

Dear Ms. Jones:

This is to inform you that you have been granted permission to conduct research and collect data from the Denton State School Clients.

Please forward a copy of the research results to my office when completed.

Sincerely,



Dr. Gordon Holt  
Medical Director

GH:ER