

Rowan University

## Rowan Digital Works

---

Theses and Dissertations

---

5-15-2003

### Using background music to reduce off-task behaviors of students with learning disabilities

Lesa DeShield Givens  
*Rowan University*

Follow this and additional works at: <https://rdw.rowan.edu/etd>



Part of the [Special Education and Teaching Commons](#)

---

#### Recommended Citation

Givens, Lesa DeShield, "Using background music to reduce off-task behaviors of students with learning disabilities" (2003). *Theses and Dissertations*. 1308.

<https://rdw.rowan.edu/etd/1308>

This Thesis is brought to you for free and open access by Rowan Digital Works. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Rowan Digital Works. For more information, please contact [graduateresearch@rowan.edu](mailto:graduateresearch@rowan.edu).

USING BACKGROUND MUSIC TO REDUCE OFF-TASK BEHAVIORS OF  
STUDENTS WITH LEARNING DISABILITIES

By  
Lesa DeShield Givens

A Thesis

Submitted in partial fulfillment of the requirements of the  
Master of Arts in Special Education  
of  
The Graduate School  
at  
Rowan University  
May 9, 2003

Approved by \_\_\_\_\_  
Professor

Date Approved 5/15/03

© 2003 Lesa DeShield Givens

## ABSTRACT

Lesa DeShield Givens  
USING BACKGROUND MUSIC TO REDUCE OFF-TASK BEHAVIORS OF  
STUDENTS WITH LEARNING DISABILITIES  
2002/03  
Dr. Joy Xin  
Master of Arts in Special Education

Many children with learning disabilities (LD) frequently exhibit attention and motivational problems as well as impulsive and physically aggressive behaviors (Hoy & Gregg, 1994). Thus, learning, for these students, is a great challenge and for teachers, providing effective instruction is a great challenge, too. The purpose of this study was to evaluate the effects of background music on the classroom behavior of students with learning disabilities. A sample of 7 students with learning disabilities from grades 4 and 5 participated in this study. They received instruction in the language arts and math in two (2) special education resource classrooms. A single subject research design with ABAB phases was used. Baseline observation data was collected to determine areas of behavior problems. The data collection continued over the intervention phase when background music was played during independent work time for 3 weeks. Then the music was withdrawn for 2 weeks serving as the withdrawal phase. Subsequently, the music was played again for 3 weeks in the re-intervention phase to determine if there were any changes of student behaviors. The results show that there was a decrease of student off-task behaviors in the intervention phases when background music was utilized.

## ABSTRACT

Lesa DeShield Givens  
USING BACKGROUND MUSIC TO REDUCE OFF-TASK BEHAVIORS OF  
STUDENTS WITH LEARNING DISABILITIES  
2002/03  
Dr. Joy Xin  
Master of Arts in Special Education

This study was conducted to evaluate the effects of background music on the classroom behavior of students with learning disabilities (LD). Two medleys of instrumental harmonious music with elements of classical style were played at the back of the classroom during independent work time for two separate 3 week periods. Classroom observations were conducted using a behavioral checklist to record the behavior of 7 participating students: disorganization/unpreparedness, fidgetiness, failure to follow instruction, being out of seat, verbal disrespect, and verbal disruption. A single subject, ABAB reversal design was used in this study. The results show that there was a decelerating trend of off-task behavior occurrences during the intervention phases for most of the students.

## ACKNOWLEDGEMENTS

I thank the Almighty God for His strength and guidance which has enabled me to successfully pursue and attain this degree. With Him, ALL things are possible.

I also thank the wonderful gift of a husband God has given me, Willie, who is my true friend and soulmate. God bless you for your financial support, patience, encouragement, and your prayers.

A big thank you to our four lovely young daughters: Wosa, Keema, Lelai, and Kumbah for allowing Mommie to steal away and do her work when you wanted to play.

Many thanks to my parents and family members who have always encouraged and supported me in my endeavors and activities, and to a wonderful friend and colleague, Ethel, for her help and words of wisdom.

Finally, a special thanks and appreciation to Dr. Joy Xin who was the first instructor I encountered after I enrolled in this degree program; so, it is appropriate that she was my final instructor and research adviser. Her diligence, expertise, and sincerity are beyond compare.

## TABLE OF CONTENTS

Abstract	
Mini-Abstract	
Acknowledgements	
<b>CHAPTER 1: Introduction</b>	
Introduction.....	1
Statement of Problem	1
Significance of Study	6
Statement of Purpose	8
Research Questions	8
<b>CHAPTER II: Literature Review</b>	
Introduction.....	9
Classroom Behavior of Students with Learning Disabilities	11
General Effects of Music	14
Effects of Using Music in the Classroom	17
Effects of Using Music in the Classroom for Students with Learning Disabilities	20
Summary	23
<b>CHAPTER III: Method</b>	
Introduction.....	24
Sample	24
Research Design	27
Measurement	28
Materials	28
Procedure	29
Analysis of Data	31
<b>CHAPTER IV: Results</b>	
Results.....	32
<b>CHAPTER V: General Discussion</b>	
Discussion.....	36
Limitations	39
Implications	40
Recommendations for Future Research	40
<b>REFERENCES.....</b>	<b>42</b>
<b>APPENDICES.....</b>	<b>45</b>
Appendix A: Observation Data Sheet	45
Appendix B: Description of Musical Medleys	45
Appendix C: Parent Consent Form	46

## **Chapter I**

### **INTRODUCTION**

#### **Statement of Problem**

Teachers today are facing a crisis of students who are disrupting class instruction and frequently off task. These students are barely learning and are certainly not contributing to an environment conducive to learning. A substantial number of these students have learning disabilities. A learning disability is “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest itself in imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations”(Individuals with Disabilities Education Act Amendments[IDEA],1997, Sec. 602(26), p.13). These students may or may not be classified under the regulations of the law. It is important to note that this crisis is even more prevalent in special education classrooms.

Students with learning disabilities are plagued by a myriad of problems in cognitive, social, behavioral, emotional, and physical skill areas (Hoy & Gregg, 1994). They frequently exhibit problems with attention, impulsiveness, (such as talking out of turn and acting inappropriately), physical aggression, and motivation (Hoy & Gregg, 1994). They frequently perform far below their grade level expectancy, which fuels their feelings of anxiety and frustration. Many of the attention problems in students with learning disabilities stem from anxiety and depression (Silver & Connors, 1989;

Weinberg & McLean, 1986, in Hoy & Gregg, 1994). With their varied handicaps, learning, for these students, presents a great challenge. Providing effective instruction to these students can also pose a great challenge.

According to Piaget, (Hoy & Gregg, 1994), the student between the ages of five (5) and eleven (11), are still in the first two stages of development and learning. At this crucial learning age, elementary students will benefit greatly if good learning habits, proper structure, and positive attitudes are fostered.

Piaget, a developmental theorist, believes that a person's intelligence develops in stages—each building upon the preceding stage as learning moves from concrete to abstract (Piaget, 1971, in Hoy & Gregg, 1994). The first stage is the sensorimotor stage (birth to 24 months) during which a child realizes that objects do exist and will discriminate between objects and himself. He/she is not yet able to engage in imaginative play. The next stage is the preoperational stage (24 months to 7 years). The child at this time is learning to associate objects to him/herself and give meaning to objects. The child also realizes that there are causes and effects in his/her environment. Imaginative play is evident, but the child's thinking is still very irrational and limited to what is visible, concrete and tangible. From age seven to age eleven, the child is learning how to think a little more abstractly and independently. This is the concrete operations stage. The last stage of development is the formal operations stage (age 11 and beyond). During this period, the child's reasoning and logic skills develop to even more abstract levels.

Students with learning disabilities do not adequately perform the basic cognitive functions and processes to learn and to demonstrate learning success. They have difficulties responding to stimuli, receiving information from the stimuli by different



sensory means, analyzing and understanding the information received, connecting information to what they already know, maintaining the information, drawing upon the information they have maintained, and finally, applying the information they have maintained and retrieved (Hoy & Gregg, 1994).

Students with learning disabilities are frequently unorganized in and out of the classroom (Hallahan, Kauffman, & Lloyd, 1999). This disorganization interferes with and hinders their academic work, classroom routines, and tasks. Of course, there are many suggestions for the most effective approach to teaching those skills necessary to accomplish the tasks needed for learning (Hallahan et al., 1999).

