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THE EFFECTS OF MUSIC ON THE TASK PERSISTENCE OF
MULTIPLE DISABLED CHILDREN IN A SELF-CONTAINED CLASSROOM

by
Lois LaPierre Lang

A thesis

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of
The Graduate School
at
Rowan University

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Approved by _____ Professor

Date Approved 4/27/01

ABSTRACT

Lois LaPierre Lang

The Effects of Music on the Task Persistence of
Multiple Disabled Children in a Self-Contained Classroom

2001

S. Jay Kuder, Ed.D.

Special Education

This study examined the effects of background Mozart music on the task persistence of multiple disabled children in a self-contained classroom.

The subject sample included five children ages five to nine with multiple disabilities including autism, attention deficit hyperactivity disorder, pervasive developmental disorder, and moderate cognitive delays.

The procedure used an A-B-A research design. Baseline data was collected for five consecutive days during morning arrival and individual seat work. This was followed by an

intervention of playing background Mozart music during these two time periods for ten consecutive days. Baseline data was again collected for five days. A paired t test was used to analyze data.

Significant improvement was found in the on-task persistence behaviors for all the children in the study. Those students who exhibited the greatest incidents of off task behaviors during morning arrival or individual seat work showed the greatest improvement in on-task persistence following the Mozart music intervention. Improvements were not limited to the type of disability. All subjects in this study improved.

Implications for educators suggest use of background Mozart music may increase on-task persistence and have a calming influence for all multiple disabled children regardless of disability in varied classroom activities.

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Implications for educators suggest use of background music in the classroom may improve task persistence behaviors.

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Table of Contents

Acknowledgments	ii
Table of Contents	iii
Chapter 1 Introduction	1
Problem Statement	4
Hypothesis	4
Purpose	4
Overview	5
Chapter 2 Literature Review	6
Introduction	6
Music Increases Cognitive Skills	7
Music as a Behavioral Intervention	8
Effects of Music on Special Needs Students ..	9
Effects of Music on Task Persistence	12
Chapter 3 Research Design	17
Subjects	17
Design	18
Setting and Apparatus	19
Independent Variables	19
Measures	19
Procedure	20

Table of Contents

Chapter 4 Results	22
Chapter 5 Summary	26
References	32
Appendix	36

Chapter 1

INTRODUCTION

This study will examine the effects of music on the task persistence behaviors of 5 to 9 year old multiple disabled children in a self-contained classroom.

The challenges students with multiple learning disabilities face are many. Students with learning disabilities have difficulty with academic learning. Problems are experienced with basic reading skills, reading comprehension, written expression, mathematics calculation, and mathematics reasoning (Mercer, 1997). They exhibit language disorders, deficits in oral expression and listening comprehension. Individuals with learning disabilities exhibit perceptual problems, deficits in recognizing, discriminating, and interpreting sensation (Mercer, 1997). They show deficits in metacognition, "lacking an awareness of the skills, strategies, and resources needed to perform a task effectively" (p16, Mercer, 1997). Students with learning disabilities lack adequate social skills creating social-emotional problems. Many are frustrated by their learning difficulties

disrupting others and developing negative self esteem.

"Students with learning disabilities exhibit short attention spans, distractibility, and hypersensitivity" (p18, Mercer, 1997). "Hyperactivity associated with attention deficit disorders is referred to as an excess of nonpurposeful motor activity. These activities include finger and foot tapping, asking questions incessantly, repeating the same question, and the inability to sit or stand still" (p18, Mercer, 1997).

Educators consider each student with learning disabilities unique. The students may exhibit any one or all of these cognitive and social-emotional difficulties. The combinations of behavioral deficits are endless. These behaviors persist over time into adulthood (Mercer, 1997).

Given these challenges, educators design interventions to meet the needs of each student. Mercer (1997) cites work by Zentall noting specific interventions for sustained attention performance include use of music novelty. "Music reflects children's varied moods and helps them figure out who they are or are in the process of becoming at particular times and places" (p36, P. Campbell, 2000).

