



12-1978

## Music Therapy versus Music Education: The Effect of Two Approaches on Severely Emotionally Impaired Children's Musical Growth and Self Esteem Development

Judith Bertsch D'Arcangelis

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MUSIC THERAPY VERSUS MUSIC EDUCATION:  
THE EFFECT OF TWO APPROACHES ON SEVERELY EMOTIONALLY IMPAIRED  
CHILDREN'S MUSICAL GROWTH AND SELF ESTEEM DEVELOPMENT

by

Judith Bertsch D'Arcangelis

A Thesis  
Submitted to the  
Faculty of The Graduate College  
in partial fulfillment  
of the  
Degree of Master of Music

Western Michigan University  
Kalamazoo, Michigan  
December 1978

## ACKNOWLEDGEMENTS

My graduate studies in music therapy and research in music at Western Michigan University have had a profound impact on my professional and personal development. Continuous challenges as well as philosophical and practical input have contributed much to my education.

Although my thanks extend far beyond the scope of this project, sincere gratitude is offered to Brian L. Wilson, James F. McCarthy, and Donald P. Bullock for their assistance in developing this thesis. Their encouragement, advice, and suggestions have been deeply appreciated.

The project could not have been carried out without the able assistance of Roxanne Combs, who competently taught half of the treatment sessions, and Sharalyn Walkons and Susan Higgins, who devoted much time to taking observational data. Their contributions are much appreciated.

Finally, I am grateful to the facility's staff and students whose cooperation made the treatment phase of the project most enjoyable.

Judith Bertsch D'Arcangelis

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WESTERN MICHIGAN UNIVERSITY, M.M., 1978

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## THE PROBLEM AND ITS SETTING

### The Statement of the Problem

This study investigated the possibility that severely emotionally impaired children's involvement in structured musical activities in a music classroom setting might result in both musical learning and increased self esteem. It was further possible that the addition of music therapy techniques to a more traditional music education approach might lead to a greater increase in self esteem than would otherwise occur while simultaneously providing for the children's learning of musical tasks.

A secondary area of study was the relationship of on-task behavior of groups of emotionally impaired children to specific types of activities carried on in music sessions.

### The Subproblems

#### The first subproblem

The first subproblem was to compare music learning of severely emotionally impaired children after participation in a music education versus a music therapy instructional format.

#### The second subproblem

The second subproblem was to assess the music learning of severely emotionally impaired children after their involvement in music instruction.

### The third subproblem

The third subproblem was to compare changes in self esteem of severely emotionally impaired children after participation in a music education versus a music therapy instructional format.

### The fourth subproblem

The fourth subproblem was to assess changes in self esteem of severely emotionally impaired children after their involvement in music instruction.

### The fifth subproblem

The fifth subproblem was to determine which types of activities in a music class promote on-task behavior with severely emotionally impaired children.

## The Hypotheses

### The first hypothesis

There is no difference between music learning gain scores of severely emotionally impaired students in a music education versus a music therapy instructional setting.

### The second hypothesis

There is no difference between music learning gain scores of the intact groups of severely emotionally impaired students.

### The third hypothesis

There is no significant interaction effect on music learning between the instructional treatments and the subject variable of intact group.

### The fourth hypothesis

There is no difference between music learning pre and posttest scores of severely emotionally impaired students following music instruction.

### The fifth hypothesis

There is no difference between changes of attitude toward self in music class by severely emotionally impaired students in a music education versus a music therapy instructional setting.

### The sixth hypothesis

There is no difference between changes of attitude toward self in music class by the intact groups of severely emotionally impaired students.

### The seventh hypothesis

There is no significant interaction effect on attitude toward self in music class between the instructional treatments and the subject variable of intact groups.

#### The eighth hypothesis

There is no difference between pre and posttest ratings of attitude toward self in music class by severely emotionally impaired students following music instruction.

#### The ninth hypothesis

There is no difference between the number of behaviors (musical and nonmusical) verbally identified as areas of strength by severely emotionally impaired students in a music therapy versus a music education instructional setting.

#### The tenth hypothesis

There is no difference between the number of behaviors (musical and nonmusical) verbally identified as areas of strength by the intact groups of severely emotionally impaired students.

#### The eleventh hypothesis

There is no significant interaction effect on the number of behaviors (musical and nonmusical) verbally identified as areas of strength between the instructional treatments and the subject variable of intact group.

#### The twelfth hypothesis

There is no difference between the pre and post number of behaviors (musical and nonmusical) verbally identified as areas of strength by severely emotionally impaired students.

### The thirteenth hypothesis

There is no difference in the amount of off-task behavior by emotionally impaired students during such activities as teacher talking, student singing, listening to music, playing instruments, moving to music, creating music, or getting ready for learning activities.

### The fourteenth hypothesis

There is no significant interaction effect on off-task behavior between the music class activities and each of the variables of treatment, teacher, and group.

### The Delimitations

The subjects in this study were limited to severely emotionally impaired children living in a residential facility. Most of the children received their educational training at a school on the facility grounds while a few were enrolled in a public school program in the community.

The testing of musical learning consisted entirely of auditory tasks. No skills in music reading were required or studied.

Although a standardized music test was used (Colwell, 1969 and 1970) to assess music learning, the answer sheets were altered to facilitate the students' ability to complete the subtests. Furthermore, there were no published test norms specifically appropriate for emotionally impaired children. Therefore, no comparisons were made to norms established for various groups of students who take these particular tests.

Nonmusical dependent variables were limited to measures of self esteem and off-task behavior. Both variables were confined to the music class setting (i.e., self esteem and off-task behavior within the music class).

Only on-task/off-task behavior was investigated in relationship to a variety of types of music class activities. Neither the amount of learning that resulted from a specific type of activity nor the students' attitudes toward that activity were studied.

### The Definition of Terms

#### Music education approach

The focus of the music education approach was on the development of musical skills through listening, singing, moving, creating, and playing instruments. Goals were limited to the areas of music learning and participation. After teacher instruction, the groups primarily functioned as a unit.

#### Music therapy approach

The focus of the music therapy approach was on the development of music skills and increased self esteem. Musical goals were worked on through listening, singing, moving, creating, and playing instruments. The therapeutic techniques of a) having the children occasionally work in pairs and small groups and b) asking each of them to verbally identify musical and nonmusical areas in which they did well following each music session were designed to enhance self esteem.

### Music specialist

Music specialist referred to both music teachers and Registered Music Therapists in this study.

### Music instructor

The music instructor was the author of this study, a Registered Music Therapist, and a certified music teacher in the state of Michigan.

### Teaching assistant

The teaching assistant was a senior music therapy student from Western Michigan University who was responsible for teaching half of the treatment classes.

### Music learning

Music learning was defined as the ability to aurally discriminate between higher and lower pitches as well as between scalewise and leaping melodic movement. The ability to aurally identify solo musical instruments was included as well.

### Self esteem

Self esteem was defined as the views individuals had of themselves within the music class setting.

### On-task/off-task behavior

On-task behavior was defined as individuals' either participating appropriately or attending during music class activities. Any other behavior was said to be off-task.

### Assumptions

It was assumed that it is valuable for children to develop musically and aesthetically, that high self esteem is important in a child's ability to function well in society, and that on-task behavior is essential to setting the stage for learning.

It was assumed that severely emotionally impaired children hold low self concepts which need to be built up. It was further assumed that attitude toward self in a music class and verbal reports of positive comments about one's musical skills and classroom behaviors are reflective of a person's self esteem.

The attitude toward self in music class test was assumed to be unidimensional. A factor analysis that was done on a similar instrument by McCarthy, Reahm, and D'Arcangelis (in press) revealed a unidimensional measurement device.

### The Importance of the Study

There has been growing endorsement of the inclusion of arts education in the education of the handicapped, yet it seems that relatively few handicapped children have been receiving this service. It is hoped that this study will support the idea that provision of music education for handicapped children is important.



The merit of involving handicapped children in music activities can be based on both musical and nonmusical benefits of such participation. The importance of musical experiences for these children may neither rest exclusively with the development of aesthetic sensitivity (as most music education purports to emphasize) nor with the focus on nonmusical behavior (as music therapy usually stresses) but rather on a combination of the two factors.

Aesthetic growth can be achieved to some extent by all individuals, but handicapped children are often denied exposure to and participation in the arts. Other educational areas are often designated by administrators and teachers to be of sufficient priority to justify exclusion of arts experiences from school programs.

Yet many parents, school personnel, and other family members have noticed that some handicapped children's responses to the arts and in particular, to music, are not elicited to the same degree by other stimuli. Attending responses and vocalizations frequently occur when a severely mentally impaired child hears singing or instruments being played. A heightened ability to stay on-task during an academic music lesson can often be seen with emotionally impaired children who usually exhibit off-task behavior in other settings. Appropriate social skills and cooperation frequently result from a handicapped children's group's involvement in a musical game although these skills are not present in other situations.

What makes children's responses to music different than their responses to other stimuli? Why does development in many children readily occur in behavioral, sensory, psychomotor, communicative, and

cognitive areas through music participation? It is possible that a handicapped child's aesthetic response is "hooked" by the presence of music and that this affective response is maintained during work in nonmusical areas. Growth in aesthetic responsiveness and nonmusical areas might occur simultaneously. This facilitation of aesthetic and nonmusical development could be the unique contribution of musical involvement in the education of the handicapped.

It is essential that musical experiences be provided for handicapped children's aesthetic growth and development in nonmusical areas. For many children these experiences provide opportunities for aesthetic responsiveness as well as support for work done in other professional areas. For some this musical involvement is critical for both musical and nonmusical growth. Music may provide the key for their education, and many are not being given an opportunity to work with a music specialist.

This particular study has added support to the idea that both musical and nonmusical gains can be made by emotionally impaired children in music instructional settings.

It was hoped that this study would yield useful information about what types of musical activities best keep emotionally impaired students on-task. Such information would help music teachers/therapists plan effectively for groups of emotionally impaired children to best hold their attention and thus provide an environment conducive to optimal learning.

Finally, it was hoped that this study would give some indication of how a music therapist or teacher might best function with this

type of client/student. Support for using a traditional music education approach or a music education plus therapy approach should have resulted.

## THE REVIEW OF RELATED LITERATURE

### Importance of Arts (Music) in the Education of the Handicapped

The arts are of utmost importance in the development of self-knowledge and an understanding of the feelingfulness of human life and should be stressed in the educational experiences of all children (Marcoux, 1976; Nocera, 1978; Reimer, 1970). Reimer (1970) stated that aesthetic sensitivity exists in all human beings and can be developed to some extent in everyone while Forsythe and Jellison (1977) pointed out that "handicapped persons have as much right to learn aesthetic responsiveness as nonhandicapped persons" (p. 30).

Positive nonmusical outcomes can also be achieved through the use of musical experiences. Nocera (1978) concluded that music education of the handicapped results in increases of their sensory, psychomotor, cognitive, and affective skills.

The value of including arts experiences in the education of all children including the handicapped has been documented. Public Law 94-142 is supportive of handicapped children's involvement in the arts because they can be used as teaching tools and to develop appreciation of aesthetic qualities (Office of Education, 1977, p. 42,468). It also states that related services

may include other developmental, corrective, or supportive services (such as artistic and cultural programs, and art, music, and dance therapy), if they are required to assist a handicapped child to benefit from special education. (Office of Education, 1977, p. 42,480)

According to national figures, however, only eight percent of the approximately eight million handicapped children in the United

States are involved in arts programs (Nocera, 1978). This may, in part, be due to the reluctance of school systems to provide music teachers or music therapists for special education because classroom teachers in special education are supposed to be trained to teach all subjects including the arts. While this training has sometimes occurred, it very often has not. Many teachers report that they feel inadequate in their abilities to provide arts experiences for their students, and in one study in a large city in Michigan, only 47% of the special education teachers indicated that they had had a music methods course in their college training (Edmonson, Fink, Hahnenberg, Hause, & Reahm, 1973). It seems apparent that music specialists are needed to provide music education for special education students.

Handicapped children are placed in special education facilities for at least two major reasons: to gain an education comparable to all children's education and to learn adaptive behavioral skills that will allow them to function successfully in society. Students are now guaranteed full services, due process rights, maximal opportunity to be educated with normal children in the least restrictive environment, and yearly individualized education plans (Forsythe & Jellison, 1977). The implications for music therapists/educators are large in terms of effective planning, documentation, and teaching.

A question arises regarding whether a music educator or a music therapist is most equipped to work with the handicapped child. Traditionally, music education has primarily been concerned with the development of aesthetic responsiveness while music therapy has focused on using music functionally to change nonmusical behavior

(Steele, 1969). Duerksen (1967 & 1974) discussed similarities between the fields such as their both using music, dealing with people, and developing high levels of human behavior and concluded that sharing should occur between the two fields because each has much to offer to the other. Forsythe and Jellison (1977) suggested that both music educators and music therapists will be working with special education children and should deal with the children from their own professional standpoints (i.e., music educators should primarily concern themselves with aesthetic development and music therapists should deal for the most part with the development of nonmusical skills).