Professionals have found learning disabilities may be related to an individual's neurological function (Hallahan et al., 1999). With the aid of advanced modern tools of assessment and study, professionals are able to back up this belief as brain abnormalities are detected and substantiated. They are also able to determine ways to help individuals. The brain is the primary tool in learning and is the major organ of the neurological system (Savage & Wolcott, 1995). According to Hallahan et al., (1994), if students cannot learn, the reason has to be rooted in brain dysfunction. Whether this dysfunction is from injury or genetic factor(s), there will be miscommunication or non-communication amongst the many brain elements (Savage & Wolcott, 1995). In essence, when conditions are such that the brain is stimulated to learn and learn properly, learning will occur.

Physicians have discovered that people with brain injuries have problems and symptoms that are like people who have learning disabilities without brain injuries (Hallahan et al., 1999). The implication here again is that the basis for the learning difficulties is rooted in neurological dysfunction. The human central nervous system

contains neurons, which are the primary cells for learning (Hallahan et al., 1999).

Neurons send and receive information to and from the brain. If a learner is not learning, obviously there has to be a breakdown in the function of these cells.

The two hemispheres of the human's brain are responsible for different functions. Neurological research on learning disabilities has concentrated heavily on the left hemisphere. In this portion of the brain, language is one of the primal functions. This is the area where most of the analytic and sequential cognitive processes occur. Students with learning disabilities exhibit problems with reading and language—written and spoken (Hallahan et al., 1999). The right hemisphere is the dominant home for more holistic and simultaneous processes. Researchers however, have also determined that persons with malfunction in this hemisphere have nonverbal learning difficulties (Myklebust, 1975; Rourke, 1989; Semrud-Clikeman & Hynd, 1990, in Hallahan et al., 1999).

The field of music therapy has utilized this knowledge of brain function to assist in the treatment of people with brain injury. Nevertheless, even though music therapy is more prevalent in the medical setting, the effects of the philosophy and practices in this field are certainly appropriate and applicable in an educational setting.

Music therapy seems to be effective in the treatment of patients suffering from neuralgic problems and trauma. Activities aid in the treatment and development of one's emotional, social, and cognitive functioning (Schalkwijk, 1994). Music therapy is widely used and has been proven effective in the treatment of mental and psychiatric patients (Friedlander, 1994).

The notion of music as a healing element is not new. Music has been used since the beginning of time for pleasure, entertainment, learning, and healing. In Biblical times, music was used to soothe royalty as well as to communicate with fellowman and with God. In the book of I Samuel, Chapter 16, the harpist David was summoned by King Saul to play his harp when evil spirits possessed the king. The music dispelled the evil spirits and changed the mood of this mentally tortured king (Felder, 1993).

Music has long been referred to as the universal language. A newsletter article (Anonymous, 1998) refers to music as foreign language, history, physical education, mathematical, science but mostly art. Through music, a person can compile all the routine tasks and functions and create feelings.

As it is described by Begley (1996), music brings life to regular brain patterns and increases their involvement in more advanced functions. When children stimulate the cortical neurons by listening to classical music, they also stimulate and improve the neurons used for math. Music, they believe, trains the brain for higher forms of thinking (Begley, 1996).

Coleman (2002) states that music is received, internalized, and interpreted in one part of the brain, and, speech and language, in another part. It seems a child may take in and process information and skills with more ease when music is used to present such. Coleman (2002) also exerts that music encourages better attention skills and causes distractions to be minimal. It motivates and brings enjoyment which is helpful when students are unmotivated to learn.

There is some research using music as one type of intervention for students with learning disabilities. It is found that the use of music in learning may create a multi-

sensory learning environment much more than any other practice (Farmer, 1996). A major benefit of this approach is that music moves beneath the top brain layers to the lower levels where emotion resides and regulates impulsive reaction(s). This may affect children at risk to become less stressful and anxious when music is played. The stress and anxiety usually leads to impulsive behaviors (Farmer, 1996).

The classroom is where a substantial amount of learning occurs. Should not every possible and feasible means of ensuring that all children are learning be utilized? A controlled classroom environment is one necessary factor in accomplishing this daily routine. Music helps to bring about a calm learning environment, conducive to learning and essential in memory skills (Gunthe, 2000). In studies known as the Mozart Effect where the piano concertos of Mozart are utilized, researchers have shown that music can have a far-reaching and powerful impact on the intellect and emotions (Campbell, 1997).

In order to help students with LD in learning, this present study utilized some instrumental music by a selected composer/performer in their academic environment. These selected compositions blend elements of “classical” styles with contemporary chord structures. The objective was to help improve the attention of students with learning disabilities, to increase their time on task and motivation in learning, and to reduce off-task behavior such as verbal disruption and disrespect.

### **Significance of Study**

Students with learning disabilities are facing a challenge for life. Learning does not come so easily for them; therefore, it is not surprising that these students are constantly displaying undesired learning and social behaviors in their classroom. The

behavior of those students can affect the entire classroom environment. If the teacher's time is monopolized daily by a few students for behavioral, academic, or emotional reasons, all students would suffer. Therefore, it is very important that more effective, meaningful strategies and interventions be utilized to reduce incidents of disruption and off-task behavior.

Many practices and intervention strategies have surfaced over the years and while some have proven effective for many students, others have not. Some of the less effective practices include Feingold diet and other dietary practices, instruction using different modalities, and training in social skills (Hallahan et al., 1999). More effective practices have included stimulant medicines, behavior modification, academic behavior modification, psycholinguistic training, cognitive training, direct instruction, scaffolded instruction, reading comprehension instruction, mnemonic strategies, and formative evaluation (Hallahan et al., 1999).

Many advocates for alternative solutions have posed interesting ideas, strategies and interventions. One major thrust in recent years involves instruction in a different mode--incorporating varying forms of music with special needs students.

Music has been known to boost self-esteem, encourage participation, and enhance intelligence (Tomat & Krutzky, 1975). According to the American Music Therapy Association (1999), music arouses attention and stirs motivation so that one becomes more actively involved in other areas of the educational setting. This is especially important for the students with learning disabilities.

Other studies have shown that cognition is strongly affected by sound rhythms (Coleman, 2002). Music has the ability to gather a child's innate rhythm and pull him/her

into the rhythm of the music when hearing. A registered music therapist concluded that movement and music together are powerful to stabilize rhythm in the brain, which causes better control of one's impulse (Farmer, 1996). With this control, the distinctive functions of the left and right hemispheres are also balanced to result in positive performance (Farmer, 1996).

This present study is designed to examine the appropriateness and effectiveness of some practices of music therapy when utilized regularly in the educational setting, particularly involving students with learning disabilities.

### **Statement of Purpose**

The purpose of this study is to determine and evaluate the effects of background music on the classroom behavior of students with learning disabilities (i.e., disruption, incompletion).

### **Research Questions**

1. Will off-task behaviors of students with learning disabilities be reduced when background music is played?
2. Does background music in the classroom encourage an environment conducive to learning?

## **Chapter II**

### **LITERATURE REVIEW**

#### **Introduction**

For many years, the role of music in the educational setting has been a controversial issue (Behar, 2000). Frequently, the music curriculum or music program is the first to be considered for elimination when the budget is tight. Many educators view music only as an extracurricular subject or entity. On the other hand, many do believe that students should be exposed to not only music, but also the arts in general to “enhance our humanity” (Manning & Manning, 1992, p.46).

In today’s classrooms (which frequently consist of students with learning disabilities), the ongoing challenge for teachers is how to teach these students effectively, and how to ensure that they are learning. Students with learning disabilities combat daily a host of physical, emotional, cognitive, and social hindrances to learning. Inappropriate classroom behavior is a primal hindrance. Daily intervention to these hindrances is key to helping them reach their academic and social potential.

The use of music in the classroom is one way to intervene and assist in the learning process and there are many ways to accomplish this. The great philosopher Plato believed that music should be the first subject children are taught. It helps them to achieve harmony between their minds and bodies. To him, music included all aspects of one’s intellect. Studies have evidenced that to learn music at an early age helps enhance

children's brain development and organization (Black, 1997). Howard Gardner (1983) believes that music is a separate kind of intelligence that should be quantified and developed. Gardner (1983) also believes that musical knowledge and exposure helps children's thinking skills and reinforces their memory skills. Undercofler (1997) contends that knowledge of music is necessary in today's society because it leads to a better understanding of and communion with the world, and helps people in making wise decisions.