The Mozart Effect by Don Campbell discusses the effects of Wolfgang Amadeus Mozart's music to strengthen the mind. Campbell (1997) cites research conducted by Rauscher and

Shaw at the University of California in Irvine (1993) found higher brain function associated with listening to Mozart.

As a day care center director in 1998, music was utilized daily as an important part of the day care center's programming. Based on Campbell's compilation of the latest research findings in The Mozart Effect, the center implemented playing Mozart as background music during morning learning center activities and naptime. Classroom observations during learning center activity time indicated children were more attentive to staying on task than when there was silence. In 1998, I facilitated a workshop in Toronto at the National Association for the Education of Young Children Conference entitled "The Effect of Current Brain Research on Early Childhood Programming". "Mozart Effect" cassette music was played in the background before the workshop started. Of the 40 workshop participants, when asked if they noticed anything different about themselves when they entered the room, all stated they felt calmer and more relaxed. All stated listening to the Mozart music relieved the tension experienced rushing from workshop to workshop.

In 1999, I began teaching special education to multiple disabled children in a self-contained classroom in a private school setting. In addition to learning disabilities many

of the children also exhibited severe emotional disabilities. When playing Mozart music upon their arrival and during leisure times, it appeared to me the children were noticeably calmer and more on task than when there was silence.

Problem Statement

Does the playing of music enhance the task persistence behaviors of 5 to 9 year old multiple disabled students in a self-contained classroom? The music for this study will be defined as Don Campbell's recordings of "The Mozart Effect - Music for Children, Volume I, Tune Up Your Mind". The music played is all instrumental using piano, string, and wind instruments. Task persistence behaviors will be defined as increase time on task without teacher prompts. Multiple disabilities will include autism, attention deficit hyperactivity disorder, pervasive developmental disorder, and moderate cognitive delays.

Hypothesis

The hypothesis for this study is that there will be a positive relationship between playing Mozart music and increased time on task behaviors of multiple disabled children.

Purpose

The purpose of this thesis proposal is to find whether

there is a relationship between Mozart music and on task behaviors of multiple disabled children. These findings will have a positive impact on student's social and emotional development. The implications for educators if findings are positive are to implement playing Mozart music during arrival periods and during individual seat work. This will assist students in maintaining sustained attention performance.

Overview

The literature review will include Don Campbell's The Mozart Effect, the Irvine studies conducted by Rauscher and Shaw, and recent research on the effects of music on on-task behaviors. The research design will describe the subjects of the study, the instrument used and procedure to gather data, and analysis of the data. Discussion of findings and conclusion of study will follow.

Chapter 2

LITERATURE REVIEW

Introduction

Music is an integral part of the world. Music is a universal language that speaks to all ages, sexes, races, religions, abilities, and nationalities. It rises above social, economical, and educational levels (Campbell, 1997). Music speaks to the cognitive, emotional, physical, and spiritual areas of human growth and development (Amir, 1999). Music speaks to everyone. We are in tune, in sync, or out of tune, out of sync. We set the right tone, strike a chord, or communicate on the same wavelength. We play it by ear, orchestrate deals, and listen to sales pitches. Although we may not view ourselves as musical, musical imagery is a part of everyday life (Campbell, 1997). Music speaks to every species. "Birds make it, snakes are charmed by it, and whales and dolphins serenade each other with it" (p10, Campbell, 1997). Music has reached the stars. In the 1949 Warner Brothers film classic "Mighty Joe Young", the song "Beautiful Dreamer" is played to lull young Joe to sleep and is played again throughout the film when he

is older to calm him. Music has reached beyond the stars. The Voyager space mission carried varied types of music including classical, rock, and jazz, for the enjoyment of other life forms (Campbell, 1997).

Music Increases Cognitive Skills

Campbell (1997) notes research conducted in 1993 by Drs. Rauscher and Shaw from University of California in Irvine that found that college students listening to a Mozart composition briefly increased scores on the paper folding task of the Stanford Binet Scale of Intelligence. The college students experienced three conditions, listening to Mozart, a relaxation tape, and silence. Test performance was significantly better after listening to Mozart than the other two study conditions. The increase in scores in this subtest of spatial reasoning lasted only ten minutes. Other non-spatial task were not effected (MuSICA, 1994). MuSICA (1995) notes Rauscher and Shaw repeated the study in 1995. Results indicated increased scores in the spatial reasoning task of paper folding. The study showed listening to Mozart music was effective whereas less structured music and listening to prose were not. Rauscher and Shaw conducted a study in 1997 that found piano lessons significantly improved the reasoning skills of preschool children.