This author feels that it is very important that both musical and nonmusical behaviors be dealt with through special education students' participation in music activities. A sensitivity to handicapped children's aesthetic and nonaesthetic needs and an understanding of how to use music effectively to meet these diverse needs are essential. Perhaps training in both music therapy and music education is necessary to be able to accomplish these tasks.

#### Description of Emotionally Impaired Children

It is important that persons working with emotionally impaired children have some understanding of the behaviors that these children exhibit. They may be aggressive and act out or they may withdraw and turn their troubles inward. They might seem perfectly healthy one moment and then explode over a problem that could be imperceptible to others. A grasp of these behavior problems and ways to deal with

them are crucial to a person's successfully working with emotionally impaired children.

Characteristics vary considerably among emotionally impaired children and may perhaps be placed on a reflection/impulsivity cognitive style continuum (Finch, Grandell, & Deardorff, 1976; Finch & Nelson, 1976). A reflective child is defined as one who is afraid of making mistakes and waits to respond to a stimulus until he has considered several alternatives; an impulsive child responds quickly to a stimulus without considering alternatives.

Finch and Nelson (1976) found that impulsive emotionally disturbed boys in a residential treatment center are more likely than their reflective counterparts to talk about others blaming them unfairly, threaten self-harm, hit and bully other children, and be rough in play. The reflective boys are more unwilling to talk with adults outside the family. Finch et al. (1976) found in another study that those emotionally disturbed children who had a high need for achievement (reflective) waited significantly longer to respond on a test of Matching Familiar Figures than did the students who had a low need for achievement (impulsive). They did not report a significant difference in errors made by the two groups, however.

An investigation by Finch, Kendall, and Montgomery (1976) indicated that emotionally disturbed children may experience state and trait anxiety in a qualitatively different way than normal children. A factor analysis of data indicated that factors of state anxiety (which varies from situation to situation) accounted for significantly more variance on the State-Trait Anxiety Inventory for Children

than did the trait anxiety (stable personality dimension) factors for the emotionally disturbed subjects ( $p < .05$ ). This was not the case in the analysis of the normal children's data. Support was given to the idea that an emotionally impaired child's feelings at any given moment (state) influence his present behavior more than his past history of feelings (trait). A further finding was that the emotionally impaired children were less able to distinguish their negative feelings of a momentary nature from each other. This lends support to the concept that highly anxious people are less able to discriminate their feelings, particularly negative ones, and consequently may not be as capable of effectively dealing with them as less anxious people.

A variety of techniques have been used in working with emotionally impaired children. One of the most effective has been the use of contingencies (e.g., token systems) to help children learn new behaviors. Two studies (Haubrich & Shores, 1976; Hundert, 1976) have shown that contingent reinforcement for academic performance in the classroom has increased both the academic performance and appropriate behavior.

It is becoming increasingly common to work with small groups of handicapped children to develop appropriate social skills and the ability to express feelings. Virshup (1975) concentrated on the development of socialization skills in six emotionally disturbed children through art therapy. The children progressed from working independently on art projects to working in pairs and eventually with the entire group over a ten-week span of time. Less disruptive



behavior and increased peer interaction were evident at the end of the project. The art therapist determined that social growth had occurred in each of the children by interpreting their artwork. Marcoux (1976) described creative dramatics as an effective means of helping emotionally impaired children develop affectively. It was used successfully in a children's unit of a state hospital, and there were indications that those children were better able to concentrate on one task at a time and improved in their verbal and social skills. Creativity seemed to blossom as well.

Emotionally impaired children do exhibit unusual behaviors. With some training and imagination, these behaviors can be dealt with successfully.

#### The Use of Music with the Handicapped

The use of music with the handicapped has focused primarily on the development of nonmusical behaviors. Music contingencies have been used a great deal to increase individual clients' appropriate social skills and to decrease behaviors that interfere with learning and interacting. The presence of recorded music contingent upon appropriate behavior has been effectively used to establish imitation in behaviorally disturbed retarded children (Underhill & Harris, 1974), improve a retarded child's cooperation in working with an adult (Steele, 1968), increase appropriate walking and car riding behaviors in a nonverbal, hyperactive boy (Reid, Hill, Rawers, & Montegar, 1975), and decrease hand movements and rocking in a retarded child (Jorgenson, 1974). Another child earned record listening

time by following directions and not hitting the heels of his hands together, on his legs, or on his face during his piano lessons (Jorgenson, 1975). In a similar study Cook and Freethy (1973) were able to decrease a state hospital woman resident's complaining behavior by allowing her to play hymns on the piano when her complaining did not occur for designated lengths of time.

Music contingencies have also been used with groups of handicapped children to improve social behavior. Jorgenson and Parnell (1970) were able to increase participation and decrease hitting, yelling, and pushing behaviors in a music group designed for four moderately retarded children by devising a point system to reward appropriate behavior. Candy was given after each activity to those who earned all possible points for that activity, and the two highest scorers each day were allowed to choose a record, put it on the record player, and lead the group at the end of the session. Hanser (1974) decreased three emotionally impaired elementary boys' inappropriate verbal and motor behaviors by implementing a group contingency whereby a tape of music chosen by the group was interrupted when any of the boys acted inappropriately. Peer pressure developed as the study progressed. Wilson (1976) used rock music as a reward for acceptable behavior of a group of six emotionally impaired five to seven year-olds during their art sessions. Target behaviors were selected for each child; when any of these inappropriate behaviors occurred, a tape of rock music was interrupted, and the child who had misbehaved was immediately talked to about more appropriate behaviors. Peer pressure developed and overt reactions to the music, increased

interaction, and less staffing resulted.

Cassity (1976) investigated the use of group music guitar lessons with adult female short-term psychiatric patients as a possible means of increasing interaction, peer acceptance, group cohesiveness, and interpersonal relationships. Results from a sociometric questionnaire indicated that peer acceptance and group cohesiveness substantially increased over a control group's data and that both control and experimental groups changed significantly on a measurement of interpersonal relationships ( $p < .001$ ).

Two studies (Dorow, 1976; Madsen, Dorow, Moore, & Womble, 1976) have shown that both musical and academic learning can occur when televised music lessons are used as reinforcers for correct academic responses (i.e., math problems). Their findings indicated that both math and music scores on a music listening test increased when the contingent televised music lessons were used with first grade elementary children (Madsen et al., 1976) and with 20 year-old educable mentally retarded children functioning at the kindergarten or first grade arithmetic level (Dorow, 1976).

Music learning may occur when using a variety of music activities in therapeutic situations with children. The present study investigated music learning following emotionally impaired children's participation in classroom music activities in a predominantly music educational approach as compared to that approach coupled with two therapeutic techniques.

### Self Esteem Growth Through Music Activity Involvement

Self concept may be defined as the total view one has of oneself (Felker, 1974) or as an evaluative attitude one has toward oneself (Coopersmith, 1967). Felker (1974) stated that self concept is closely related to achievement, anxiety, and locus of control. Caplin (1969) found that both black and white children in elementary schools showed that the higher a child's achievement level was, the higher his self concept was likely to be. Felker (1974) claimed that the idea of the self concept's being learned is universally accepted and that self reinforcement can be taught.

High self esteem, according to Felker (1974), results from the development of a sense of belonging, competence, and a feeling of worth. Coopersmith (1967) suggested that the way to develop self esteem is through successful experiences involving the feelings of competence and significance (i.e., the acceptance, attention, and affection of others) and, to a lesser extent, power (i.e., the ability to influence and control others) and virtue. Six factors probably influence the self concept of children: behavior, anxiety, academic status, appearance, happiness and satisfaction, and popularity (Felker, 1974; Piers & Harris, 1964).

There is some support for measuring self esteem within a specific setting. Coopersmith (1967) was primarily concerned with enduring self esteem which he saw as being stable for a period of at least several years. He admitted that self esteem may vary from situation to situation but found in one test with 56 children that there were

no significant differences between the various elements present in his Self Esteem Inventory. Morrison and Thomas (1975), however, found that the subscale related to school self esteem from Coopersmith's Self Esteem Inventory did identify different self images than did the entire Self Esteem Inventory when the test was given to college students to measure their self concepts within the classroom setting. He further found that how they felt about themselves in that setting had an effect on their behavior in the classroom.

Finch, Kendall, and Montgomery (1976) concluded that state (situational) anxiety and an emotionally impaired child's feelings at a given moment have more influence on his behavior than his trait anxiety and past history of feelings. The same may be the case for an emotionally impaired child's feelings of self esteem. His overall self concept may indeed be stable over a length of time, but his short-term self concept may have more influence over what he does and how he feels at a specific moment or in a certain situation. This seems to support the idea that self esteem measurement is important within a specific setting and that dealing with self esteem on a moment to moment basis is vital in the treatment of an emotionally impaired child.

Although self esteem enhancement is often cited as a goal of music therapy, little research has actually been accomplished in this area. When working with elementary black disadvantaged boys in a school setting, Michel and Martin Farrell (1970; 1973) found that when ukulele lessons were given to facilitate a successful experience, the boys' self esteems as measured by the Coopersmith Self Esteem

Inventory increased but not to a significant degree. When further lessons were contingent upon attending behavior in another music class setting, on-task behavior increased by ten percent. In a later study Michel (1971) found some support for using music skill acquisition on the guitar to increase self esteem of remedial reading students who were all junior high school black problem disadvantaged boys and as a contingency supporting the completion of daily assignments in workbooks by boys in a special education learning disabled classroom in the same school.

There is research to support the idea that self-evaluative statements are important in a child's learning to evaluate himself in a reasonable manner and to ultimately raise his self concept. Haaken and Davis (1975) used a group approach in treating psychotic children that emphasized spontaneous discussion, verbalization, expression of feelings, and interaction. Over a nine-month treatment time the authors felt that much gain was made in these areas although no specific data were given.

Harth and Morris (1976) felt that involving emotionally disturbed children in setting goals for changing their behavior would help each child become aware of his problems, be able to verbalize his needs, and be committed to changing his own behavior. It was felt that each child should learn to accept responsibility for his actions and that the group of students and teacher should work together in helping a child identify his appropriate and inappropriate behaviors.

Felker and Stanwyck (1971) stated that self-directed evaluative

statements might link a person's self concept and overt behavior. They felt that a person with a low self concept would be likely to make a greater number of negative comments about himself and a person with a high self concept would be likely to make more positive comments about himself. Although the authors found that a specific self-evaluation technique after academic tasks (i.e., spelling words) related to general self concept rather than to actual performance when working with fourth grade students, they did suggest that self-evaluative verbal behavior can probably be trained. In a later study with fourth graders, Felker (1972) found that the children evaluated themselves both in terms of how they did on a spelling task and their general self concepts. He found that performance, general self concept and specific anxiety measures were predictive of individual students' self-evaluative behavior.

The preceding research findings lead to some interesting conclusions. Successful experiences can be effectively structured into music activities. It is felt that students can develop feelings of worth and competence in both music education and music therapy activities. It seems logical that increased opportunities to work in pairs and small groups would encourage children to work closely together in a structured environment and develop a feeling of belongingness. Finally, it may be that individuals who are periodically encouraged to verbally identify areas in which they do well will become better able to define their self concepts and to then hopefully improve them.

### Self Concept Measurement

Several methods of designing instruments to measure self concept and/or attitude toward self in a specific setting have been done. Coopersmith's Self Esteem Inventory measures a stable self attitude by combining statements in four areas: peers, parents, school, and personal interests. Caplin (1969) developed a self concept test that was composed of 60% personal/social attitudes and 40% school related items. Shaw and Tomcala (1976) developed an instrument to measure the attitude of elementary school children toward music by using a series of statements with a four-point Likert-type agree/disagree scale provided for each statement. They concluded that their instrument measured several aspects of music and that musical attitude seemed to be a composite of factors rather than a few specific definable categories. Khan (1978) used pictures with two response choices and self reports with three response choices to measure attitude toward school and the teacher and found the correlation to be significant ( $p < .01$ ).

Another method of measuring attitude is to use the semantic differential technique. A concept is presented and the subject is asked to rate it on several five or seven point bi-polar adjective scales (Osgood & Suci, 1969). Although measurement in three areas is usually made (i.e., evaluation, potency, activity), the most prominent and stable element of semantic judgment has been found to be the evaluative component. This technique has been successful in measuring children's attitudes as young as the second grade level



(Di Vesta, 1969), although very young children are likely to confuse the meanings of certain words (e.g., good, pretty, clean, happy) and these should be used as synonyms (Ervin & Foster, 1969). Adjectives that load heavily on the measurement of children's evaluative attitudes include bad - good, sweet - sour, awful - nice, unfriendly - friendly, and right - wrong.