In 1988, results of the International Association for the Evaluation of Educational Achievement for science proficiency listed the United States fourteenth out of the seventeen participating countries (Habermeyer, 1999). The first three countries were Hungary, Japan, and the Netherlands. It was noted that these countries include music as an integral part of the educational curriculum—especially musical training (Habermeyer, 1999).

The scientific domain has discovered that music has been an effective and positive indicator of people's health and overall performance (Black, 1997). Neuroscientists also have discovered that at birth, infants have neural mechanisms particularly developed for music (Black, 1997).

Research on the effective practices to teach students with learning disabilities offer teachers about six methods proven most effective. These are formative evaluation, direct instruction, behavior modification, reading comprehension instruction, academic behavior modification, and mnemonic strategies (Hallahan et al., 1999). Unfortunately, multi-sensory method(s), which would include the use of music, are not included.



Background music in the classroom is one way to utilize music as an interventive tool. This study will focus on the effects of background music on the classroom behavior of students with learning disabilities and its potential for creating an environment conducive to learning.

### **Classroom Behavior of Students with Learning Disabilities**

Students with learning disabilities exhibit an inability to focus and pay attention adequately which intensifies their learning problems. Many of them display differences even within their own abilities. For example, a student may be on the grade level in one content area, two levels behind in another, yet above average in the other area (Hallahan et al., 1999). Rosenberg (1997) notes that a learning disability can occur with another type of disability. For example, students with a learning disability may typically have attention deficit disorder (including hyperactivity), and emotional disorders which lead to behavioral problems. Typically, these students are frequently inattentive which causes classroom behavioral problems. Because they feel out of place, they may act offensively (Hallahan et al., 1999).

Disorganization is also a problem with students having learning disabilities. Keeping up with classroom structure, routines, and academic processes is not easy for them. They lack the natural skills and approach to tasks that will help them to succeed (Hallahan et al., 1999). They frequently are without the proper and required tools for schoolwork or can't find them. They frequently are without homework and can never seem to complete assignments in class within the allotted time.

Students with learning disabilities are also noted for being very fidgety, and very loud or disruptive. This is also one way of getting attention. Staying seated or in one position very long is an extremely difficult task. Learning to raise hands and wait for permission to speak is also another difficult task. Therefore, they are constantly interrupting and disrupting (Hallahan et al., 1999).

Another problem indicated in research is that these students lack appropriate social skills (Rourke, Young, & Leenaars, 1989). This problem is more apparent in students who display nonverbal learning disabilities, involving language skill deficits (Rourke et al., 1989). Even when they are a little more academically strong, deficient social skills can be a problem. They have trouble moving from one situation to the next and engaging in activities with others. They have difficulties following instructions and staying on task. As these students get into the adolescent years, emotional turbulence increases. Outside of the classroom, they may have problems staying employed. If they are not in environments that will encourage and motivate them, they see themselves as social misfits and end up dropping out of school. In fact, some researchers believe that there is a strong relationship between delinquency and students with learning disabilities. This is supported by the fact that they are unable to make wise and proper decisions about social situations and do not consider social consequences (Schumaker, Hazel, Sherman & Sheldon, 1982, in Haring, McCormick, & Haring, 1994).

Some research found that learning disabilities are primarily the result of social factors (Hallahan et al., 1999). The impositions (direct and indirect) of school and life aspects are included in these social factors (Hallahan et al., 1999). Proponents of this philosophy do not hold so fast to the notion of neurological dysfunction as a cause of

learning disabilities. Advocates of this idea emphasize the need for curricula consisting of social skills training since this is an area in which many students with learning disabilities are deficient (Haring et al., 1994).

In the 1930s, research by Skinner (1957, 1968, in Haring et al., 1994) noted that behaviors and environmental stimuli were strongly dependent on each other. From this research came the science of behavior referred to as operant conditioning. This concept asserts that if one is aware of appropriate stimuli and has control over such, behavior can be precisely predicted and adjusted.

The basic principle of operant conditioning is that the behavior of most humans is learned (Cooper, Heron, Howard, 1987, in Haring et. al., 1994). Human reactions, thoughts, and feelings are not believed to be the major catalyst of behavior. The focus should be on the start, the duration, and the adjusting of behavior—acceptable and unacceptable. Morgan and Jenson (1988, in Haring et al., 1994) state that when students are typically disruptive, aggressive, withdrawn, dependent, hyperactive and exhibiting other abnormal behavior patterns, the responses from teachers usually encourage the continuance of such behaviors. For example, teachers will typically remind students of rules, reprimand or embarrass, have private discussions, or even comfort them. Hence, unwanted attention is drawn to the unacceptable behavior.

Fifty-eight percent (58%) of teachers surveyed in a 1997 National Poll indicated that disruptive behavior occurred very frequently in their classrooms (Laydon, 1997, in Levin & Nolan, 2000). Students learn poor behavior from watching the poor behavior of others in their classrooms. This according to Baker (1985) is a ripple effect.

## **General Effects of Music**

Music therapists see firsthand the positive effects of music on physical condition. Miles (1997) states that using music systematically can be an effective way to consciously control people's mind, body, and mood. Music can positively impact intelligence, memory, heart rate, blood pressure, emotion, mental, and physical states on a daily basis (Miles, 1997). For example, music therapists utilize Vibroacoustic Therapy (VA) to treat clients who have raised levels of anxiety and hyperactivity. The procedure which involves music can be individualized to meet specific needs (Wigram, 1995). Music is known to decrease and regulate pulse and heart rate, regulate breathing, lower blood pressure and relax muscles (Blumenstein, Breslev, Bar-Eli, Tenenbaum, & Weinstein, 1995, in Miles, 1997).

According to Miles (1997), music impacts anyone when it is heard. Thus, the function of the ear is important in this hearing process. The ear is the first sense organ a fetus develops. A person's first means of getting information is through sound. An infant first learns to protect itself by listening and hearing. Sounds heard are then sent to the brain for interpretation and reaction. The brain then channels information from the sound to the rest of the body.

When the ear takes in sound, this sound travels to the brain, and particularly, to the brain stem. This is the first developed area of the brain, the lower level, and the area where instinctive functions reside. When musical sound is taken in, this area, generally called the limbic system, is kindled. The limbic system wraps around the brain stem and controls emotion (Hachinski & Hachinski, 1994, in Miles, 1997).

In 1924, the first American study was published about the impact music has on the governing entities of the nervous system. The study was performed by Hyde during which he observed the electrocardiograms (EKGs) readings and blood pressure rates of people who were listening to music (Miles, 1997). This study was the impetus for many subsequent studies in the field of music therapy.

It is believed that humans respond physically to music because humans are a network of rhythms (Weinberger, 1998). All our life processes involve detailed rhythm patterns. Music reaches to the lowest levels of the brain and causes a reaction.

Weinberger (1998) also supports the notion that humans respond to music because of its biological rhythm. He notes that biological behaviors are evident from the womb and during infancy. Additionally, he supports this notion with the fact that the human brain has neurons and other mechanisms to analyze, interpret, and act upon music primarily in the right hemisphere. Language occurs in the left hemisphere. He also notes that research shows that people who learn and play music strengthen the neural connections and functions of their brain cells. Many systems are involved when music is made or listened to. His study indicates that music helps children to acquire language skills, learn to read, enhance their creativity, and develop their intelligence. It also encourages in children appropriate attitudes, appropriate social behavior, and makes them feel better about themselves (Weinberger, 1998).

According to LaFuente (1997), unborn babies who listened to classical musical sounds in utero had better gross and fine motor abilities, language skills and better cognitive skills than the ones who were not exposed. Farmer (1996) states that music has the special capacity to capture the child's rhythm and pull him/her into the music's

rhythm. This was the finding of one music therapist who designed special music with 60 beats a minute for exercises with her patients. This is the resting heart rate. She based on her study on a super learning research on Baroque type music in the 1970s. She combined movement and music together to help regulate the brain's rhythm, regulate the movements and improve the control of impulses. These stabilities helped to balance the distinctive functions of the left and right hemispheres (Farmer, 1996).

The "Mozart Effect" is another popular study about music's effect on learning in educational research. The study showed that the spatial-temporal mental functions are enhanced for a period of time when a person listens to Mozart's music (Campbell, 1997). This is regarded as a function that takes place in the right brain and is very crucial in learning math skills and for abstract thinking.