Findings showed that preschool children who received basic piano keyboard instruction scored an average on 34 percent higher on tests of their reasoning skills than children who were given computer and singing lessons. This research showed that although the Mozart Effect lasted only about ten minutes for college students, improvements lasted for more than a day in the preschoolers (Boyer, 1997).

Music as a Behavioral Intervention

Music has been used in learning situations as a behavioral intervention. Barbara Robbins notes that music therapy is used systematically to produce an effective change in behavior (Voyles, 1995). Music causes excitement or relaxation, happiness or sadness. It causes physiological changes in rates of breathing, heart beat, and blood pressure. The theme music from the film Jaws caused panic and terror. It was only toward the end of the film viewers actually glimpsed the shark. Music is used by music therapists to achieve goals and objectives found in individualized educational plans. These objectives include cognitive areas including reading and mathematics; language skills; auditory, visual, and motor skills; and social integration (Andrews & Dowling, 1991; Voyles, 1995; Standley & Hughes, 1996; Campbell, 1997; Campbell, 2000).

Research suggests music therapy applications influence individual growth within group instruction, meaningful communication skills, and socially appropriate interactions between learning disabled children and able children. Music plays an important part in the daily lives of children. Music helps children socialize and express their emotions. It helps them determine who they are or are in the process of becoming at particular times and places (Campbell, 2000).

Effects of Music on Special Needs Students

Bettison (1996) conducted a study of the long term effects of auditory training on children with autism. Auditory training is a process used with children of autism to help them respond appropriately to sound. Bettison discusses abnormal responses to sound are noted as one of the sensory perceptual difficulties found in children with autism. These children may selectively fail to hear or block out some sounds including speech. Some behavioral indicators of abnormal processing are behavioral, attention, and communication difficulties (Bettison, 1996). Bettison notes work by Berard (1993) that hypersensitivity to sound is the most apparent abnormal response to sound. Auditory training was developed by Berard and is used to reduce some or all of these responses to sound. Students in the study

wore headphones connected to a audio tone enhancer. A five disc compact disc player played music of different styles. Switches on the audio tone enhancer filtered up to 14 frequencies and allowed varying parts of the sound to pass through. The study included eighty children ages 3 to 17. years of age, diagnosed with autism and mild to severe distress in the presence of some sounds, divided into two groups. The experimental group received auditory training. The control group listened to the same unmodified music under the same conditions. Results indicated significant improvements in behavior. These behaviors included increased human interaction and appropriate responses to others. There was a decrease in signs of distress in the presence of sounds and some stopped staring into space (Bettison, 1996).

Durand and Mapstone (1998) studied the effects of mood inducing behavior on challenging behavior of two children and one adult with severe mental retardation. Challenging behaviors were defined as temper tantrums, screaming, crying, and physical aggression towards others and towards self. The intervention used during the study included fast and slow beat music. The results of the study found that there was a reduction of challenging behaviors in one subject when fast beat music was played. Music was used

because it engages nonverbal persons with affective responses and can produce affective changes such as smiles and frowns (Durand & Mapstone, 1998).

There have been few studies researching the non-contingent use of music in influencing the behavior and performance of children. Hallum and Price (1998) note a study by Scott (1996) that describes a group of ten special needs children, who exhibited angry disruptive behaviors during lessons. While Mozart music was played during normal learning activities the children became calm and cooperative. Children work well with music in the background. The right music at the right time can make children less stressed, happier, and more productive (Giles, 1991; Chalmers et al., 1999). Hallum and Price (1998) conducted a study about the effects of playing background music in the classroom on the behavior and performance in mathematical tasks on ten children with emotional and behavioral difficulties, who also exhibited a high frequency of disruptive behaviors. Disruptive behaviors included tantrums, crying, hyperactivity, verbal and physical aggression. The study design included four trials without background music, followed by four trials with background music. After a gap of one week, the procedure was repeated in reverse order for three trials with background music and

without background music. The study found the introduction of background music made significant improvements of the study group on math tasks. The study found that calming music had greatest effect on those children who exhibited hyperactivity.