McCarthy, Reahm, and D'Arcangelis (in press) developed an instrument to measure elementary school children's attitudes toward their instrumental music classes and their feelings about their own playing within those classes by embedding a hierarchy of four concepts relating to these areas within a series of bi-polar adjective five-point scales using adjectives that load heavily on evaluation. A series of faces was presented with each scale to help the children identify their feelings; the series ranged from a face with a large smile which indicated a strongly positive adjective to a face with a large frown which indicated a strongly negative adjective. The items were presented in a reverse order format. Factor analysis revealed the emergence of one factor rather than four indicating that the students were unable to distinguish their attitudes toward themselves from those about their music classes. The instrument was interpreted to measure a general attitude toward the child's instrumental music experiences. A similar instrument was designed for this study.

### On-Task Behavior as a Function of Activity Within the Music Classroom

It is a widely held belief that appropriate social behavior is required for academic learning to take place. In addition, Forsythe (1977) found that attending or on-task behavior was partially a function of types of activities in which elementary students participate in music classes. Knowledge about what types of activities yield higher on-task behavior may be useful in music specialists' planning of music lessons for children. This could be particularly helpful when working with emotionally impaired children whose behavior is so frequently off-task.

The observation form used in the present study was modeled from Forsythe's (1977) form which included eleven activity descriptions (i.e., teacher talking, students singing, listening to music, playing instruments, moving to music, singing and moving to music simultaneously, singing and playing instruments simultaneously, verbal rhythm, composing, getting ready for learning activities, other). A category of students and teachers talking was added because classroom verbal behavior often includes this element (Erbes, 1972). The form itself was similar to the one used by Forsythe (1977) and was based on an interval recording technique developed by Hall (1974) and a data collection procedure developed by Madsen and Madsen (1974). Information on both time spent in specific activities and off-task behavior by activity can be gathered with this form.

### Summary

The literature supports the value of using music activities with handicapped children for both aesthetic and nonmusical reasons. Emotionally impaired children in special school and/or residential facility settings are there to gain both an education comparable to all children's education and the skills and self confidence to function successfully in society. Participation in music class activities is well suited to working in both of these areas.

It is the contention of the author that a combined music education/music therapy approach is provably the most effective instructional format to use with emotionally impaired children. It is felt that gains can be made in both musical skills and self esteem through involvement in music class activities as well as therapeutic techniques and that both of these areas are important in a child's development.

Observational methods have been used to gather information about the amount of time spent in various types of music class activities as well as off-task behavior present during these activities. This information can contribute to more effective planning of music classes for children by music specialists.

## METHOD

### The Subjects

The subjects were 18 male and five female severely emotionally impaired children who were living in a residential treatment facility in Kalamazoo, Michigan, during the summer of 1978. They had been assigned to this center via school, court, and mental health agency referrals. All of them lived in cities in the lower peninsula of Michigan with the majority coming from the Detroit and the southwest Michigan areas.

The subjects attended school on the grounds or in the community during each weekday morning and participated in a summer recreation program (i.e., the Summer Program) during each weekday afternoon. The 23 subjects were present at music classes throughout the summer and were involved in all pre and posttesting. Two of the original subjects were discharged from the facility in the middle of the summer and four other students were admitted during the treatment period. Because they were not present for the entire summer, these six children were not included in the study.

In the Summer Program, the children rotated through several activities (i.e., music, arts and crafts, physical education, and swimming) on four afternoons a week and going on a field trip on the fifth day. The students spent approximately 40 minutes in each of the areas on a typical afternoon.

The director of the Summer Program and the facility's staff

divided the children into four groups. Members of each group were of similar ages and social functioning levels. Group I was composed of junior high age honor children, or those who would probably behave quite well and work independently on various projects. Group II consisted of junior high age boys who required much structured activity and who were immature for their ages and often engaged in acting out behaviors. Older elementary children who frequently behaved poorly and needed much structure were assigned to Group III. Subjects for the present study were restricted to the members of Groups I, II, and III. A fourth group of young elementary children was not included in the study because their behaviors and needs were visibly different from those in evidence in the other three groups.

The students' mean age was 12.09 years ( $s = 1.53$ ). Their mean grade level was 6.00 ( $s = 1.93$ ), and most had been residing at this facility for approximately six months. They attended an average of 11.48 ( $s = 1.88$ ) out of the 14 treatment sessions held.

#### The Setting

The music classes took place in two classrooms on the facility grounds. The author was hired to provide music instruction for the children involved in the Summer Program. To enable this project to be undertaken, the author hired a senior music therapy student from Western Michigan University to assist with the music teaching. She was an excellent student and had shown skillful work and responsibility in a variety of field work settings. In addition, at least one residential staff member was assigned to each of the Summer Program's

groups and was asked to participate in all activities.

Emphasis for the entire program was placed on learning through enjoyable experiences. Structured activities in which the children could succeed were implemented in all phases of the Summer Program.

### The Measurement Instruments

#### Descriptive data

Each child verbally provided descriptive data during an individual pre and posttest interview with either the author or her teaching assistant. During the pretest the data were written by the interviewer as the child reported them. This information was written on identical forms prior to the posttest interview and was verified at that time. Cassette tape recordings were made of all of the interviews for future reference.

Data gathered included each child's age, gender, approximate grade level, school placement, length of time in residence at this facility, and geographical area from which he came. Additional time was spent discussing each child's musical background. (See Appendix A)

#### Music learning

Colwell's Music Achievement Tests (MAT) I (parts 1 and 2) and III (part 4a) (1969; 1970) were used to measure musical knowledge. These tests measure a person's ability to discriminate pitch differences, interval movement, and solo instrument sounds. They are limited to aural skills and do not require any knowledge of musical

notation.

MAT I, part 1, assesses the child's ability to hear high, low, or same pitches when two and three notes are played. Part 2 measures his ability to differentiate scalewise from leaping movement when three-tone patterns and phrases are played. Part 3, a measurement of ability to identify duple and triple meter, was not included in this test because it was found to be extremely frustrating for a group of the author's emotionally impaired children in the Grand Rapids Public Schools.

MAT III, part 4a, measures a child's ability to identify solo instruments when he hears them. It was projected that guest musicians would come in to demonstrate instruments during the summer. Therefore, this subtest's inclusion seemed to be appropriate.

The music learning test instrument was composed of 63 items (i.e., 25 in pitch discrimination, 28 in interval discrimination, and 10 in instrument identification). It was given to each subject pre and post treatment and took approximately 25 minutes to complete.

In order to help the children keep pace with the test, the standard answer sheet was modified in the following manner. The response format for each subtest (i.e., two for part 1 and two for part 2) was placed on one sheet of paper. The directions and examples that appear on the mark-sense answer sheets were typed on the top of the page. Test items were arranged vertically in numerical order. A picture cue (i.e., an apple, a house, a flower, or a wagon) to help ensure each person's being on the correct page was placed in the upper left-hand corner and was circled by a colored felt tip pen

(i.e., red, green, orange, and blue respectively). Small pictures of the possible answers for the instrument identification subtest were drawn for the test items so that the ability to read would not be required. The name of each instrument was printed next to its picture. (See Appendix B)

### Self esteem

#### General

The Piers-Harris Children's Self Concept Scale (The Way I Feel About Myself) (1969) was used to ascertain each subject's overall self concept. The authors of the test recommended that it not be used as a measure of self concept change following a brief treatment period. They did state, however, that it is a strong measure of a child's overall self concept and should be used in research as a single measure or before and after a lengthy treatment. For this reason and because several subjects reacted negatively to parts of the test, it was decided to administer it only once and to use the obtained scores as comparisons with the other self esteem measures in this study.

The test is a self report instrument that has been used by children of different ages and mental capabilities. It consists of 80 declarative statements (e.g., "I am a happy person;" "I am unpopular.") to each of which the child responds with a "yes" or "no" answer. Approximately one half of the items are stated positively and the other half negatively.

The test is usually used unidimensionally, but cluster scores in



six areas (i.e., behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction) can be determined. Normative scores, however, are only provided for the test as a whole.

The test is scored by giving one point for each response that reflects a positive self concept. The mean score for the normative sample from grades 4, 6, 8, 10, and 12 in a small town in Pennsylvania was 51.84 with a standard deviation of 13.87. A group of emotionally disturbed boys scored between 50.4 and 60 with no standard deviations given. Average raw scores on this test are considered to range from 46 to 60, or those falling between the 31st and 70th percentiles.

The test/retest reliability is .77, and internal consistency coefficients range from .78 to .93 for this test.

#### Attitude toward music class and self in music class

This measure used the semantic differential technique and was modeled after a similar device used by McCarthy, Reahm, and D'Arcangelis (in press).

Two concepts were embedded in the instrument (i.e., My music class is...; and In my music class, I feel...). Five bi-polar adjectives that load heavily on the evaluation component were provided in a counterbalanced order for each of the concepts. Each item had a seven point scale with an accompanying series of seven faces to help the children identify their feelings without having to rely solely on their reading skills. The series of faces ranged from a

face with a large smile which indicated a strongly positive adjective to a face with a large frown which indicated a strongly negative adjective. The items were presented in a reverse order format. A seven point scale was selected over a five point scale because it was thought that there would be greater variance between scores. Picture cues were used in the upper left corner to help the children stay together as the test was administered. (See Appendix C)

#### Self-evaluative statements

An interview technique was developed to determine the subjects' ideas about their musical skills and positive behavioral contributions to their music classes. Each interview was conducted on a one-to-one basis by the author or her teaching assistant. The children's responses were written on answer forms as they were given (See Appendix A), and a cassette tape recording was made for future reference.

Descriptive data including gender, age, cottage unit, school placement, years/months living at the facility, geographical area from which he came, and approximate grade level were gathered first. Then each child was asked about his musical background.

The subject was next asked to comment verbally on what he does well in the music class setting. The question was, "What music skills do you feel you do well on? They could be in singing, playing instruments, and so on." Both independent and prompted responses to the question were recorded on the form.

A question regarding positive behaviors followed. It was, "What behaviors do you feel that you contribute to your music classes?"

These could be cooperating, listening, following directions, and so on." Independent and prompted responses were recorded.

The premise behind this measure of self concept was that the students with high self concepts would probably state a greater number of positive comments about themselves than would those with low self concepts.

Finally, the interviewer read two questions at the bottom of the form to be answered by the student's circling an appropriate response to each question. They were, "How would you rate your own musical skills?" with possible answers of terrible, not very good, okay, good, and excellent and "How often would you say that you cooperate in music class, try hard, and listen to the staff and other students?" with possible answers of always, most of the time, sometimes, not very often, and never. The interviewer then left the table, asked the student to circle his answers, and instructed him to place the form in a file folder.

#### Off-task behavior

The procedure used was based largely on a system used by Forsythe (1977) in his investigation of normal elementary students' off-task behavior as a function of music class activities. In this system an observer recorded data on what activities took place and how many students were off-task during specific intervals of time. On-task behavior was defined as appropriate attending or participation while anything else was said to be off-task. In the present study, students who were timed out (i.e., sent to the corner for several

minutes) were included in the off-task count. If they were removed from the room, they were no longer included in the group's total count.

Twelve possible activity categories were taken from systems used by Forsythe (1977) and Erbes (1972) and included teacher and student verbal behavior, student participatory behavior, and getting ready for activities. The categories are defined in Table 1.

The training of an observer and a reliability observer consisted of reviewing the categories and instructions verbally with the author and then practicing data taking during five or six sessions on a day prior to scheduled observations. Problems were discussed following these observations.

The observers took data from observation rooms. They observed one treatment group for 10 to 15 minutes and then moved to the other treatment group for the same length of time. They scanned each group from left to right during a 10-second interval and then recorded on an observation form the activity taking place, number of off-task students, number of students in the room, and any comments during the next 10-second interval. (See Appendix D) A cassette tape that had been prepared by the author cued the observers as to when to observe and when to record. Data were recorded for between 30 and 45 10-second intervals per observation.

Table 1  
Activity Code Key

Symbol	Activity Description
TT	Predominance of teacher talking (including instruction giving, lecturing)
TST	Predominance of teacher/student interaction (includes questioning and answering; student initiated talk)
S	Students singing (group or individual)
L	Students listening to music (live or recorded) -- considered passive since other symbols refer to active listening (for example, M for moving to music)
P	Students playing instruments (includes echo clapping, nonvocal "performance")
M	Students moving to music (dancing, expressive movement)
S&M	Students singing and moving to music simultaneously
S&P	Students singing and playing instruments simultaneously
C	Composing, creating sounds (not an imitative response)
G	Getting ready (teachers and students) for learning activities (getting instruments, passing out books, and so on)
O	Other (for example, interruptions at door, making collage to music)

## Treatments

Two treatments were used in this study. Both the music education instructional format and the music therapy approach focused on musical learning and experiences as a primary goal. In addition, an attempt was made in the music therapy format to emphasize the non-musical behaviors of interaction with peers and adults in a constructive way and increasing self esteem.