The music of Mozart has proven to be effective for people to bring calmness, to improve their spatial awareness and skills, and to help with clarity of speech (Campbell, 1997). The reason is not really known but evidence dates back to Dr. Alfred Tomatis' success in treating Gerard Depardieu's (the actor) problems with stammering and memorization (Campbell, 1997). One reason is thought to be the fact that Mozart's music is not highly emotional or excitable, just even tone and relaxing, and brings about a healing balance in energy levels (Tomatis, 1998). The rhythms created by the functional components of the nervous system seem to respond positively to Mozart's music. It is found that this "Mozart Effect" with its rhythms and organization makes the neurons in the brain connect correctly, especially those connections or synapses that deal with creative processes and spatial-temporal reasoning (Campbell, 1997).

However, the “Mozart Effect” study was duplicated and challenged in 1999. The new study included a larger sample and found that the music had no effect on spatial-temporal reasoning (American Psychological Society [APS], 1999, in Behar, 2000). It is noted that differences in the groups being studied were not significant as noted in the first study (APS, 1999, in Behar, 2000). The original study is also criticized for its assertion that intelligence was improved because the temporary improvement in intelligence was only ten minutes long (APS, 1999, in Behar, 2000).

In a study by Derrick Kiger (1989), the effect of musical type/style on students’ comprehension was observed and noted. He used mild, easy music; loud, excitable music; or no music with the participating students in their learning. The students were assigned to groups to read and answer questions when listening to music. It is found that the students who had listened to the mild music understood the reading material better. They had better attention and focus on the task. The excitable music resulted in aroused emotion and broken concentration for those participants. The group with no music showed no notable effects (Kiger, 1989).

### **Effects of Using Music in the Classroom**

The style and type of music utilized in the classroom as background music affects the way students learn (Behar, 2000). Preferably, music used as background for the classroom environment should be of a calming nature—not overly excitable or irritating (Giles, 1991). In 1999, research showed that adolescent students had better reading comprehension when soft, calm music was played in the study hall and emotions were calmer (Chalmers, Olson, & Zurkowski, 1999).

In another study, music was used in a lunchroom during lunchtime to see if there would be any impact on the extremely noisy and chaotic environment. Observations were made by taking notes on the changes of noise levels and number of times the teachers intervention to correct behavior occurred. The study utilized different styles of music so that results differed. The level of noise, however, did decrease as did the intervention times by the teachers. The number of times they had to correct behavior dropped by 65%. The study did note that it wasn't clear if the drop in intervention times was because the music affected the teachers or the students. However, the study did show that music had a positive effect on student's behavior change in the lunchroom (Chalmers et al., 1999).

Stress and anxiety is known to reduce when people listen to art music or classical music (Blumenstein et al., in Miles, 1997). Studies have shown that students who get very nervous when taking a test perform much better when background music is used. Also, studies have shown that physicians perform their jobs in a more relaxing manner when music is played in the background to help them have a clearer mind (Blumenstein et al., in Miles, 1997).

According to Kiger (1989), high school students reading comprehension was improved when classical music or a similar style of music was played. The students concentrated more when listening to this low-stimulant type of music. Similarly, Davidson and Powell (1986) examined the effect of "easy-listening background music" for children's on-task behavior in the classroom. The style of music used was harmonious rather than dissonant, and not very percussive. Strings and wind instruments were the prevailing sounds. The results of the study showed that the students increased



their on task behavior with easy-listening background music. It is noted that the boys improved their behavior a lot and the girls' on-task behavior already at 99% was more elevated. It seems that music impacted both genders.

Music has also been used in classrooms other than background sound for student concentration or a pleasant atmosphere of the environment. Integrating music is especially useful in learning literature or when learning to read. Students seem to learn sight words and multiplication facts better with music (Towell, 1999).

Classical music as an aid to enhance memory has been emphasized in several studies and students recall stories better and answer questions better when classical background music is played (Bucko, 1997).

In one study preschoolers were observed to examine their auditory discrimination skills when classical music was playing. Seventy-five children at the age of five participated. Half of them were exposed weekly to classical music experiences. At the end of the study, participating children were given several IQ and auditory discrimination tests. It is found that children's auditory skills improved when they were in the study group to listen to the music and were able to follow directions of instructions (Turnipseed, 1974, in Behar, 2000). It seemed that the music was keeping their interest and helping to maintain time on task.

Botwinick (1997) also studied how music would affect the spelling scores of students. Nineteen first graders participated in the study. They were exposed to music from the Classical era, the baroque era, symphonic music, or no music, just before their spelling lessons. For four 2-week periods, the children were instructed without music. Then for the next three 2 week periods, they listened to 10 minutes of music just before

their lessons. At the end of each five-day cycle, the children were tested. There were no significant improvements in spelling scores but there were significant improvements in motivation and interest. It was also noted that the children showed greater academic improvement when they listened to Mozart as opposed to Vivaldi or the symphonic Disney arrangements.

Music used as a memorization tool or as background to help learning concentrates the mind, will, and emotion in a willing state. Therefore, cognitive abilities are boosted and a learner is in a better position to receive information, to remember, and to connect it as needed (Taniguchi, 1991, in Coyne, Dwyer, Kennedy, & Petter, 2000). It appears that no matter if music serves as background learning help, or as a learning tool, it impacts learning.

### **Effects of Using Music in the Classroom for Students with Learning Disabilities**

There are many studies on the effectiveness of music on student behavior improvement in the classroom. It is shown that music is effective in the classroom as a strategy to increase the attention span of students with learning disabilities (Gilliland, 1957, in Behar, 2000). Music is also known to impact positively the academic achievement of these students (Gilliland, 1957, in Behar, 2000). For example, background music does not only provide an aesthetic benefit but can help alleviate much of the emotional stress students with learning disabilities have. This stress usually leads to poor conduct, poor attention, and low self-esteem, which have a negative impact on these students' academic performance.

Auditory Integrative Training is a method used by special educators, particularly occupational therapists with children who have special needs including learning disabilities. During the training of ten days, participants listen to “modulated music” for two and one-half hours. Most of them experience consistent improvements in many areas. It is noted that improvement takes place in the area of attention, time-on-task, self-motivation, social and emotional maturity, etc. (Frick & Lawton-Shirley, 1994, in Coyne et al., 2000).

Buck and Gregoire (1996, in Coyne et al., 2000) indicated that engaging in music helps children with special needs to be motivated and improve their self-confidence. They suggest that teachers should determine what the musical skill level of their students is and then develop activities appropriate for their levels. It is strongly recommended to create many activities with music for those students.

Multi-sensory learning is no doubt advantageous in a classroom with learning disabled students, because it involves utilization of all senses, not just seeing and listening (Habermeyer, 1999). Music integration in the classroom allows multi-sensory learning to take place. Music pulls out the strengths of even the lowest performing individual and allows freedom of expression. This leads to building solid self-esteem that will positively impact students’ behavior and consequently, their academic performance (Habermeyer, 1999).

It is also shown that music could be helpful with students who have reading problems (Bygrave, 1995, 1996). In Bygrave’s study, the students were separated into two groups. One group engaged in musical activities during reading and the other did not. The duration of the investigation was thirty weeks. In the music program, the

children sang, played instruments, and listened to music. It is found that the children in the musical program improved in the area of receptive vocabulary which helped their language development (Bygrave, 1995, 1996).

Sundberg (1994, in Behar, 2000) studied seventh graders with learning and emotional disabilities to see if using music in the classroom would improve their spelling and vocabulary. The findings showed that the music did not improve the learners' test scores but helped positively alter their perspectives on themselves and attitude toward learning. The music also positively changed the way they viewed their environment. The music used with rhythm in instruction, especially in spelling and vocabulary showed an effect on students' retention efforts and skills (Sundberg, 1994, in Behar, 2000).

In Behar's study (2000), 9 students with special needs in a third and fourth grade self-contained class participated. The students were read ten different stories for ten random days within a month. Five of those reading days included background classical music and five days without music. The purpose was to evaluate the effects of the music on listening comprehension. The participants were asked the same four story element questions after each story. A record was kept of the correct answers for each question and also the total scores. Observations were also made regarding the attention spans and on task behaviors. In this study, the results showed no significant differences between the two types of listening sessions but raw scores of the sessions with music were increased.

To help students with learning disabilities, the use of music either as an enhancement tool, as a positive reinforcer, or as a learning aid would improve their receptive process ultimately improving their attitudes and academic performances (Tomat & Krutzky, 1975).