Effects of Music on Task Persistence Behaviors

Music has been found to effect task persistence behaviors in students of all ages and abilities. Music therapy engages children in cognitive, social, and motor tasks. A Tallahassee, Florida study of two inclusive classes of 33 four year old children were observed twice in thirty minute music therapy sessions. Results showed following intervention that children showed an increase of on task behaviors throughout the two thirty minute sessions (Standley & Hughes, 1996). Research shows music can increase student attentiveness. Sustained attentiveness is further increased when combined with behavior management techniques (Rooney, 1993). Standley and Hughes (1996) note research by Madsen and Alley (1979) that found behaviorally trained music therapists using music for non-music objectives observed less off task behaviors among students than general music educators teaching music objectives. Off task behaviors during music activities occurred less than

nonmusical activities.

There have been few studies on the effects music has on influencing on task behaviors. Taber et al. (1999) conducted a study using a self-operated auditory prompting system to decrease inappropriate and off-task behaviors of a 12 year old child with autism. Results of the study indicated a decrease in inappropriate behaviors and a decrease from the baseline of teacher prompts for child to remain on task. During the study the student was wearing head phones and exhibiting on task behaviors when it was discovered by the observers the tape had been erased. These on task behaviors were generalized across other settings (Taber et al., 1999).

Abikoff et al. (1996) conducted a study on the effects of auditory stimulation on the mathematics performance of children with attention deficit hyperactivity disorder (ADHD) and nondisabled children. The subject participants included 20 boys with ADHD and 20 nondisabled boys aged 7 to 13 years old completing arithmetic problems containing addition and subtraction problems for grade levels 2 through 6. There were three interventions. High stimulation included music, low stimulation included speech, and no stimulation was silence. Results indicated nondisabled children performed well in all three auditory stimulations. However, there was significant improvement in performance

for the children with ADHD when listening to the music intervention. For certain assignments, for example, mathematics, background stimulation such as music helps students stay on task for a longer time (Abikoff et al., 1996).

Kostka (1993) conducted a study that examined the behavior of a student with disabilities in both the regular and the special education music classrooms. The subject was a 9 year old boy with autism. Results indicated that the inappropriate target behaviors were less frequent and the level of participation was found to be slightly higher in the regular music classroom than in the special education music classroom.

Colwell (1995) found in her pilot study of adapting music instruction for elementary students with special needs that when learning a new song and listening to music students became more on task and were more successful in completing the tasks.

In summary, music is a universal language that speaks to everyone on every level of being. Music increases cognitive skills as indicated by the 1993 Mozart Effect studies conducted by Rauscher and Shaw at Irvine. Music is used as a behavioral intervention in learning situations to effectively produce a change in behavior. Music effects

students with special needs in many ways. Auditory training on children with autism has shown to produce an increase in human interactions and appropriate responses to others (Bettison 1996). Music has been found to reduce challenging behaviors in subjects with severe mental retardation (Durand and Mapstone, 1998; Orr et al., 1998). Use of background music during lessons for special needs students has resulted in a reduction of aggressive and disruptive behaviors (Hallum and Price, 1998). Music effects task persistence behaviors in students of all ages and abilities as indicated by the results of studies conducted by Standley & Hughes (1996). There is limited research on the effects of music on influencing on task behaviors. A study by Taber et al. (1999), resulted in a student with autism remaining on task while wearing headphones. Abikoff et al. (1996) studied effects of auditory stimulation on the mathematics performance of children with attention deficit hyperactivity disorder found improved performance for children with ADHD when listening to the music intervention. Kostka (1993) found higher participation and less frequent inappropriate behaviors. Colwell (1995) found students were more on task when listening to music. Most studies examined comparisons of special needs students on task performance in regular education classrooms and special education classrooms.