The musical activities carried on in both treatments included each group's singing, listening to recorded and live music, playing instruments (i.e., rhythm instruments, resonator bells, piano, guitar), creating music or improvising on the instruments, moving to music, and reading music charts. Four guest musicians and the instructors demonstrated string, woodwind, brass, and percussion instruments as well as the harp, bagpipes, and recorders. The children were given an opportunity to play many of these instruments. The groups participated in a final banquet performance and worked on their musical presentations.

Specific aural skills that were concentrated on in all groups included discriminating high and low pitches as well as differentiating scalewise and leaping melodic movement. This was accomplished by both teachers' and students' playing examples on the resonator bells, piano, or string instruments and having the other students decide the appropriate answers. Instrument sound identification was studied through live and recorded examples.

The music therapy approach included time spent in all of the above activities. Time was also devoted to encouraging the subjects

to work in pairs or small groups within the larger group. It was hoped that they would use the opportunity to interact more often and on a less superficial level with other peers in their class. Activities included bell conversations in pairs (i.e., nonverbally "talking" through playing the bells), mirroring movements in pairs, making collages to music, and discussing feelings after hearing a record.

At the end of each session, every subject in a music therapy treatment group was asked to verbally identify musical and/or non-musical behaviors that he felt that he did well during the session. The instructors and staff members gave positive feedback at this time and occasionally some constructive criticism as well. It was hoped that this technique would enhance individuals' self esteems.

The instructors and staff members were pleasant, encouraging, and supportive in both treatment formats because it is important to have a supportive atmosphere in both educational and therapeutic settings. An attempt was made by the instructors to compliment individual students in the music therapy approach frequently.

### Design

Because the enrollment was expected to fluctuate during the first week of the Summer Program and because a great deal of shifting between Groups I, II, and III was anticipated, the treatment phase of this study was not begun until the end of the first week. Prior to treatment, Groups I, II, and III met in their entirety to become acquainted with both instructors, begin some musical activities, and complete the MAT and attitude measure pretesting. During these three

days the individual interviews took place either in the morning with the instructor or during the scheduled music class time with the teaching assistant.

Groups I, II, and III were not equivalent and could not be used as intact treatment groups since comparisons between their pre, post, and gain scores would not be interpretable. Table 2 indicates that there were significant differences as determined by independent t tests between mean ages and grades in school although their mean lengths of stay at the facility did not differ significantly. A further constraint placed upon the author was that she was responsible for each group's music instruction during specific blocks of time and had no leeway in scheduling.

It was, therefore, decided that for the treatment phase of the project, individuals in the three original groups (i.e., I, II, III) would be randomly assigned to a total of six subgroups (i.e., Ia, Ib, IIa, IIb, IIIa, IIIb). Each of the subgroups received instruction two days per week for approximately 40 minutes from the instructor and two days per week for 40 minutes from the teaching assistant who was hired by the instructor to do follow-up work.

This system might be considered a semi-consultancy plan. The instructor was responsible for both direct music teaching and providing written plans for other staff to carry out music instruction thereby achieving more musical involvement time for the students than would otherwise be possible. The written plans included activity descriptions, goals for specific activities, and sources or materials needed. As a means of communication and for future reference, each



instructor made brief observation notes on the back of the lesson plan after every session.

Table 2

Subjects' Mean Ages, Grades, Lengths of Stay at Facility  
and Attendance by Summer Program Groupings

Group	<u>n</u> Males/Females	Means			
		Age <u>s</u>	Grade <u>s</u>	Stay <sup>a</sup> <u>s</u>	Attendance <sup>b</sup> <u>s</u>
I	7	13.00	7.14	3.00	11.43
	5/2	1.00	1.46	1.15	2.82
II	8	12.50 *	6.62 **	2.87	11.87
	8/0	1.20	* 1.41	1.36	1.36
III	8	10.87	4.37	2.62	11.12
	5/3	1.55	1.77	0.92	1.46

<sup>a</sup>Length of stay: 1 = one month or less; 2 = one to six months; 3 = six months to one year; 4 = over one year.

<sup>b</sup>Number of sessions attended out of 14 treatment sessions.

\* $p < .05$

\*\* $p < .01$

Subgroups Ia, IIa, and IIIa received the music therapy instructional format while subgroups Ib, IIb, and IIIb received the music education instructional format throughout the treatment period. Provision was made for a student's shifting from one of the original groups to another; he was to be assigned to the subgroup receiving the same treatment that he had previously been receiving.

There were 14 treatment sessions during 5 weeks with the subgroups' seeing each instructor seven times. The order in which they were taught by the two instructors was counterbalanced. On two additional days Groups I, II, and III met in their entirety to hear instrument demonstrations. Observations were made on six treatment days and the two instrument demonstration days.

The posttests (i.e., MAT, attitude measure, and individual interviews) were completed on two days following the treatment.

### Procedure

#### Confidentiality

The facility's director gave the author permission to gather descriptive data and measurement scores of musical achievement, self esteem, and on-task behavior for all of the children involved in the Summer Program as long as individual students were not identified in the reporting of the findings. He further asked that the facility itself not be identified by name.

Each child was assigned a code number under which all information was kept. Only the author had the master list of names and code numbers. The students were told that the numbers on their test forms were to help the author keep track of all of their input without identifying individuals by name.

#### Music learning

The MAT was administered to Groups I, II, and III during their assigned music times on a Thursday before and after treatment. The

middle of the week was deemed most appropriate for all pre and post-testing because weekend activities (both positive and negative) would have the least effect on behavior and attitude. Attendance was also expected to be most consistent in the middle of the week.

As the students entered the music classroom, they were asked to sit at one of the tables that had been spread across the room. The students were given a pencil and answer sheets for the MAT and an attitude measure. The author explained that information gathered on these tests would be used to assess the effectiveness of the summer music program. The students were told that they would not be identified by name but that the code number in the top right corner of the first page would allow the author to keep all of their material sorted. It was also pointed out that their tests would not be looked at until the Summer Program was completed. They were urged to do their best and were told that the balance of the music period would be used for free time, an activity that each child seemed to enjoy.

For each subtest the author pointed out that the subjects should be on the page with the appropriate picture cue on it. Then the directions for that subtest were played on a Califone variable speed record player. The speed control lever was set in a vertical position (i.e., half way between slow and fast indicators) for all MAT testing. The author did the examples for subtests 1a and 1b on the board. After each set of directions, the recording was stopped and the children were asked if they understood the instructions. Any needed clarifying remarks were made, and then the subtest was played with no interruption. When the tests were completed, the children

placed their answer sheets in a manilla envelope and were given free time.

One student behaved poorly and was removed from the group during the pretest. He was given the test on an individual basis the following morning. Two boys who were absent during the posttest were given the test on the following day.

Correct responses for the three test parts and a total number of correct answers given were determined for each child's pre and posttests after the treatment was completed.

### Self esteem

#### General

The Piers-Harris Children's Self Concept Scale (The Way I Feel About Myself) (1969) was administered to each treatment subgroup during the first week of the project.

The subjects were given the answer sheets and a pencil at the beginning of the testing period. The test administrator (i.e., the author or her teaching assistant) reminded the students that their input was to be used in assessing the summer music program, their answers would not be looked at until the end of the Summer Program, and their scores would not be identified by name. Staff members who were present assisted by helping to maintain quiet in the room.

The directions were read to each group. Group I students then read the items silently and completed their answer sheets. Each item was read to Groups II and III because there were nonreaders in those groups. The tests were completed in approximately 20 minutes, and

the students were asked to place their answer sheets in a manilla envelope.

Each subject was present to take the test at his designated time.

#### Attitude toward music class and self in music class

The attitude test was given to Groups I, II, and III during their assigned music times on a Thursday before and after treatment. It was taken immediately prior to the MAT measure and took approximately 10 minutes to complete.

The students were given the test blanks and a pencil and were reminded to be honest while answering the questions, that their answers would not be looked at until the end of the summer, and that their ratings would not be identified by name. The author placed an example on the board (i.e., My music class is happy - sad.) and demonstrated how to place an "X" on the appropriate face/adjective. She showed a positive, a negative, and a neutral answer. Then she read through each item and asked the children to respond as she paused between questions. The students placed their completed forms in a manilla envelope.

The student who was removed from the pretest and the two who were absent from the posttest completed their forms on the mornings following their scheduled test times.

An overall mean score was determined for each child's pre and posttest. A rating of "1" indicated a negative response while "7" indicated a positive one. A rating of "4" showed a neutral response.

### Self-evaluative statements

Each subject was interviewed on a one-to-one basis by either the author or her teaching assistant both before and after treatment. His responses were written on answer forms, and a cassette tape recording was made of each interview. The subject was told that his responses were being recorded to allow the author to doublecheck them at a later time and that they would not be identified by name. The interviewers asked the questions in a pleasant tone of voice, used much eye contact, and encouraged the subjects to respond if they were reluctant to do so without prompts.

Each child was asked to provide descriptive data and information about his musical background. Then he was asked to verbally identify his musical skills and positive behavioral contributions to the music classes. Finally, he was asked to rate his musical skills and the frequency of his behavioral contributions on a 5-point scale. The interviewers left the table before each subject rated himself and asked the child to place the interview sheet in a file folder when he was finished.

After the treatment was over, the tapes and forms were reviewed by the author. The number of positive comments made independently and with prompts were counted. A person who was not involved in the project listened to several of the interviews and was in 100% agreement with the author about the number of independent and prompted responses. The answers to the bottom two questions were changed to a 1 to 5 numerical scale with "1" meaning a negative response and "5" indicating a positive response.

### Off-task behavior

A trained observer took data on six days during 34 sessions. Each treatment group was observed six times except the music therapy portion of Group I and the music education portion of Group III who were each seen five times. A counterbalanced observational schedule was set up to take into account treatment, teacher, and time of observation (i.e., early or late in a session).

A trained reliability observer took data on two days during 12 sessions. Neither she nor the observer were told which treatment they were observing at any given time.

The observers scanned each group from left to right once during a 10-second interval. During the following 10 seconds, they recorded the activity taking place, number of off-task students, number of students in the room, and any pertinent comments. A cassette tape cued them as to when to observe and when to record. Each observation was 10 to 15 minutes long, and data were recorded for between 30 and 45 10-second intervals.

Data were taken on two additional days when guest musicians demonstrated instruments to Groups I, II, and III in their entireties. These data were not included in the analysis.

The percentage of time spent in each activity and the percentage of off-task behavior by activity were calculated for each observation.

## RESULTS

### Descriptive Data

Table 3 shows the breakdown of mean ages, grades, lengths of stay at the facility, and attendance by treatment groups and subgroups. A series of independent  $t$  tests comparing treatment group means indicated that there were no significant differences in these variables nor in the number of males/females assigned to each treatment. It seemed then that the treatment groups were equivalent and that comparisons between their mean scores could be made. The unequal sizes of the treatment subgroups resulted from three subjects who shifted from one Summer Program group to another and two others who began but did not complete the treatment phase of the project.

The subjects who shifted between groups did so either very early or very late in the treatment phase; their data are included in the subgroups' information files in which they spent the bulk of their time.

### Music Learning

Mean scores for each part of the MAT (i.e., pitch discrimination, interval discrimination, and instrument identification) as well as a composite mean were determined for the treatment groups and subgroups and the intact original groups. A series of analyses of covariance on the posttest means with pretest scores as covariates indicated that there were no significant differences between treatment group or intact group scores on the whole test or its parts.



Table 3

Subjects' Mean Ages, Grades, Lengths of Stay at Facility  
and Attendance by Treatment Groups

Music Treatment	<u>n</u> Males/Females	Means			
		Age	Grade	Stay <sup>a</sup>	Attendance <sup>b</sup>
		<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>
<u>Therapy</u>					
Ia	5	13.20	7.20	3.00	11.80
	4/1	1.10	1.79	1.41	2.28
IIa	3	12.00	6.67	3.33	12.67
	3/0	2.00	1.53	1.15	1.53
IIIa	4	11.25	4.75	2.50	11.00
	2/2	1.26	1.50	0.58	0.82
Subtotal	12	12.25	6.25	2.92	11.75
	9/3	1.54	1.86	1.08	1.71
<u>Education</u>					
Ib	2	12.50	7.00	3.00	10.50
	1/1	0.71	0.00	0.00	4.95
IIb	5	12.80	6.60	2.60	11.40
	5/0	0.45	1.52	1.52	1.14
IIIb	4	10.50	4.00	2.75	11.25
	3/1	1.91	2.16	1.26	2.06
Subtotal	11	11.91	5.73	2.73	11.18
	9/2	1.58	2.05	1.19	2.09
Total	23	12.09	6.00	2.83	11.48
	18/5	1.53	1.93	1.11	1.88

<sup>a</sup>Length of stay: 1 = one month or less; 2 = one to six months;  
3 = six months to one year; 4 = over one year.