## **Summary**

In the review of this literature, it is found that listening to classical music may enhance learning in the classroom, especially for students with learning disabilities, or may have no effect at all. The study of music allows a duality of easy and difficult mind processes. Undercofler (1997) states that music differs from other subject areas in that it forces the student to be creative and analytical. There is substantial evidence that education comprising of subjects such as music, poetry, drama, dance, art, and the likes contribute to the success of a child's educational journey (Lawton, 1987, in Behar, 2000). It is an ongoing controversy when discussing the effects of music in learning, but music has not shown harmful in any way in the educational setting as long as the music is not extremely loud, dissonant, and harsh.

It seems some researchers still believe that music has its advantages but serves no real educational purpose. In contrast, there is also research supporting theories that music does increase concentration, change mood and attitudes, and comprehension. To validate the findings, either effective or not, the present study further examined the effects of using background music in the classroom specifically for the purpose of substantiating the hypothesis that there will be positive changes in classroom behavior.

## **Chapter III**

### **METHOD**

#### **Introduction**

This study focused on elementary school students with learning disabilities (LD) in special education resource classrooms. The effects of background music on the classroom behavior of these students were examined. The students listened to background music when they worked independently, in small groups, and when they were tested. These students also heard music playing as they entered the classrooms in the morning. The weeks of music exposure were alternated with weeks of no music. At the conclusion of the study, the students' classroom behaviors were compared to their behaviors prior to the music exposure. The frequency of off-task behavior was recorded and compared to determine if there were any behavior changes with or without background music during independent work time.

#### **Sample**

The subjects of this study were students from a diverse school district in the northeastern area of the United States. The total number of participants was seven (7). They were fourth/fifth graders who had all been classified in one of the following categories: a) specific learning disability (SLD), b) multiple disabilities (MD), c) communications impaired/handicap (CI), cognitive impaired mild (CIM) and emotional

disturbance (ED). They all had specific objectives according to their Individual Education Plans (IEP).

The students were all identified by the school district's Child Study Team (CST) based on specified guidelines as required by the New Jersey Administrative Code for Special Education (N.J.A.C. 6A:14, 2002). This was evidenced by a severe disparity between their current level of achievement and their intellectual ability in one or more of the following areas: basic reading skills, reading comprehension, oral expression, listening comprehension, mathematics computation, mathematics reasoning, and written expression (N.J.A.C. 6A:14, 2002).

**Student 1a (Marsay)**: Marsay is a 4<sup>th</sup> grade male performing on a 2<sup>nd</sup> grade level. He is classified as having multiple disabilities, notably asperger's syndrome. Marsay is in the resource room for language arts and math. Even within the resource room, he frequently receives instruction within a smaller group. Marsay's primary areas of behavior problems were fidgetiness, failing to follow instructions, being out of seat, being verbally disruptive and verbally disrespectful.

**Student 2a (Tyree)**: Tyree is a 5th grade male performing on an advanced 3<sup>rd</sup> grade level. He is classified as having a specific learning disability with noted difficulties in reading, spelling, and language skills. He also receives instruction in math. Tyron was frequently fidgety, failing to following instructions, out of seat, and verbally disruptive.

**Student 3a (Keyite):** Keyite is a 4<sup>th</sup> grade male who performs on a 2<sup>nd</sup> grade level. He is also classified with a specific learning disability. He receives instruction in the resource room in both the language arts and math. Fidgetiness, failure to follow instructions, being out of seat, being verbally disrespectful and verbally disruptive were areas of off-task behavior demonstrated by Keyite.

**Student 4a (Rayown):** Rayown is a 5<sup>th</sup> grade male who performs on an advanced 3<sup>rd</sup> grade level. Rayown is classified as having a mild cognitive impairment. He receives instruction in language arts and math. Rayown's most frequent behavior problem was not following instructions and motivating him to work was a daily challenge.

**Student 5a (Demeder):** Demeder is a 5<sup>th</sup> grade male who performs on an advanced 3<sup>rd</sup> grade level. He is classified as emotionally disturbed, with a specific learning disability. He receives instruction in language arts and math. Marsay's frequent off-task behaviors were not following instructions, being out seat, being verbally disrespectful and verbally disruptive.

**Student 6a (Frankie):** Frankie is a 4<sup>th</sup> grade male who performs on a 2<sup>nd</sup> grade level. He is classified as having a specific learning disability and receives instruction in language arts and math. Frankie demonstrated behavior problems in fidgetiness, disorganization/unpreparedness, and not following instructions.



**Student 7a (Java)**: Jaya is a 4<sup>th</sup> grade male who performs on a 2<sup>nd</sup> grade level. He is classified as having communications impairment and receives instruction in language arts and math. Jaya was consistently disorganized and unprepared, not following instructions, out of seat, and sometimes verbally disruptive.

The study involved four (4) participating teachers (two special education teachers and two paraprofessionals). Both teachers are college educated and certified with about seven years of teaching experiences. The classroom schedules, activities, and routines remained the same during the study period. The teachers were trained by the researcher prior to the study. The training included instruction on how to play the music such as the volume level, when to play the music, and the rotation order of the music selections.

### **Research Design**

A single-subject design with ABAB phases was used in this study. Observations of the students' classroom behavior were documented for 2 weeks during the independent work time of language arts and math in the morning hours. These were documented and utilized as pre-measuring tools and a baseline was constructed. Weekly observations continued once the music exposure began for 3 weeks serving as an intervention. Students' behaviors were observed during sessions when music was withdrawn as the second baseline for 2 weeks; then observations were continued when music was resumed for 3 weeks, serving as the second intervention.

## **Measurement**

An observation checklist was utilized to record the students' behaviors during the baseline and intervention phases. The target behaviors included 1) *disorganization/unpreparedness* which refers to being unprepared for a task such as lacking proper tools for classwork, being unable to find books, pencils, or other necessary tools; 2) *fidgetiness* which describes restless and/or agitated behavior while seated; 3) *failure to follow instruction* which includes doing other than asked or instructed, or being uninvolved; 4) *being out of seat* which refers to being out of seat at inappropriate times or without permission; 5) *verbal disrespect* that includes talking back to the teacher(s), and using offensive or non-acceptable language; and 6) *verbal disruption* which includes loud talking and arguing, talking out of turn, and making inappropriate noises with the mouth. The same checklist was used prior to and during the study to collect data for baseline and intervention phases (see Appendix A).

## **Materials**

Two medleys of original instrumental piano recordings by composer Gary Lamb were utilized. These selections are based on a tempo of 60 beats per minute that indicates a resting heart rate. The selections are soft, low-rhythm, low stimulus, easy listening instrumentals incorporating much of the elements of classical style music. Medley I consisting of four (4) selections multiply recorded for extended play was utilized for the first week. Medley II consisting of four (4) selections similarly recorded was utilized for the second week and third weeks. After two more weeks without music, the music

resumed beginning with medley I for two weeks and medley II for one week (see Appendix B).

### **Procedure**

**Measurement Procedure.** The purpose of the study was to determine if music played as the background would result in positive changes in the classroom behavior of students with disabilities. The researchers observed the behavior using a checklist as students were working independently during language arts and math, testing, or during quiet group activities, 20-25 minutes per day, 3 days per week.

Parents and guardians were given information and consent forms before the study began (see Appendix C). In late January, the first week of observation occurred and data was recorded. The students were given necessary information about the study. The collected data was analyzed and compared.

**Instructional Procedure.** Two approaches were used in this study: instruction with background music and instruction without background music.

- a. *Instruction without music:* Teachers instructed the students as usual and their normal classroom routines remained the same. For the first 2 weeks, no music was played. Music was introduced on the third week for 3 weeks but taken away for another 2 weeks.
- b. *Instruction with music:* Teachers instructed the students as usual and their normal classroom routines remained the same as well. The music was introduced during the third week and lasted for 3 weeks. Music was not

played for another two weeks and resumed for another 3 weeks. The researcher played the music as students entered the classroom, turned it off during whole group instruction, and resumed play during independent work, small group work, and testing.

Observational Procedure. The researcher observed students' behavior in class using an observation checklist 3 days per week for a total of 10 weeks(2 weeks baseline phase I, 3 weeks intervention phase II, 2 weeks withdrawal/baseline phase III, and 3 weeks re-intervention phase IV). Data recording commenced during the baseline phase, then continued during the intervention when the music was played during independent work time, small group activities, and testing. Six behaviors were observed. They were: 1) disorganization/unpreparedness; 2) fidgetiness; 3) failure to follow instructions; 4) being out of seat; 5) verbally disrespectful; and 6) verbally disruptive. When observing, the frequency of occurrence for the behaviors was recorded using tally marks as shown in Table 1.