The present study is an experimental design in which task persistence behaviors of children with multiple disabilities will be observed with and without background music in a self-contained special education classroom.

Chapter 3
RESEARCH DESIGN

Subjects

There are five subjects in the study. The four boys and one girl range in age from five to nine year olds with multiple disabilities. The multiple disabilities include autism, perceptually impaired, cognitive delays, attention deficit hyperactivity disorder, pervasive developmental disorder, and speech and language delays. The subjects in the study are enrolled in the same self-contained classroom in a private special education school. The subjects are sent to the school by their corresponding public school district of residence. The subjects reside in urban, rural, and military base areas of southern New Jersey.

Subject 1 is an eight year old male with cognitive, speech, and language delays, and social-emotional deficits. Academic level is second grade. The subject resides in a rural area with his adoptive grandparents and siblings.

Subject 2 is a seven year old female with attention deficit hyperactivity disorder and deficits in social-emotional and cognitive areas of development. Academic work

is on a Kindergarten level. The subject receives daily medication. The subject resides in a rural area with both parents and two older siblings.

Subject 3 is a nine year old male with autism. Academic level is first grade. The subject receives daily medication to relieve anxiety. The subject lives on a military base area with his parents and siblings.

Subject 4 is a seven year old male with cognitive, speech, and language delays, and perceptually impaired. Academic work is on a Readiness level. The subject resides in an urban area with his uncle, siblings, and cousins during the week. On weekends, the subject resides in a rural area with his aunt, siblings, and cousins.

Subject 5 is a five year old male with pervasive developmental disorder and social-emotional difficulties. Academic work is on a Readiness level. The subject receives daily medication. The subject lives with his parents in a rural area. The subject is separated from his younger sibling at parent's request because of inappropriate behaviors.

Design

The research design of the study is a single subject experimental design symbolized as A-B-A. Baseline behavior will be observed for five days. Music intervention will be

applied for ten days. This will be followed by stopping the music intervention and observing behavior for five days. The independent variable is the "Mozart Effect For Children" cassette tape Volume I, played during the intervention period for ten days played during morning arrival and individual seat work for thirty minutes each time period.

Setting and Apparatus

The study will be conducted in a self contained classroom in a private school setting. There are five subjects included in the study because that is the number of students in the class. Materials needed for the study include a tape cassette player and "The Mozart Effect, Volume I, Tune Up Your Mind" cassette tape by Don Campbell.

Independent Variables

The author and classroom teacher assistant will serve as the experimenters. Mozart music will be played upon arrival to the classroom and during individual seat work for thirty minutes each time period.

Measures

Baseline off task behaviors were identified for each subject. Subject 1 off task behaviors include staring, inappropriate calling out, out of seat during independent seat work, and playing with objects, and daydreaming. Subject 2 off task behaviors include inappropriate calling

out, inappropriate laughing, inappropriate body movements, dropping objects, and out of seat during independent work. Subject 3 off task behaviors include calling out, inappropriate body movements, dropping objects. Subject 4 stereotypical off task behaviors include stemming by inappropriate calling out, inappropriate body movements, and inappropriately out of seat during independent work. Subject 5 off task behaviors include inappropriate calling out, inappropriate body movements, and inappropriately out of seat during independent seat work.

Observations of each subject indicating 4 specific off-task target behaviors will be recorded on a graph for a period of 5 minutes at 15 second intervals. Specific off task behaviors observed and recorded are inappropriate noises, daydreaming, inappropriately out of seat during independent work, and stereotypical inappropriate body movements. See appendix A. The number of times the behavior occurred is divided by the number of intervals. This is divided by the total number of 15 second intervals and multiplied by 100 which will give the data collected a percentage of time behavior occurred.

Procedure

Subjects will be instructed to participate in their regular routine upon arrival. Mozart music will be played

during the intervention phase. Informed consent by parent will be obtained by written communication with the parent prior to the start of the study. The researcher and teacher assistant has contact with the subjects. The researcher and teacher assistant will work together to record information on observation recording form for five consecutive days at the same time each day. Mozart music will be played as an intervention for thirty minutes for 10 consecutive days upon subject's arrival and during individual seat work. Baseline observations will again be recorded with no music played during arrival and individual seat work for 5 days.