<sup>b</sup>Number of sessions attended out of 14 treatment sessions.

Composite pre, post, and gain scores are presented in Tables 4 and 5. All of the groups and subgroups made positive gain scores between the pre and the posttests with the exception of the music therapy part of Group II. The first and second hypotheses were not rejected.

Table 4

Mean MAT Pre, Post, and Gain Scores by Treatment Groups

Music Treatment	Pre	<u>s</u>	Post	<u>s</u>	Gain	<u>s</u>
Therapy	28.25	6.74	29.08	6.68	0.83	5.42
Education	26.18	8.47	31.27	7.50	5.09	4.99
	**					
Total	27.26	7.51	30.13	7.01	2.87	5.55
	*					

Note. There were a total of 63 possible items.

\* $p < .05$ .

\*\* $p < .01$ .

A two-way analysis of variance indicated that there was no significant interaction effect on MAT gain scores between the instructional treatments and the subject variable of intact group. The third hypothesis was not rejected.

Correlated t tests were used to check for significance between pre and posttest scores for the treatment groups and all subjects. It was found that the music education treatment group and the total group scored significantly higher on the posttest than they did on the pretest,  $t(10) = 3.38$ ,  $p < .01$ ;  $t(22) = 2.48$ ,  $p < .05$ . The

Table 5

Mean MAT Pre, Post, and Gain Scores  
by Treatment Subgroups and Intact Groups

Music Treatment/ Group	Pre	<u>s</u>	Post	<u>s</u>	Gain	<u>s</u>
<u>Therapy</u>						
Ia	30.00	10.37	33.20	7.85	3.20	6.72
IIa	26.00	3.46	23.33	3.05	-2.67	1.15
IIIa	27.75	2.22	28.25	3.59	0.50	5.00
<u>Education</u>						
Ib	26.50	0.71	32.00	2.83	5.50	2.12
IIb	29.80	10.31	33.60	9.91	3.80	2.59
IIIb	21.50	6.81	28.00	5.48	6.50	8.19
<u>Group</u>						
Ia,b	29.00	8.64	32.86	6.54	3.86	5.67
IIa,b	28.37	8.24	29.75	9.33	1.37	3.93
IIIa,b	24.62	5.76	28.12	4.29	3.50	7.05

Note. There were a total of 63 possible items.

fourth hypothesis was rejected.

A correct response mean of 43.3% was achieved on the pretest as opposed to 47.8% correct on the posttest by the total group. The music therapy treatment group's and the music education group's mean correct pretest scores were 44.8% and 41.6% respectively while their mean correct posttest scores were 46.2% and 49.6%.

### Self Esteem

#### General

Mean self concept ratings on the Piers-Harris Children's Self Concept Scale are found in Table 6. The treatment, group, and total scores ranged from 47.91 to 53.42 on an 80-item measure. These scores fall in the low range of what is considered to be an average self concept.

The subgroup differences were generally caused by one subject's reporting either a very high or a very low self concept.

Independent t tests indicated that there were no significant differences ~~between~~ treatment or group mean scores.

#### Attitude toward music class and self in music class

The attitude test was assumed to be unidimensional. Therefore, only the composite mean attitude ratings toward self in music class were used in the analysis of the data.

The mean attitude ratings for the treatment groups are found in Table 7. It should be noted that slight gains in ratings were made by both treatment groups although an analysis of covariance using the

Table 6  
Mean Piers-Harris Self Concept Scores

Music Treatment/Group	Score	<u>s</u>
<u>Therapy</u>		
Ia	42.80	3.63
IIa	67.33	5.69
IIIa	56.25	12.09
Subtotal	53.42	12.55
<u>Education</u>		
Ib	67.50	4.95
IIb	39.60	21.81
IIIb	48.50	11.09
Subtotal	47.91	18.47
<u>Group</u>		
Ia,b	49.86	12.58
IIa,b	50.00	22.07
IIIa,b	52.37	11.51
Total	50.78	15.55

Note. A score of 80 is possible on this test. Average scores range from 46 to 60.

pretest means as the covariate indicated that there was no significant difference between the posttest ratings. Each of the pre and post mean attitude ratings was on the positive side of the 7-point scale with scores ranging from 5.18 to 6.05. The fifth hypothesis was not rejected.

Table 7

Mean Ratings of Attitude Toward Music Class and Self  
in Music Class by Treatment Groups

Music Treatment	Pre	<u>s</u>	Post	<u>s</u>	Gain	<u>s</u>
Therapy	5.58	1.24	5.72	1.49	0.13	1.57
Education	5.18	1.40	6.05	1.02	0.87	0.95
Total	5.39	1.30	5.88	1.27	0.49	1.34

Note. A 7-point scale was used with a 1 indicating a strongly negative attitude and a 7 indicating a strongly positive attitude.

Table 8 shows the mean ratings of attitude for the treatment subgroups and the intact groups. An analysis of covariance using the pretest means as the covariate indicated that there were no significant differences between the intact groups' posttest ratings. The sixth hypothesis was not rejected. It should be noted, however, that Group Ia,b's mean posttest rating was 4.97 while Group II's and Group III's ratings were 6.32 and 6.22 respectively. This difference approached significance as indicated by an analysis of covariance using the pretest as the covariate,  $F(2,19) = 3.29$ ,  $p = .059$ .

Table 8

Mean Ratings of Attitude Toward Music Class and Self  
in Music Class by Treatment Subgroups and Intact Groups

Music Treatment/ Group	Pre	<u>s</u>	Post	<u>s</u>	Gain	<u>s</u>
<u>Therapy</u>						
Ia	5.24	1.53	4.46	1.44	-0.78	1.64
IIa	5.10	1.15	7.00	0.00	1.90	1.15
IIIa	6.37	0.58	6.32	0.79	-0.05	0.26
<u>Education</u>						
Ib	5.25	2.47	6.25	1.06	1.00	1.41
IIb	5.62	1.14	5.92	1.12	0.30	0.83
IIIb	4.60	1.40	6.12	1.16	1.52	0.54
<u>Group</u>						
Ia,b	5.24	1.61	4.97	1.53	-0.27	1.69
IIa,b	5.42	1.09	6.32	1.01	0.90	1.21
IIIa,b	5.49	1.37	6.22	0.92	0.74	0.93

Note. A 7-point scale was used with a 1 indicating a strongly negative attitude and a 7 indicating a strongly positive attitude.

A two-way analysis of variance indicated that there was no significant interaction effect on the attitude gain scores between the instructional treatments and the subject variable of intact group. The seventh hypothesis was not rejected.

A correlated  $t$  test was used to determine whether the difference between the overall pretest rating (i.e., 5.39) and the posttest rating (i.e., 5.88) was significant. It was not, although significance was approached,  $t(22) = 1.745$ ,  $p = .095$ . The eighth hypothesis was not rejected.

Low and statistically insignificant correlations were found between the Piers-Harris self concept scores and the attitude pretest for both treatment groups and the overall group (i.e.,  $r = .22$ ,  $r = .22$ , and  $r = .24$  respectively). The music therapy group, however, had a posttest correlation of .79 indicating that a strongly positive relationship existed between their self concept and attitude scores. The music education treatment group showed a .41 correlation for the same measures while the overall correlation was .53. The music therapy group's and overall group's coefficients were statistically different from zero while the music education group's was not.

#### Self-evaluative statements

The mean number of unprompted positive verbal comments made regarding the subjects' musical skills and behavioral contributions to their music classes may be found in Tables 9 and 10. Through an analysis of covariance using pretest numbers as covariates, it was determined that there were no significant differences between the



treatment or group posttest means. The ninth and tenth hypotheses were not rejected.

Table 9

Mean Number of Positive Verbal Comments Made by Treatment Groups

Music Treatment	Music			Behavior			Total		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>
Therapy	1.25	2.17	0.92	1.33	1.75	0.42	2.58	3.92	1.33
	1.14	1.47	1.89	1.61	0.75	1.56	2.43	1.88	2.87
Education	1.09	1.73	0.64	0.36	1.27	0.91	1.45	3.00	1.55
	0.83	0.90	0.81	0.67	0.79	0.70	1.29	1.41	1.29
Total	1.17	1.96	0.78	0.87	1.52	0.65	2.04	3.48	1.43
	0.98	1.22	1.44	1.32	0.79	1.23	2.01	1.70	2.21

\* $p < .05$ .

\*\* $p < .01$ .

Two-way analyses of variance indicated that there were no significant interaction effects on the gain number of positive musical, behavioral, or total comments made between the instructional treatments and the subject variable of intact group. The eleventh hypothesis was not rejected.

It is interesting to note, however, that the students made less positive statements about their behaviors than about their musical skills in both the pre and post treatment interviews. It should also be noted that the music therapy portion of Group II was the only

Table 10

Mean Number of Positive Verbal Comments  
Made by Treatment Subgroups and Intact Groups

Music Treatment/ Group	Music			Behavior			Total		
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>
<u>Therapy</u>									
Ia	0.80	1.80	1.00	1.00	1.40	0.40	1.80	3.20	1.40
	0.84	1.48	1.22	0.71	0.89	0.55	1.30	1.79	1.34
IIa	2.67	2.33	-0.33	2.33	1.67	-0.67	5.00	4.00	-1.00
	0.58	0.58	0.58	3.21	0.58	2.89	3.61	1.00	2.65
IIIa	0.75	2.50	1.75	1.00	2.25	1.25	1.75	4.75	3.00
	0.96	2.08	2.87	0.82	0.50	0.96	1.71	2.50	3.74
<u>Education</u>									
Ib	1.50	1.00	-0.50	0.50	1.00	0.50	2.00	2.00	0.00
	0.71	0.00	0.71	0.71	0.00	0.71	1.41	0.00	1.41
IIb	1.00	2.00	1.00	0.40	1.40	1.00	1.40	3.40	2.00
	1.00	1.00	0.71	0.89	0.55	0.71	1.67	1.34	1.22
IIIb	1.00	1.75	0.75	0.25	1.25	1.00	1.25	3.00	1.75
	0.82	0.96	0.50	0.50	1.26	0.82	0.96	1.83	0.96
<u>Group</u>									
Ia,b	1.00	1.57	0.57	0.86	1.29	0.43	1.86	2.86	1.00
	0.82	1.27	1.27	0.69	0.76	0.53	1.21	1.57	1.41
IIa,b	1.62	2.12	0.50	1.12	1.50	0.38	2.75	3.62	0.87
	1.19	0.83	0.93	2.10	0.53	1.85	2.96	1.19	2.29
IIIa,b	0.87	2.12	1.25	0.62	1.75	1.13	1.50	3.87	2.37
	0.83	1.55	1.98	0.74	1.03	0.83	1.31	2.23	2.61

subgroup to state a smaller number of positive comments in the post-test than in the pretest.

Correlated  $t$  tests indicated that significantly more musical, behavioral, and total positive comments were made during the post-test interviews than during the pretest interviews,  $p < .05$ ,  $p < .05$ ,  $p < .01$ . The twelfth hypothesis was rejected.

Tables 11 and 12 contain the mean ratings of music skills and behavior in music class as determined by each subject's circling a single question's answer in each of these areas immediately following the pre and posttest interviews. Analyses of covariance using the pretests as the covariates for treatment and intact groups indicated that there were no significant differences in either musical or behavioral ratings. Furthermore, correlated  $t$  tests between overall music skill and behavioral pre and posttest ratings showed that there was no significant difference in either area. There was a very slight overall gain in posttest musical skill ratings while all groups dropped slightly or made no change on posttest behavioral ratings.

A series of correlations indicated that almost no relationship between a child's music test scores and his verbal and written assessment of his musical ability existed. In addition, there were only small relationships between the Piers-Harris self concept scores and the music skill ratings as well as between the attitude measures and the music skill ratings.