**TABLE 1**

<b>Classroom Behavior Observation Data Sheet</b>						<b>Music Project</b>	
<b>Date</b> _____		<b>Room</b> _____		<b>Time Period</b>			
<b>Behaviors</b>							
<b>Subjects</b>	Disorg/Un prep.	Fidgety	Not Foll. Instruct.	Out of seat	Verbal Disresp.	Verbal Disruption	<b>NOTES</b>
	1						
2							
3							

### **Analysis Of Data**

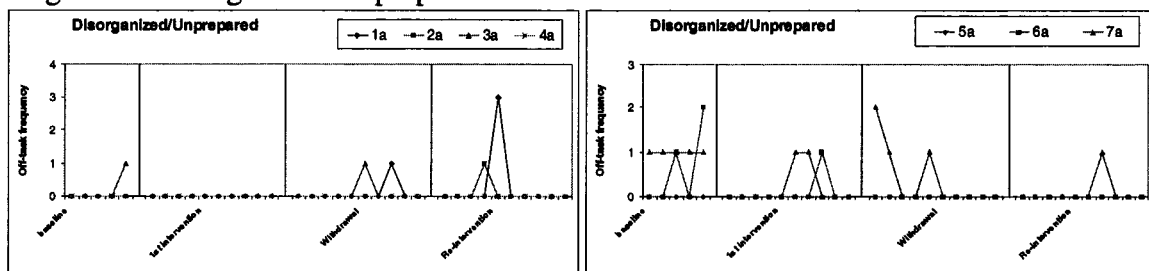
A comparison of data in the baseline (phase I), the intervention (phase II), withdrawal (phase III), and re-intervention (phase IV) was recorded. The behavioral data was graphed based on the frequency of off-task behavior observed.

## Chapter IV

### RESULTS

The data collected during the baseline and intervention phases were computed, graphed and analyzed for each student using an ABAB complete reversal design(A=baseline; B=intervention; A=withdrawal; B=re-intervention). During the baseline phase, the frequency of behavior occurrence of each student's behavior was observed. Students' profiles for each of the 6 off-task behaviors are presented graphically below. For visual clarity, the graphs are separated to display the results of four (4) students on one graph and three (3) students on the adjacent graph. Each graph shows the frequency of off-task behavior observed per day. During the baseline phase, students were engaged in seatwork activities (independent and guided). Subsequent observation data was taken during similar settings.

Figure 1 - Disorganized/Unprepared



There was not much display of disorganization among the seven (7) students. Students 6a and 7a indicated some frequency of this behavior occurrence during the baseline phase, and student 3a indicated very low frequency. Student 6a showed a decrease in this

behavior at the end of the 1<sup>st</sup> intervention with no occurrence observed thereafter. Student 7a followed a similar pattern but with minimal occurrence.

Figure 2 – Fidgety

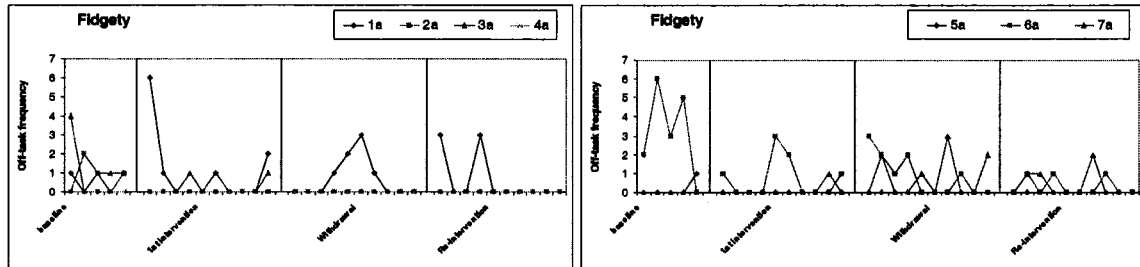


Figure 2 shows students 1a, 2a, 3a, 5a, and 6a with some occurrence in this behavior during the baseline phase. Student 1a increased the behavior during the 1<sup>st</sup> intervention, declined during the withdrawal with not much change during the re-intervention. There was no occurrence of this behavior with students 2a and 5a after the baseline phase. Student 3a decreased during each intervention phase and 6a showed a decline during each phase.

Figure 3 – Failure to Follow Instruction

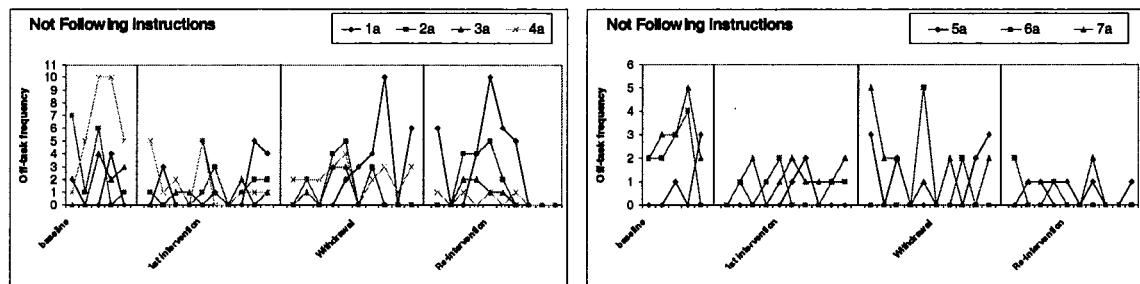


Figure 3 shows a high frequency of this behavior occurrence in the baseline with indications for each student. Student 1a consistently displayed a high frequency. Students 2a, 3a, 4a, 6a, and 7a displayed a fall-rise-fall pattern after the baseline phase. However,

the most dramatic decline occurs with students 4a, 6a, and 7a during the re-intervention phase. Student 5a shows a slight rise-fall between the intervention, withdrawal, and re-intervention phases but with minimal frequency change.

Figure 4 – Out of Seat

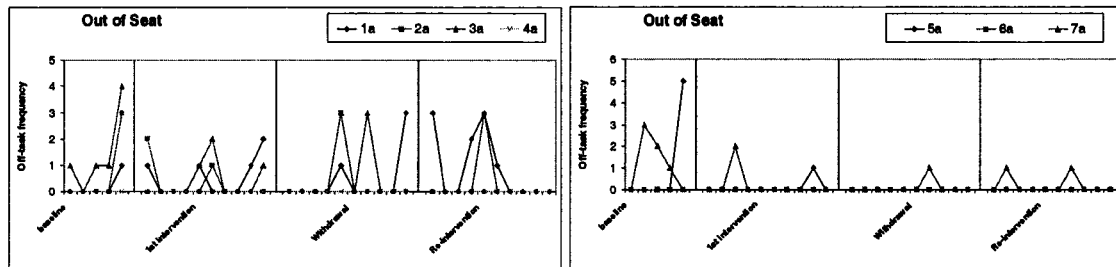


Figure 4 shows that students 1a, 2a, 3a, 5a, and 7a displayed out of seat behavior during baseline. Student 1a steadily increased in frequency over the 4 phases. Student 2a was consistent for the baseline and intervention phases, and then the behavior was eliminated during the withdrawal and re-intervention phases. Student 3a displayed a fall-rise-fall over the four phases with an overall decrease in the re-intervention. Student 5a showed a drastic decrease during intervention and maintained throughout the withdrawal and re-intervention, and student 7a showed a decrease during the re-intervention.

Figure 5 – Verbally Disrespectful

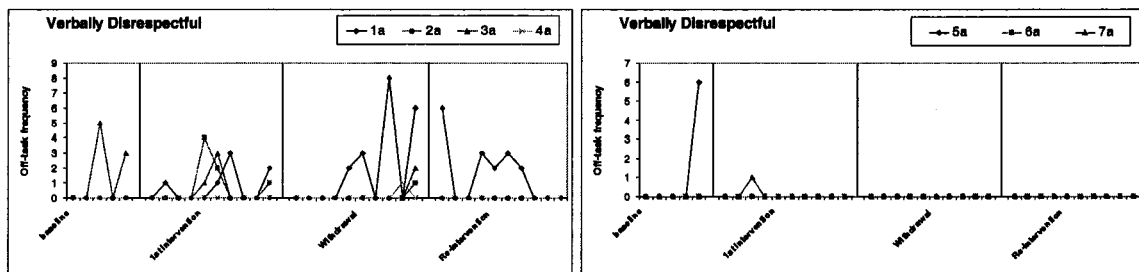




Figure 5 shows only students 3a and 5a with baseline indication. Student 3a decreased the behavior over all phases with no occurrence in the re-intervention. Student 5a displayed no frequency after the baseline. Students 1a, 2a, 3a, and 7a showed some frequency during the first intervention phase. Student 1a showed an increase during the withdrawal and a decrease during the re-intervention phase 4. Students 2a and 3a both eliminated the behavior during the re-intervention. Student 7a had a low frequency with no other occurrence during the withdrawal and re-intervention.