Chapter 4

RESULTS

The study examined the effects of Mozart music on the task persistence behaviors of multiple disabled children in a self-contained classroom. The study observed five children two times a day for five consecutive days to gather baseline data. The two daily observation periods are identified as morning pretest and morning posttest, and individual pretest and individual posttest. The morning segment occurred during morning arrival. The individual segment occurred during individual seat work. Background Mozart music was played during a ten day intervention during the morning and individual time periods. The five children were again observed two times daily with no background music for five consecutive days.

The main findings of average scores for all subjects are summarized in Tables I and II. In Table I, the mean score for off task behaviors during the morning arrival activities pretest average was 62.4 (SD 26) and posttest average was 38.3 (SD 18). A paired *t* test revealed a mean difference score of 24.100 (df=4, $t=4.347$, $p=.0122$). In Table II, the mean score for off task behaviors during

individualized seat work pretest average was 53.2 (SD 18.6) and posttest average was 14.625 (SD 2.8). A paired t test revealed a mean difference score of 31.625 (df=3, t=4.714, p=.0181). The paired t test revealed significant differences between the two conditions with a significant decrease in off task behaviors when background Mozart music was played.

Table I *morning pretest and posttest averages*

	<u>Mean</u>	<u>SD</u>
morning pretest average	62.4	26
morning posttest average	<u>38.3</u>	<u>18</u>

Table II *individual pretest and posttest averages*

	<u>mean</u>	<u>SD</u>
individual pretest average	53.2	18.6
individual posttest average	<u>14.625</u>	<u>2.8</u>

Comparing each subject in pretest and posttest conditions revealed a significant positive relationship Mozart music had on decreasing off task behaviors (Tables III and IV). In Table III, Subject 2 showed the most off task behaviors in morning pretest conditions and exhibited the greatest decrease in off task behaviors during the

posttest. Subject 4 showed the least amount of off task behaviors during the morning pretest and showed the smallest decrease in off task behaviors in the morning posttest. During the individual seat work (Table IV), Subject 5 showed the most off task behaviors in the pretest and showed the greatest decrease in off task behaviors in the posttest. Subject 3 showed the least amount of off task behaviors during the individual pretest and showed the least amount of decrease in off task behaviors during the individual posttest. All subjects showed a decrease in off task behaviors during the morning and individual posttests.

Table III *individual comparisons morning pretest posttest*

<u>subject</u>	<u>morn pre avg</u>	<u>morn post avg</u>	<u>difference</u>
1	55	34.5	20.5
2	89.5	45	44.5
3	78.5	59.5	19
4	22	10.5	11.5
5	67	42	25

Table IV *individual comparisons seatwork pretest posttest*

<u>subject</u>	<u>ind pre avg</u>	<u>ind post avg</u>	<u>difference</u>
1	48	16.5	31.5
2	57	10.5	46.5
3	29.5	15.5	14
4	50.5	16	34.5
5	81	22.5	58.5

Chapter 5

SUMMARY

The findings of the study suggest that playing background Mozart music within a multiple disabled self-contained classroom enhances on task performance and decreases off task behaviors.

All subjects showed a decrease in off task behaviors during the morning posttest and individual posttest. The amount of decrease in off task behaviors varied between subjects and posttests. It was not isolated to one particular subject or observation period.

Results showed Subject 2, a female with attention deficit disorder, who had the greatest incidents of off task behaviors during the morning pretest, had the greatest decrease in off task behaviors during the morning posttest. Whereas, Subject 4, a male with moderate cognitive delays and perceptual impairment, showed the least amount of off task behaviors during the morning pretest, also had the least amount of decrease in off task behaviors during the morning posttest.

Results showed Subject 5, a male with pervasive

developmental disorder, showed the greatest amount of off task behaviors during individual pretest, had the greatest decrease in off task behaviors during the individual posttest. Whereas, Subject 3, a male with autism, showed the least amount of off task behaviors during the individual pretest and had the least amount of decrease in off task behaviors during the individual posttest. Playing background Mozart music had a positive effect on the task persistence behaviors of multiple disabled children by decreasing off task behaviors.