Correlations between the pre and posttest verbal comments and the corresponding written ratings pertaining to positive behavior as well as between the pretest verbal comments and written ratings of music

Table 11

Mean Ratings of Music Skills and Behavior  
in Music Class by Treatment Groups

Music Treatment	Music Skills			Behavior		
	Pre	Post	Gain	Pre	Post	Gain
	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>
Therapy	4.00	4.25	0.25	4.42	4.17	-0.25
	1.13	0.87	1.22	0.67	0.72	0.87
Education	3.64	3.55	-0.09	3.91	3.55	-0.36
	1.50	1.51	0.94	0.83	0.93	0.81
Total	3.83	3.91	0.09	4.17	3.87	-0.30
	1.30	1.24	1.08	0.78	0.87	0.82

Note. A 5-point scale was used with 1 indicating a low rating and 5 indicating a high rating.

skills ranged from .30 to .33 and were not significantly different from zero. The overall correlation between the number of posttest comments and written ratings regarding music skills was .45 and was significantly different from zero. The correlation of these posttest measures for the music therapy and music education treatment groups were .61 and .34 respectively. It is interesting to note that these are changes from pretest correlations of -.07 and .75 for the respective treatment groups. There was a large increase in the relationship between verbal and written assessments of music skills for the music therapy group while there was a decrease in the relationship between these measures for the music education group. Little relationship existed between these assessments for subject behavior

Table 12

Mean Ratings of Music Skills and Behavior  
in Music Class by Treatment Subgroups and Intact Groups

Music Treatment/ Group	Music Skills			Behavior		
	Pre	Post	Gain	Pre	Post	Gain
	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>	<u>s</u>
<u>Therapy</u>						
Ia	4.60	4.20	-0.40	4.40	4.20	-0.20
	0.89	1.10	0.89	0.89	0.84	1.30
IIa	3.67	4.33	0.67	4.33	4.33	0.00
	1.15	0.58	0.58	0.58	0.58	0.00
IIIa	3.50	4.25	0.75	4.50	4.00	-0.50
	1.29	0.96	1.71	0.58	0.82	0.58
<u>Education</u>						
Ib	4.50	4.50	0.00	4.50	4.50	0.00
	0.71	0.71	0.00	0.71	0.71	0.00
IIb	3.40	3.60	0.20	4.00	3.60	-0.40
	1.52	1.67	1.10	1.00	0.89	0.55
IIIb	3.50	3.00	-0.50	3.50	3.00	-0.50
	1.91	1.63	1.00	0.58	0.82	1.29
<u>Group</u>						
Ia, b	4.57	4.29	-0.29	4.43	4.29	-0.14
	0.79	0.95	0.76	0.79	0.76	1.07
IIa, b	3.50	3.87	0.37	4.12	3.87	-0.25
	1.31	1.36	0.92	0.83	0.83	0.46
IIIa, b	3.50	3.62	0.12	4.00	3.50	-0.50
	1.51	1.41	1.46	0.76	0.93	0.93

Note. A 5-point scale was used with 1 indicating a low rating and 5 indicating a high rating.

in either the pre or posttest.

### Off-Task Behavior

The mean percentage of time spent in 10 types of activities and the mean percentage of off-task behavior by activity are found in Table 13. The activities can be ranked as follows beginning with the one given the most time and ending with the one given the least amount of time: Listening, teacher/student talk, playing instruments, getting ready, teacher talk, singing, moving, singing and playing, other, and composing.

Observer reliability on activities seen was determined by dividing the number of intervals in which the observers agreed by the total number of intervals for each of the 12 sessions. Agreement ranged from 69.4% to 100% with a mean of 83.2%.

Observer reliability on off-task behavior recorded was determined by dividing the number of intervals in which the observers were in exact agreement as to the number of off-task children present by the total number of intervals for each observation. Their agreement ranged from 41.2% to 100% with a mean of 77.5%.

The mean percentage of off-task behavior was 8.97%, and it ranged from 4.26% in moving activities to 15.8% in composing activities. Most of the off-task behavior means fell close to the overall off-task mean.

To analyze the off-task data, every activity was assigned a code number and the mean percentage of off-task behavior for each activity that occurred in a given session was entered into the computer along

Table 13

Mean Percentage of Time Spent in Activities and Off-Task Behavior

Activity	Number of Observations <sup>a</sup>	% of Time $\bar{s}$		% Off-Task $\bar{s}$	
Teacher Talk	26	9.54	9.42	6.04	10.38
Teacher/Student Talk	29	18.06	14.13	8.92	11.39
Singing	11	9.06	16.66	8.54	9.92
Listening	22	18.29	20.39	8.31	10.70
Playing	20	18.03	23.74	7.64	10.84
Moving	8	6.26	13.75	4.26	7.94
Singing & Playing	5	5.14	12.81	8.21	8.82
Composing	2	1.29	6.36	15.87	3.00
Getting Ready	34	10.17	5.90	13.49	15.42
Other	3	3.92	11.83	7.89	13.67
Total	160	99.76	-----	$\bar{X} = 8.97$	11.81

Note. The activities singing & moving and verbal rhythms are not included because no time was spent in either of them.

<sup>a</sup>There were 34 observations included in the analysis.

with the appropriate code number and the independent variables of treatment, teacher, and group. Entries from the 34 observations totaled 160.

To investigate these findings further, 29 observations in the activity categories of singing, moving, singing and playing, composing, and other were eliminated. The remaining categories of teacher talk, teacher/student talk, listening, playing, and getting ready occurred in from 20 to 34 of the sessions and were used as the activity variable in two-way analyses of variance and analyses of covariance. It is interesting to note that the largest percentages of time per session were also spent in these particular activities.

Off-task mean percentages were calculated for the activities, treatments, teachers, and intact groups and may be found in Table 14. The mean percentage of off-task behavior in the music therapy treatment group (i.e., 8.82%) was .85% lower than that found in the music education group. There was 5.01% more off-task behavior in sessions conducted by the teaching assistant than there was in the instructor's sessions. Group II was off-task a mean of 14% per session while Groups I and III were off-task 5.04% and 6.61% respectively per observation. The mean off-task behavior for the 131 observations was 9.24% ( $s = 12.33$ ), and the observations were almost evenly split between treatments, teachers, and intact groups.

In both one-way analyses of variance and a two-way analysis of variance, it was found that there were no significant differences between off-task behavior means for the five activities or the treatment groups. The thirteenth hypothesis was not rejected.



Table 14

Mean Percentage of Off-Task Behavior  
for Four Independent Variable Groupings

Independent Variables	No. of Obs.	% Off-Task	<u>s</u>
<u>Activity</u>			
Teacher Talk	26	6.04	10.38
Teacher/Student Talk	29	8.92	11.39
Listening	22	8.31	10.70
Playing Instruments	20	7.64	10.84
Getting Ready	34	13.49	15.42
<u>Treatment</u>			
Music Therapy	66	8.82	11.77
Music Education	65	9.67	12.95
<u>Teacher</u>			
Instructor	64	6.69	10.35
Teaching Assistant	67	11.70	
<u>Group</u>			
Ia, b	43	5.04	8.74
IIa, b	44	14.00	
IIIa, b	44	8.61	11.03

\* $p < .05$

\*\* $p < .01$

A series of two-way analyses of variance indicated that there was no significant interaction effect on off-task behavior between the music class activities and each of the variables of treatment, teacher, and group. The fourteenth hypothesis was not rejected.

Group, however, accounted for significance when treatment was eliminated,  $\underline{F} (2,125) = 6.25, p < .003$ ; when teacher was eliminated,  $\underline{F} (2, 125) = 6.92, p < .002$ ; and when activity was eliminated,  $\underline{F} (2,116) = 6.28, p < .003$ . The teacher variable accounted for significance in the two-way analyses of variance when treatment was eliminated,  $\underline{F} (1,127) = 5.96, p < .02$ ; when group was eliminated,  $\underline{F} (1,125) = 6.78, p < .02$ ; and when activity was eliminated,  $\underline{F} (1,121) = 4.42, p < .04$ .

Four analyses of covariance were also run for the dependent off-task measure using each of the independent variables as a breakdown with the remaining variables used as covariates. It was again found that there were no significant differences when the means were broken down by treatment or activity. Significant differences did occur when teacher was used as the breakdown variable,  $\underline{F} (1,126) = 6.88, p = .01$  and when group was used as a breakdown variable,  $\underline{F} (2,125) = 7.20, p = .001$ .

It may be concluded that there were no significant differences in off-task behavior in the treatment groups or various activities. There was significantly less off-task behavior in the instructor's sessions than in the teaching assistant's sessions. There was significantly more off-task behavior in Group II than in the other groups.

Finally, it is interesting to note that there was virtually no

off-task behavior during the instrument demonstrations that were presented by two guest musicians.

#### Summary

There were no significant differences between the treatment groups' mean ages, grade, gender, length of time spent at the facility, attendance rates for the treatment phase of the Summer Program, or scores on the Piers-Harris self concept measure. The subjects' scores on the latter measure reflected self concepts that fall in the low part of the average range.

There were no significant differences between the treatment groups' mean scores on any of the dependent music learning or self esteem measures.

Few correlations between the dependent tests were found although there were positive relationships between the Piers-Harris self concept scores and the posttest attitude toward self in music class ratings for the music therapy group ( $r = .79$ ) and the overall group ( $r = .53$ ) that were not present in their pretests or for the music education treatment group at all.

There were significant pre to posttest gains made by the whole group on the MAT and positive comments (musical, behavioral, and total) measures. No overall significant gain in attitude toward self in the music class setting was made.

Finally, there were no significant differences between the amount of off-task behavior observed during various types of activities or between the treatment groups. Significant differences were found

between both teacher and group breakdowns of off-task behavior.

No significant interactions were found on the MAT and self esteem measures between treatments and intact groups. There were no significant interactions on off-task behavior between activity and each of the variables treatment, teacher, and group.

The results had the following effects on the study's hypotheses:

1. There is no difference between music learning gain scores of severely emotionally impaired students in a music education versus a music therapy instructional setting. Failed to reject.
2. There is no difference between music learning gain scores of the intact groups of severely emotionally impaired students. Failed to reject.
3. There is no significant interaction effect on music learning between the instructional treatments and the subject variable of intact group. Failed to reject.
4. There is no difference between music learning pre and post-test scores of severely emotionally impaired students following music instruction. Rejected.
5. There is no difference between changes of attitude toward self in music classes by severely emotionally impaired students in a music education versus a music therapy instructional setting. Failed to reject.

6. There is no difference between changes of attitude toward self in music classes by the intact groups of severely emotionally impaired students. Failed to reject.
7. There is no significant interaction effect on attitude toward self in music classes between the instructional treatments and the subject variable of intact group. Failed to reject.
8. There is no difference between pre and posttest ratings of attitude toward self in music class by severely emotionally impaired students following music instruction. Failed to reject.
9. There is no difference between the number of behaviors (musical and nonmusical) verbally identified as areas of strength by severely emotionally impaired students in a music therapy versus a music education instructional setting. Failed to reject.
10. There is no difference between the number of behaviors (musical and nonmusical) verbally identified as areas of strength by the intact groups of severely emotionally impaired students. Failed to reject.

11. There is no significant interaction effect on the number of behaviors (musical and nonmusical) verbally identified as areas of strength between the instructional treatments and the subject variable of intact group. Failed to reject.
12. There is no difference between the pre and post number of behaviors (musical and nonmusical) verbally identified as areas of strength by severely emotionally impaired students. Rejected.
13. There is no difference in the amount of off-task behavior by emotionally impaired students during such activities as teacher talking, student singing, listening to music, playing instruments, moving to music, creating music, or getting ready for learning activities. Failed to reject.
14. There is no significant interaction effect on off-task behavior between the music class activities and each of the variables of treatment, teacher, and group. Failed to reject.

## DISCUSSION

### General Comments

The design used in this study seemed to be an effective one. The randomized treatment groups were found to be equivalent in several independent variable areas (i.e., age, gender, grade, length of stay at the facility, and attendance in the summer music program) as well as on the scores from the Piers-Harris Children's Self Concept Scale. Teacher differences were controlled for by having the subgroups work with each instructor during half of the treatment sessions in a counterbalanced order. Furthermore, the observation schedule was counterbalanced to account for treatment and teacher differences as well as time of observations (i.e., early or late in a session).

The children were able to complete all of the written test measures with a minimal amount of difficulty. The adapted answer formats seemed to be appropriate.

There were no significant differences between the treatment groups' mean scores on the MAT, attitude test, number of positive comments measure, and the musical skills/behavioral contributions ratings. Differences between the MAT scores were not expected to occur since the music instruction was essentially the same for each treatment group.

Lack of significance on the self esteem measures may have been due to the treatments' not being adequately differentiated

particularly in the area of teacher verbal behavior. The instructors used positive reinforcement in both treatments and verbally identified behaviors that were appropriate; it is certain that individuals were singled out for compliments in the music education group as well as the music therapy group. The instructor's mixed training in both fields may have further clouded treatment differences. An investigation comparing music teacher and music therapists in special education music settings may have yielded different results.