Figure 6 – Verbally Disruptive

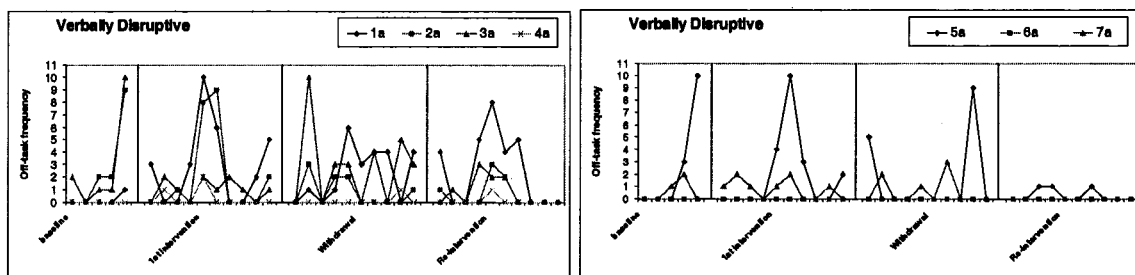


Figure 6 shows students 1a, 2a, 3a, 5a, and 7a with a baseline indication. Student 1a increased the behavior during the intervention and remained somewhat consistent throughout. Students 2a, 5a, and 7a increased during the intervention but drastically declined during the withdrawal and re-intervention with student 7a eliminating any occurrence. Student 3a showed a decrease in both intervention phases with a very high frequency during the withdrawal and a drastic decrease during the re-intervention.

## **Chapter V**

### **GENERAL DISCUSSION**

The study was designed to determine if background music in the classroom would positively impact the classroom behavior of students with learning disabilities. The findings and conclusion(s) are discussed in this chapter. The seven (7) students included in this study were classified as learning disabled and received instruction in language arts and math in a special education resource room. They were observed for disorganization/unpreparedness, fidgetiness, failure to follow instruction, being out of seat, verbal disrespect, and verbal disruption. The results indicated that there were some changes in behaviors when background music was used as an intervention.

The first research question was to determine if off-task classroom behaviors of students with learning disabilities would be reduced when background music was played. The results showed a decelerating trend for most of the students. This finding is similar to that of Chalmers et al., (1999). In their study, background music was used in a lunchroom to see if there would be any impact on the extremely noisy and chaotic environment. Observations were made by taking notes on the changes of noise levels and the frequency of teachers' intervention to correct off-task behavior. The level of noise did decrease and the frequency of teacher intervention was reduced by 65%. One difference between their study and this present one was that different styles of music were used.

In the present study, when observing the behavior of disorganization/unpreparedness, it was found that the behavior occurrences of three students either decreased or were eliminated during the intervention phases. During the baseline phase, five (5) students showed fidgety behavior. Two (2) students eliminated the behavior when the music was played during the intervention phase and one (1) student eliminated the behavior during the withdrawal phase. The frequency of one student's behavior occurrence was declined during the re-intervention phase. One student (Student 1a) however, increased the number of occurrences during the intervention.

Failure to follow instruction was a constantly occurring behavior of these students. Here again, the same student (Student 1a) did not show any improvement in following instructions. The other students showed that the music positively affected their behavior to follow instructions. Five (5) students had problems staying in their seats. Again, Student 1a increased his behavior occurrence over the four phases. Three (3) students either drastically reduced or eliminated the out of seat behavior, and one (1) student showed a slight reduction.

Only two (2) students were verbally disrespectful during the baseline observation and they both eliminated this behavior after the music was played during the intervention phase. Four (4) other students, however, displayed some behavior occurrence once the music began. Again, Student 1a did not show improvement when the music was played as an intervention. The frequency of occurrence was also higher for this student when the music was removed. The other students either eliminated or significantly reduced this behavior during the re-intervention phase.

Verbal disruption was another constant occurrence with these students. The other students showed drastic reduction and one eliminated the behavior once the music was taken away (withdrawal phase) and replayed (re-intervention phase). Student 1a showed a similar trend of no improvement and increased the behavior throughout all phases.

It is noted that Student 1a was the only student with Asperger's syndrome which is a disorder of the autism spectrum. Autism is a disorder typically characterized by social deficits, communication deficits, stereotypic behavior, and very low cognitive and language abilities. Students with autism usually react strangely to any sensory experiences (Haring, et al., 1994). However, Asperger's syndrome is the label given to a higher functioning (particularly intellectually) autistic child. The reaction to sensory experiences could explain the trend of increased behavior occurrences for Student 1a especially during the intervention.

The second research question was to determine if background music encourages a classroom environment conducive to learning. The results of the study, indicated by the changes in the frequencies of behavior(s), show that background music can help the environment by producing a calmer tone, thereby encouraging more compliant behavior, which in turn encourages better learning. This finding concurs with the results of study by special educators who used the Auditory Integrative Training method with special needs students. In their study (Frick & Lawton-Shirley, 1994, in Coyne et al., 2000), the participants listened to a particular style of music, two and one-half hours per day for ten days. Noted improvement was in the area of attention, time-on-task, self-motivation, and social and emotional maturity (Frick & Lawton-Shirley, 1994, in Coyne et al., 2000). Similarly, Davidson and Powell (1986) found that easy-listening background music

positively impacted children's classroom behavior and attributed to more on-task behavior. The male participants who previously had higher occurrences of off-task behavior greatly improved. This study (as did the present study) also utilized harmonious rather than dissonant and very percussive music. Strings and wind instruments were the more prevailing sounds in their study instead of the piano and strings in the present study.

### **Limitations**

There were several limitations with this study. One was the fact that the students sampled were in two different resource rooms. Although their curriculum, teaching styles, and discipline programs were similar, using students in one room would have ensured consistency in student and teacher reaction(s). One classroom would also have ensured that the music was played during consistent settings. Additionally, one classroom would have ensured that the sound of the music was consistent. Sound traveled differently in the two classrooms and external noise/distractions were different which could have hindered the students' ability to hear the music clearly or receive what they were hearing pleasantly. Lastly, one classroom would have ensured that the volume of the music was consistent. The two teachers subjected the volumes to their preferences at certain times which could have interfered with the students' ability to hear and subsequently that may impact the results.

A second limitation was the students' absence from the classroom. There were frequent absences or pulling-out of students from the classroom for various reasons. There were also other school wide interruptions such as assemblies, fire drills, and early

dismissals. Consistency in attendance would have enabled them to get used to the music and would have enabled the researcher to obtain accurate observation data.

A third limitation of this study was the many inconsecutive days during observations due to inclement weather. The students were out of school for two-three day intervals, and even one week due to snowstorms.

A fourth limitation was the duration of the study. As previously mentioned, the many interruptions limited the number of observation days. There was not an adequate time frame to conduct this study to collect data.

### **Implications**

The results of this study imply that background music can be a viable intervention alternative for managing classroom behaviors of students with learning disabilities. The findings seemed to support previous findings that background music in the classroom can have a positive effect on the classroom behavior of students with learning disabilities (e.g. Chalmers et al., 1999; Davidson & Powell, 1986; Frick et al., 1994, in Coyne et al., 2000). There is also a possibility that background music can produce a calmer tone in the classroom thereby creating a more conducive learning environment.

### **Recommendations For Future Research**

Because of some limitations of this study, additional research may be needed to validate and substantiate the results. A primary recommendation would be to have participants in one classroom setting. The one classroom setting might enable the researcher to consistently observe student behavior changes and will ensure that the

students are receiving similar methodology during the study. Another recommendation would be to conduct the study for a longer duration—probably for a minimum of six months. This may better substantiate the hypothesis that the music does indeed positively affect student classroom behaviors. It would also probably be beneficial to observe fewer behaviors so that sufficient data can be obtained to substantiate any changes in one area. An additional suggestion would be to participants with similar disabilities or classifications. As in the case of the one student (Student 1a), it might be better to exclude students with accompanying disorders such as Asperger’s syndrome. Finally, the suggestion could be made to begin such an intervention practice in lower grades such as the primary elementary level.

In conclusion, music provided as background in a classroom can be a viable alternative strategy to reduce off-task behaviors of students with learning disabilities. Music may offer an opportunity for teachers to consider as a tool for managing their classroom and creating a harmonious learning environment for students.

## References

- American Music Therapy Association, Inc. (1999). *Music therapy and special education*. Retrieved September 19, 2002 from the World Wide Web: <http://www.musictherapy.org/factsheets/specialed.html>
- Anonymous. (1998, Spring). Why we teach music. *Da Capo: Delaware ACDA Newsletter*. Retrieved September 19, 2002 from the World Wide Web: <http://www.hrsbstaf.ednet.ns.ca/fergusm6/c%20why%20we%20teach%20music.htm>
- Baker, K. (1985). Research evidence of a school discipline problem. *Phi Delta Kappan*, 66,482-488.
- Begley, Sharon. (1996, February 19). Your child's brain. *Newsweek*, 55-61.
- Behar, Cara. (2000). *The effects of classical music on listening comprehension*. New Jersey: Kean University. (ERIC Document Reproduction Service No. ED 438589).
- Black, S. (1997). *The American School Board Journal*. 115-117.
- Botwinick, J. (1997). Developing musical/rhythmic intelligence to improve spelling skills. (Master's thesis, Kean College, NJ, 1996).
- Bucko, R.L. (1997). Using what brain-based research tells us. *Streamlined Seminar*, 16(2), 3.
- Bygrave, P.L. (1995-1996). Development of receptive vocabulary skills through exposure to music. *Bulletin for the Council for Research in Music Education*, 127, 28-34.
- Campbell, D.G. (1997). *The target effect: Tapping the power of music to heal the body, strengthen the mind and unlock the creative spirit*. NY: Morrow, William & Co.
- Chalmers, L., & Olson, M., & Zurkowski, J. (1999). Music as a classroom tool. *Intervention in School and Clinic*, 35, 43-45.
- Coleman, K.A. (2002). Music therapy for the child with special needs. *Special child: Information Avenue Archives*. Retrieved September 19, 2002 from the World Wide Web: <http://www.specialchild.com/archives/ia-005.html>
- Coyne, N.M., Dwyer, M.L., Kennedy, M. & Petter, N. M. (2000). *The effects of systematic implementation of music on behavior and performance of the special*



*need students*. Chicago, Illinois: Saint Xavier University and IRI/Skylight. (ERIC Document Reproduction Service No. ED 452644.

Davidson, C. & Powell, L. (1986). The effects of easy-listening background music on the on-task performance of fifth-grade children. *Journal of Educational Research*, 80, 29-33.

Farmer, J. (1996, January). Training the brain to pay attention the write way. *Parenting Magazine*. Retrieved September 19, 2002 from the World Wide Web: <http://www.retrainthebrain.com>

Felder, C.H. (Ed.). (1993). *The original african heritage study bible: King james version*. Nashville: James C. Winston Publishing Co.

Friedlander, L.H. (1994). Group music psychotherapy in an inpatient psychiatric setting for children: A developmental approach. *Music Therapy Journal: Perspectives*, 12(2), 92-97.

Gardner, H. (1983). *Frame of mind: The theory of multiple intelligences*. New York: Harper and Row.

Giles, M.M. (1991). *A little background music, please*. *Principal*, 71(2), 41-44.

Gunthe, E.D. (2000). *Super learning*. Retrieved September 19, 2002 from the World Wide Web: <http://www.musicintheclassroom.com/quotations.html>

Habermeyer, S. (1999). *Good music, brighter children*. USA: Prima Publishing.

Hallahan, D.P., Kauffman, J.M., & Lloyd, J.W. (1999). *Introduction to learning disabilities*. Needham Heights, MA: Allyn & Bacon.

Haring, N.G., McCormick, L., & Haring, T.G. (1994). *Exceptional children and youth* (6<sup>th</sup> ed.). New York: Macmillan.

Hoy, C. & Gregg, N. (1994). *Assessment: The special educator's role*. Belmont, CA: Wadsworth, Inc.

Individuals with Disabilities Education Act (IDEA) Amendments of 1997. Public Law, 105-17.

Kiger, D. (1989). Effects of music information load on a reading comprehension task. *Perceptual and Motor Skills* 69(2), 531-534.

Lafuente, M.J., Grifol, R., Segarra, J. & others (1997). Effects of the first start method of prenatal stimulation on psychomotor development: The first six months. *Pre-and Peri-natal Psychology Journal*, 11, 151-162.

- Levin, J. & Nolan, J.F. (2000). *Principles of classroom management: A professional decision-making model* (3<sup>rd</sup> ed.). Boston: Allyn & Bacon.
- Manning, G. & Manning, M. (1992). *The arts and whole language in teaching K-8*, 3, 46-48.
- Miles, E. (1997). *Tune your brain*. New York: Berkley Publishers.
- New Jersey Administrative Code for Special Education, N.J.A.C. 6A:14(2002)
- Rosenberg, M.S. (1997). Learning disabilities occurring concomitantly with other disabilities and exceptional conditions: Introduction to the series. *Journal of Learning Disabilities*, 30, 242-244.
- Rourke, B.P., Young, G.C., & Leenaars, A.A. (1989). A childhood learning disability that predisposes those afflicted to adolescent and adult depression and suicide risk. *Journal of Learning Disabilities*, 22(3), 169-175.
- Savage, R.C., & Wolcott, G.F. (Eds.). (1995). *An educator's manual: What educators need to know about students with brain injury* (3<sup>rd</sup> ed.). Houston, TX: HDI Publishers.
- Schalkwijk, F. (1994). *Music and people with developmental disabilities: Music therapy, remedial music making and musical activities* (A. James, Trans.). Bristol, PA: Jessica Kingsley Publishers.
- Tomat, J.H., & Krutzky, C.D. (1975). *Learning through music for special children and their teachers*. South Waterford, MA: Merriam-Eddy Co.
- Tomatis, A. (1998). The riddle of the Mozart effect. *Natural Health*, 114-19.
- Towell, J. (1999). Motivating students through music and literature. *The Reading Teacher*, 53(4), 284-87.
- Undercofler, J. (1997). Music in america's schools: A plan for action. *Arts Education Policy Review*, 98, 15-24.
- Weinberger, N.M. (1998). The music in our minds. *Educational Leadership*, 45, 36-40.
- Wigram, Tony. (1995). The psychological and physiological effects of low frequency sound and music. *Music Therapy Journal: Perspectives*, 13(1), 16-22.

## Appendices

### Appendix A

#### Classroom Behavior Observation Data Sheet

#### Music Project

Date \_\_\_\_\_ Room \_\_\_\_\_ Time Period \_\_\_\_\_

Subjects	Behaviors						NOTES
	Disorg/Un prep.	Fidgety	Not Foll. Instruct.	Out of seat	Verbal Disresp.	Verbal Disruption	
1							
2							
3							
4							
5							
6							
7							
8							

### Appendix B

#### Description of Musical Medleys from original compositions of Gary Lamb, pianist/composer

*Medley 1:* Easy-listening, New Age Style; four selections from the album “Distant Fields” recorded in 1990. These are piano based instrumentals with drums, bass, strings, and synthesizers provided light accompaniment.

- a) The Journey and the Wind
- b) After the Rain
- c) Under the Listening Tree
- d) Home at Last

*Medley 2:* Classical Contemporary Style; two selections from the album “Angel” recorded in 1995. These are piano/violin and piano instrumentals respectively.

- a) When I think of You
- b) I am Always with You

Appendix C

**Parent Consent Letter**

January 2003

Dear Parents:

My name is Lesa D. Givens, a graduate student in special education at Rowan University. I am also a teacher, certified in regular and special education, as well as music education.

I am conducting a study in your child's classroom to determine and measure the effects of background music in the classroom on students' classroom behavior. Weekly data will be recorded and at the end of the study in April, these will be analyzed and compared.

The students' information will remain confidential and I will interpret all data. The classroom routines and instructional activities will not be interrupted.

Please sign the permission form below and return it by or before Friday, January 24, 2003.

Thank you very much for your cooperation and interest.

Sincerely,

Lesla D. Givens

---

(Please return this portion to your child's teacher by or before Friday, January 24, 2003).

I give permission for my child \_\_\_\_\_ to participate in the study on the effects of background music on classroom behavior.

I do not give permission for my child \_\_\_\_\_ to participate in the study on the effects of background music on classroom behavior.