This study reinforced Giles (1991) and Chalmers et al. (1999) work that the right music at the right time can make children less stressed, happier, and more productive. The study converged with the study conducted by Hallum and Price (1998). In their study, Hallum and Price examined the effects of playing background music in the classroom on behavior and performance in mathematical tasks on children with emotional and behavioral difficulties. They found that significant improvement was observed in the group on math tasks and that the calming music had the greatest effect on children with hyperactivity. By comparison, the present study also suggests that the calming music of Mozart had the greatest effect of decreasing off task behaviors of a subject with hyperactivity.

The study agreed with a study conducted by Kostka (1993) that examined the behavior of a student with disabilities in both the regular and the special education music classroom. The results indicated the inappropriate target behaviors were less frequent and level of participation was slightly greater. By comparison, inappropriate off task behaviors were less frequent during both observation periods indicating an increase of on task performance.

The study extended a study conducted by Taber et al. (1999) about using a self-operated auditory prompting system to decrease inappropriate and off task behaviors of a child with autism. By comparison, the study played background music to all the subjects. Most important is that the results from both studies indicate a decrease in inappropriate behaviors and that on task persistence was generalized across other settings.

This research contributed to the existing research conducted by Hallum and Price (1998), Kostka (1993), and Taber et al. (1999). This research was different from past investigations in that the subjects participating had multiple disabilities whereas previous research worked with students with only one disability such as autism or attention deficit hyperactivity disorder. The current study

supported previous research in that background music decreases off task inappropriate behaviors indicating an increase in on task performance.

This observer found that the research project supported previous research and personal belief that calming music has a positive effect. The findings supported Hallum and Price (1998) results that the behaviors and performance of emotionally disturbed children within a special education classroom may be enhanced by calming background music such as Mozart.

Limitations in completing the research project were few. The study sample was small. There was a concern to schedule the same daily observation periods when all the subjects were present as all the subjects are pulled out of the classroom throughout the week for individual and group therapies at various times. There were two observers recording data during each observation. Some observation periods had greater difference in the number tallied of off task behaviors observed by each observer. This was caused by the physical positioning of the observers in the classroom and the angle of view.

Future research should look at other positive characteristics that the effects of calming music has on students. Future research should support previous studies

that background music decreases off task behavior and increases on task performance. Further research is required to relate positive effect of background music to other classroom settings and tasks not limited to math performance but to include other subject areas.

Music is an important instructional tool for use by all classroom teachers not only limited to the music teacher. As research has indicated, soothing music provides a calming environment. Playing soothing background music during morning arrival times may facilitate a smoother transition from home to school for those students who experience difficulty. This study indicated playing background music during individual seat work showed students exhibited more on task behaviors. The background music possibly provided noise reduction allowing students to be more attentive to their task. In this study, all children showed improvement in task persistence when background Mozart music was played regardless of their disabilities.

Music is an integral part of our world. Music is a universal language. It speaks to every species. It plays an important part in the daily lives of our children. The right music at the right time can make children more productive, less stressed, and happier. Playing calming background music such as Mozart, has a positive effect on

decreasing off task behaviors in the special education self-contained classroom indicating an increase on task persistence behaviors. Introduce your children to the classics.

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APPENDIX

OBSERVATION RECORD

Student (1) _____
 Student (2) _____
 Student (3) _____
 Student (4) _____
 Student (5) _____

Date: _____
 Observer: _____
 Method: Time Sampling

Class: Multiple Disabilities

Ages: 5-9 years old

Behavior Observed: Off-Task Behavior

1. inappropriate noises
2. daydreaming
3. inappropriately out of seat during independent seat work
4. stereotypical inappropriate body movements

KEY X = Behavior Occurring
 O = Behavior Not Occurring

*Mark is made if behavior is observed at least once during the 15 second interval

	1	3	4	6	1	3	4	6	1	3	4	6	1	3	4	6	1	3	4	6	1	3	4	60
1																								
2																								
3																								
4																								
5																								
1																								
2																								
3																								
4																								
5																								

X = Subject

y = 15 second intervals