Another problem in the study was that the intact groups were much smaller than originally expected. Twenty-five children began the study although approximately 40 had been projected. This nearly negated the paired and small group activities that were done with the music therapy subgroups. By virtue of its size, each of the subgroups in total could be defined as a small group.

The interpretation of significant overall pre to posttest gains on the MAT and verbal comments measure must be made with caution. When the data are examined in this way, one is essentially evaluating a one - sample design. Such possible influences as a test/retest effect and historical and maturational factors are not controlled for adequately. However, since improvement by individuals was observed on a session to session basis in aural musical abilities, it is thought that the music instruction did have an effect on the children's scores. There seems to be somewhat more doubt about the increase in positive comments made. A test/retest factor and the instructors' verbal positive feedback in both treatments may have had as much or more influence on the number of comments made than did the self-



evaluative verbal technique used in the music therapy treatment. The rejection of the twelfth hypothesis was done on a somewhat more tentative basis.

### Music Learning

The mean overall percentages of correct responses on the pre and post MAT were 43.3% and 47.8% respectively. Although the students' overall gain was significant, it is important to note that less than half of the questions were correctly answered on the posttest. This implies that a great deal more work needed to be done with the children in the areas of pitch and interval discrimination as well as instrument identification. A lengthier treatment period may have provided for additional musical learning.

A second problem with the MAT was that in class verbal trials, the children seemed much better able to perform aural discrimination tasks than their written test scores reflected. It appeared that they did not transfer what they could verbally identify into a written test format. Perhaps written practice exercises would have helped lessen the discrepancy.

It is interesting to note that the music therapy group did not make a significant gain on the MAT while the music education group did. This may be due to the fact that the subjects in Group IIa showed a negative gain score despite their improved abilities to aurally identify both pitch levels and interval types during the treatment sessions. When the posttest was administered, they did not seem to wait for the test items to be fully played before making

their written responses. In addition, one subject in the music education group showed a considerable gain score and appeared to concentrate much more intensely during the posttest than during the pretest.

### Self Esteem

#### General

The lower than average mean scores on the Piers-Harris Self Concept Scale were expected. The music therapy part of Group II, however, scored very high on the measure. This seemed to be incongruous with their observable behaviors and their low MAT scores. It appeared that their self concepts were unrealistically high and that perhaps they had little awareness of their actual poor behaviors and limited musical ability.

#### Attitude toward music class and self in music class

A major assumption in this study (i.e., that emotionally impaired children would hold low self concepts that needed to be built up) was incorrect. Several of the subjects seemed to overrate themselves particularly during the pretests. For these children a drop in attitude toward self and behavior ratings was probably more healthy than the increase which was originally projected to result from this study. A drop would indicate more congruence with actual behaviors that were seen. This seemed to be especially apparent in Group IIa.

In the middle of the treatment phase of the project, Group I was demoted to a nonhonor group status. From that point on their attitudes and cooperation worsened. Poor attitudes toward themselves,

the facility, and the Summer Program were verbalized and seemed to be confirmed by this demotion. This could explain their nearly significantly scoring lower than the other two groups on the attitude posttest.

The high correlations between the Piers-Harris self concept measure and the post attitude test for the music therapy group ( $\underline{r} = .79$ ) and the overall group ( $\underline{r} = .53$ ) lend support to the idea that the attitude measure reflected to some extent the children's self concepts. Neither the music therapy nor the music education group had significantly different from zero correlations between the Piers-Harris scores and the pretest attitude measure ( $\underline{r} = .22$  for both). The music therapy group, however, did have a significantly different from zero correlation between the Piers-Harris scores and the post attitude test ( $\underline{r} = .79$ ) while the music education group did not ( $\underline{r} = .41$ ). It is possible that the verbal comments and teacher feedback technique in the music therapy treatment could have helped the children become more aware of their self concepts and develop the ability to honestly assess themselves in terms of attitude and self rating. This seemed to happen with the children in Group IIa.

There were no significant overall gains on the attitude test by the sample or the treatment and intact groups. It may be that this measure reflects the stable self concept (as measured by the Piers-Harris scale) rather than a situational self concept that would be apt to change more readily. Perhaps this instrument is not appropriate to use when treatment phases of studies are of a short duration.

Finally, it was interesting to note that one child when rating her music class spoke of doing so in terms of her likes and dislikes of other children in the group.

#### Self-evaluative statements

There were at least two weaknesses in this technique. Fewer positive comments were made about behavioral contributions to the music groups than about each child's music skills. This could be due to better feelings about their musical abilities. It is more likely, however, that the question immediately preceding the musical skills one (i.e., ascertaining musical background) had an influence on the number of positive comments made.

A second weakness was that negative comments or the identification of areas in which a child could improve were not provided for in this study. Several clients showed some insight during the post treatment interviews by spontaneously identifying their weak areas; this was not accounted for in the data.

Although there was a slight increase in the music skills rating, the behavior measure showed a slight decline or no change for all of the treatment subgroups. Again, it would seem that behavioral ratings were brought more into line with observable behavior.

#### Off-Task Behavior

Off-task behavior when broken down by group or teacher was found to differ significantly. Children were originally assigned to Summer Program groups according, in part, to the inappropriate behaviors

one would expect to find. It is not surprising that off-task behavior differed significantly between the groups. It also seems logical that there would be more off-task behaviors during the teaching assistant's sessions than during the instructor's sessions because of her inexperience in working with groups of emotionally impaired children.

The fact that there were no significant differences between off-task behavior during specific activities might relate to the state/trait concept. Feelings that were present on a given day could have influenced a child's behavior throughout a session rather than differently for various activities. The large amount of variance in off-task behavior would seem to support the idea that state feelings influenced behavior on a particular day more than trait feelings.

There was 13.49% off-task behavior during the "getting ready" category. This could probably be decreased by structuring sessions very carefully and having equipment available prior to their start.

Greater percentages of off-task behavior occurred during the music sessions in this study than occurred with elementary school children in their music classes in Forsythe's study (1977). This is not surprising considering the fact that many of these children are working on attending behaviors as a major educational and behavioral goal. In addition, the small number of children in each session (e.g., sometimes as few as two) caused some off-task figures to appear very large.

It is interesting to note that virtually no off-task behavior occurred when guest musicians demonstrated instruments. It is probable that a halo effect caused by the presence of new teachers and

many instruments accounted for the excellent attending behavior. It could also be that the students were genuinely interested in hearing live instrument demonstrations and in playing some of the instruments themselves. Further research might show that instrumental music is effective with emotionally impaired children.

There were some observer discrepancies between the categories of teacher talk, teacher/student talk, and getting ready as well as between composing and playing instruments during observer activity reliability checks. It should also be noted that a low reliability coefficient (i.e., 41.2%) for off-task behavior was achieved for one session because the instructor's directions were not clearly understood, and the observers were unable to clearly define off-task behavior.

### Conclusions

While no strong support for a music education versus a music therapy approach to working with emotionally impaired children was found, significant overall gains were made in both music learning and in the number of positive comments the children made about their music skills and behavior in class. Music instruction seemed to be an appropriate way to work on the development of these skills.

Several general gains were noted during the summer. It appeared that functioning in small groups improved for all subjects. Peer cooperation and interaction increased in the final weeks of the Summer Program. The children's asking for music during the next school year seemed to indicate their enjoyment of and positive feelings

toward their participation.

Several of the subjects overrated their self concepts during the pretests and brought them more into congruence with actual behavior observed. Some members of the music therapy treatment group seemed to become adept at doing this as the summer progressed. The possibility of overrating self concepts had not been anticipated in the design of this project.

There was no clear indication regarding the amount of off-task behavior by activity. The students' behaviors may have been influenced more by situational (state) feelings than by the activities themselves. This does not provide much helpful information for planning sessions although one should expect to find much variance in the amount of off-task behavior present from session to session.

It seems logical that both music educational and therapeutic goals are desirable in special education music instruction. The issue does not seem to be whether a music teacher or a music therapist should provide services for handicapped children. A music specialist in either field who is sensitive to the handicapped's needs can work effectively. What does seem to be important, however, is that both aesthetic experiences and opportunities to work on non-musical behaviors be provided for special education children through music activities.

It is difficult to determine whether a music teacher's or a music therapist's training best provides for serving the handicapped's needs. Training in both areas may be desirable when working with emotionally impaired children. The author of this study found herself

drawing extensively from both fields.

### Recommendations

It is recommended that future research of this kind be done with a larger number of subjects in each treatment group and subgroup. Activities done in pairs and small groups would then be unique to the music therapy instructional setting.

It is further recommended that treatment differences be more pronounced particularly in regard to teacher reinforcement techniques. It was also apparent that it took some time for the students to become accustomed to talking seriously about their positive behaviors. Perhaps more time should be devoted to training the children to honestly assess their behaviors.

Self-evaluative measures of both a positive and negative nature would probably better assess a student's feelings about himself. While it is important to emphasize the positive, dealing with negative behaviors can also be valuable and effective.

It does not appear that the attitude measure used in this study reflected short-term changes. It seems to have measured the more stable self concept and may not be appropriate as a measurement device for short-term change. In addition, it is recommended that a factor analysis be done on this type of test to determine if it is uni- or multidimensional.

If an interviewing technique is used to elicit positive statements about students' music skills and behavioral contribution, it is recommended that a question relating specifically to musical background not be asked immediately prior to the open-ended questions.



There is liable to be a strong influence on the answers to the music skills question.

It is important that categories on observation forms be clearly defined and mutually exclusive. Great care needs to be taken both in devising the form and system of observation and in teaching people how to use it.

Although this study did not show it, it seems to be that off-task behavior occurs more frequently during activities in which not all participants are actively involved. It is recommended that further research be devoted to this topic.

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APPENDIXES

APPENDIX A

Tape # \_\_\_\_\_

VERBAL SELF-EVALUATION  
Summer Music Project

Student Number \_\_\_\_\_ Gender \_\_\_\_\_

Age \_\_\_\_\_ Cottage Unit \_\_\_\_\_

Student at Facility or Public School? \_\_\_\_\_

If public school, which one? \_\_\_\_\_

If facility, who is present teacher? \_\_\_\_\_

Number of years/months living at facility? \_\_\_\_\_

City student came from \_\_\_\_\_

Approximate grade in school \_\_\_\_\_

Musical background (e.g., school music, instrumental music, lessons)

\_\_\_\_\_

"What music skills do you feel you do well on? They could be in singing, playing instruments, and so on."

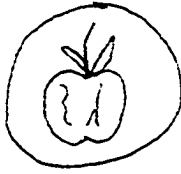
"What behaviors do you feel that you contribute to your music classes? These could be cooperating, listening, following directions, and so on."

How would you rate your own musical skills? (Circle one answer.)

Terrible      Not Very Good      Okay      Good      Excellent

How often would you say that you cooperate in music class, try hard, and listen to the staff and other students? (Circle one answer.)

Always      Most of the Time      Sometimes      Not Very Often      Never



## APPENDIX B

### MUSIC ACHIEVEMENT TEST

#### Part 1

#### Subtest a (Two Tones)

Compare two tones. Decide which is higher (1 or 2) or whether both tones are the same (S). Circle your answer for each question.

EXAMPLE A. 1    ②    S

EXAMPLE B. 1    2    S

1. 1    2    S

2. 1    2    S

3. 1    2    S

4. 1    2    S

5. 1    2    S

6. 1    2    S

7. 1    2    S

8. 1    2    S

9. 1    2    S

10. 1    2    S

11. 1    2    S

12. 1    2    S

13. 1    2    S

14. 1    2    S

15. 1    2    S



MUSIC ACHIEVEMENT TEST  
Part 1  
Subtest b (Three Tones)

Compare three tones. Decide whether the first (1), second (2), or third (3) is lowest. Circle your answer for each question.

EXAMPLE A. ① 2 3

EXAMPLE B. 1 2 3

16. 1 2 3

17. 1 2 3

18. 1 2 3

19. 1 2 3

20. 1 2 3

21. 1 2 3

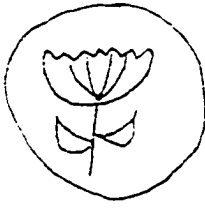
22. 1 2 3

23. 1 2 3

24. 1 2 3

25. 1 2 3





MUSIC ACHIEVEMENT TEST

Part 2  
Subtest a

Listen to a three-tone pattern. Decide if pattern is scalewise (Scale), if pattern leaps (Leap), or if you don't know (?). Circle your answer.

EXAMPLE A. Scale Leap ?      EXAMPLE B. Scale Leap ?

26. Scale Leap ?

27. Scale Leap ?

28. Scale Leap ?

29. Scale Leap ?

30. Scale Leap ?

31. Scale Leap ?

32. Scale Leap ?

33. Scale Leap ?

34. Scale Leap ?

35. Scale Leap ?



MUSIC ACHIEVEMENT TEST  
Part 2/Subtest b

Listen to a phrase. Decide if the phrase is generally scalewise (Scale), if phrase generally leaps (Leap), or if you don't know (?)/ Circle your answer.

EXAMPLE A. Scale Leap ?

36. Scale Leap ?

37. Scale Leap ?

38. Scale Leap ?

39. Scale Leap ?

40. Scale Leap ?

41. Scale Leap ?

42. Scale Leap ?

43. Scale Leap ?

44. Scale Leap ?

45. Scale Leap ?

46. Scale Leap ?

47. Scale Leap ?

48. Scale Leap ?

49. Scale Leap ?

50. Scale Leap ?

51. Scale Leap ?

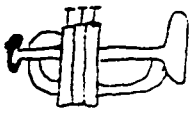
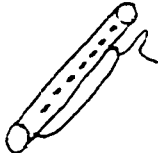


52. Scale Leap ?

53. Scale Leap ?

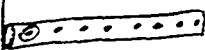



MUSIC ACHIEVEMENT TEST  
Part 4/Subtest 1

Listen to a short musical selection featuring one musical instrument.  
Select from four choices the name of the instrument featured. If no  
one of the instruments is featured, circle the empty square (None).  
Circle your answers.


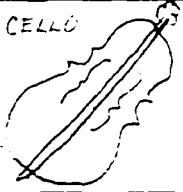

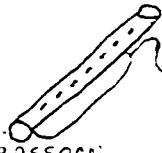
EXAMPLE

 TRUMPET	 BASSOON	 FRENCH HORN	 VIOLIN	None
--	--	--	---	------

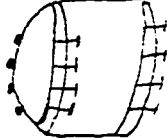
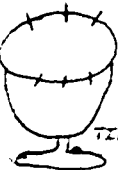
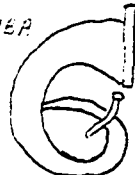

61.

 FLUTE	 CLARINET	 TRUMPET	 PICCOLO	None
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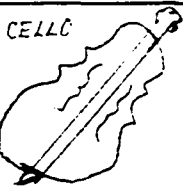
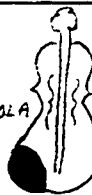

62.

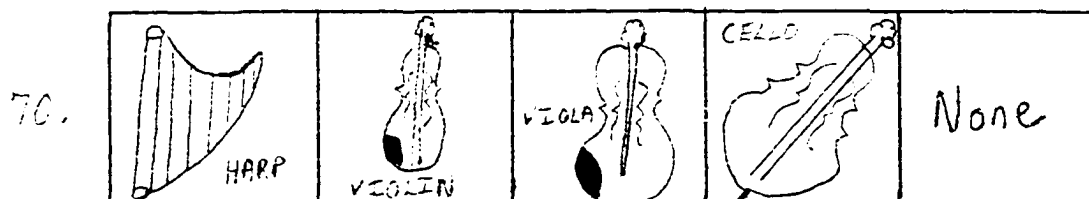
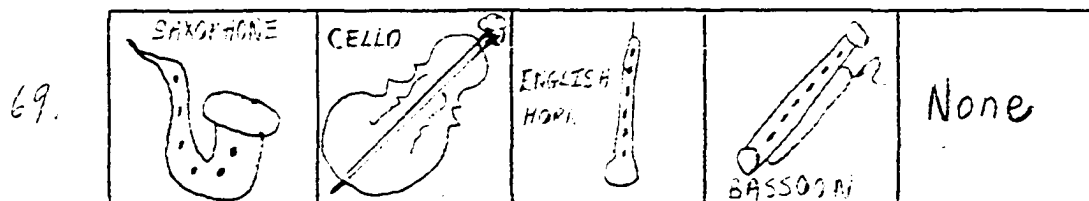
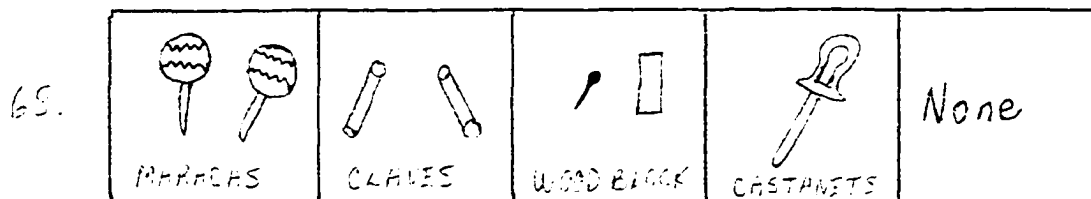
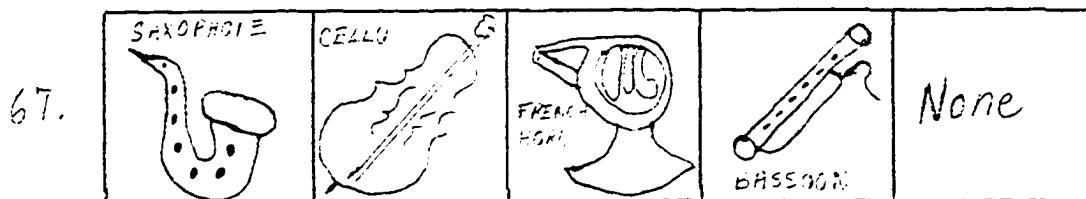
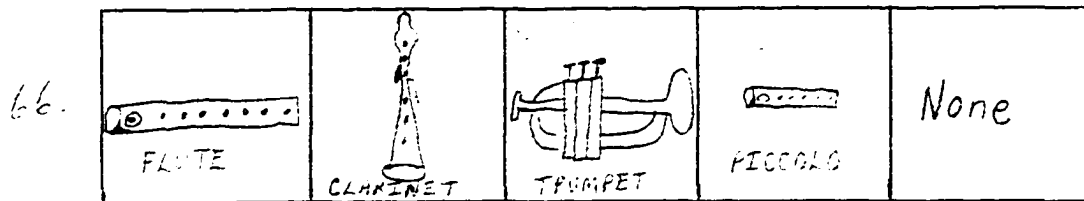
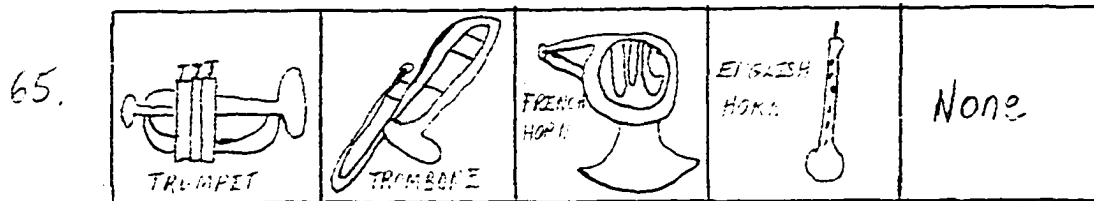
 VIOLA	 CELLO	 VIOLIN	 BASSOON	None
--	--	---	--	------

63.

 BASS DRUM	 TIMPANI	 TUBA	 CONGA DRUM	None
--	--	---	---	------

64.

 VIOLIN	 CELLO	 VIOLA	 CLARINET	None
---	--	--	---	------





# APPENDIX C

## MUSIC PROJECT/Student Questionnaire

1. My music class is



Very  
Important



Somewhat  
Important



A Little Bit  
Important



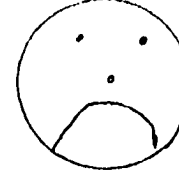
Neither  
Important Nor  
Unimportant



A Little Bit  
Unimportant



Somewhat  
Unimportant



Very  
Unimportant

2. In my music class, I feel



Very  
Wrong



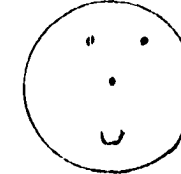
Somewhat  
Wrong



A Little Bit  
Wrong



Neither Wrong  
Nor Right



A Little Bit  
Right



Somewhat  
Right



Very  
Right

3. In my music class, I feel



Very  
Interested



Somewhat  
Interested



A Little Bit  
Interested



Neither  
Interested Nor  
Uninterested



A Little Bit  
Uninterested



Somewhat  
Uninterested



Very  
Uninterested



4. My music class is



Very  
Sour



Somewhat  
Sour



A Little Bit  
Sour



Neither Sour  
Nor Sweet



A Little Bit  
Sweet



Somewhat  
Sweet



Very  
Sweet

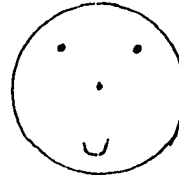
5. My music class is



Very  
Pleasant



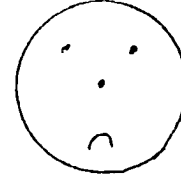
Somewhat  
Pleasant



A Little Bit  
Pleasant



Neither  
Pleasant Nor  
Unpleasant



A Little Bit  
Unpleasant



Somewhat  
Unpleasant



Very  
Unpleasant

6. In my music class, I feel



Very  
Unimportant



Somewhat  
Unimportant



A Little Bit  
Unimportant



Neither  
Unimportant Nor  
Important



A Little Bit  
Important



Somewhat  
Important



Very  
Important



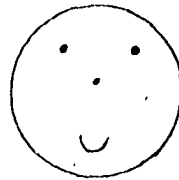
7. In my music class, I feel



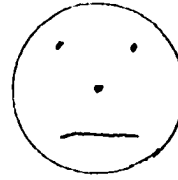
Very  
Happy



Somewhat  
Happy



A Little Bit  
Happy



Neither Happy  
Nor Unhappy



A Little Bit  
Unhappy



Somewhat  
Unhappy



Very  
Unhappy

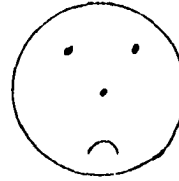
8. My music class is



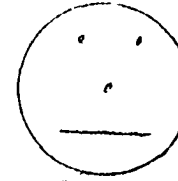
Very  
Unfriendly



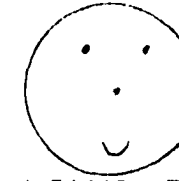
Somewhat  
Unfriendly



A Little Bit  
Unfriendly



Neither  
Unfriendly Nor  
Friendly



A Little Bit  
Friendly



Somewhat  
Friendly



Very  
Friendly

9. In my music class, I feel



Very  
Smart



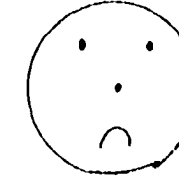
Somewhat  
Smart



A Little Bit  
Smart



Neither Smart  
Nor Dumb



A Little Bit  
Dumb



Somewhat  
Dumb



Very  
Dumb



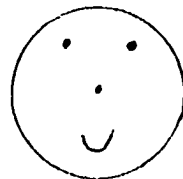
10. My music class is



Very  
Interesting



Somewhat  
Interesting



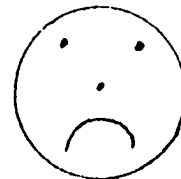
A Little Bit  
Interesting



Neither  
Interesting  
Nor  
Uninteresting



A Little Bit  
Uninteresting



Somewhat  
Uninteresting



Very  
Uninteresting



## APPENDIX D

## Observation Form

DATE \_\_\_\_\_

GROUP \_\_\_\_\_

TIME: START \_\_\_\_\_ END \_\_\_\_\_

INSTRUCTOR \_\_\_\_\_

TT Teacher talk  
 TST Teacher/student talk  
 S Students singing  
 L Students listening  
 P Students playing  
 instruments  
 M Students moving to music

S&M Students singing and moving  
 S&P students singing and playing  
 instruments  
 VR Verbal rhythm  
 C Composing  
 G Getting ready  
 O Other

Minute	Activity Code 1 3 5	(1)	2-Record # Off-Task # Present	(3)	4-Record # Off-Task # Present	(5)	6-Record # Off-Task # Present	Com- ments
1			/		/		/	
2			/		/		/	
3		OBSERVE	/	OBSERVE	/	OBSERVE	/	
4		OBSERVE	/	OBSERVE	/	OBSERVE	/	
5			/		/		/	
6			/		/		/	
7			/		/		/	
8		OBSERVE	/	OBSERVE	/	OBSERVE	/	
9		OBSERVE	/	OBSERVE	/	OBSERVE	/	
10			/		/		/	
11			/		/		/	
12			/		/		/	
13		OBSERVE	/	OBSERVE	/	OBSERVE	/	
14		OBSERVE	/	OBSERVE	/	OBSERVE	/	
15		OBSERVE	/	OBSERVE	/	OBSERVE	/	

OTHER COMMENTS &amp;/OR OBSERVATIONS: