

Level of Achievement	Abstract (5 points)	Review of Lit. (10 points)	Method (10 points)	Results (15 points)	Discussion (15 points)	References (5 points)	APA Style (10 points)	Scholarly Writing Style (15 points)
Exemplary	Clearly presents topic and summarizes other sections. Length is no longer than 200 words. 5 points	Clearly presents research-based topic and question(s). Includes a minimum of 11 relevant citations that contribute in some way to the study. 10 points	Describes all methods and materials with clarity and in detail, such that study is easily understood and could be replicated by others. 10 points	Results are presented in a clear and concise manner with no conclusions, personal references or information. 14-15 points	Demonstrates clear conceptual understanding through synthesis of previous sections. Provides multiple, relevant conclusions. 14-15 points	All required information is present in each citation. Minimum of 11 citations in both text and reference section of paper. 5 points	APA format is adhered to throughout the work. 10 points	Clear organization, Smooth transitions, Consistent tense, Third person writing, correct grammar and spelling throughout 14-15 points
Quality	Presents research topic and summarizes other section but lacks clarity. Or length is far above or below 200 words 4 points	Presents research-based topic and/or question(s) but lacks clarity in one of these areas. Includes less than 11 relevant citations that contribute in some way to the study. 8-9 points	Describes methods and materials but lacks detail and/or clarity, such that study is easily understood and could be replicated by others. 8-9 points	Results are presented in a clear and concise manner with some conclusions, personal references or information. 11-13 points	Demonstrates clear conceptual understanding through synthesis of previous sections. Provides single relevant conclusion. 11-13 points	All required information is present in most citations. Minimum of 11 citations in both text and reference section of paper. 4 points	APA format is adhered to with only minimal errors. 8-9 points	Clear organization, Smooth transitions, Correct grammar and spelling with only minimal errors. 11-13 points
Adequate	Presents research topic but lacks summary of other section(s) but lacks clarity. 3 points	Minimally presents research-based topic and/or question(s). Includes only a few citations that contribute in some way to the study. 6-7 points	Describes methods and materials but vaguely and/or not in a form that is easy to follow. 6-7 points	Results presented but not clearly and concisely. Might include information that should be placed in other sections of the paper. Inclusion of raw data. 7-10 points	Demonstrates minimal conceptual understanding of method, results and research topic. 7-10 points	All citations in text are listed. References are consistently formatted. Less than 11 citations in both text and reference section of paper. 3 points	APA format is adhered to with several errors. 6-7 points	Clear organization, Smooth transitions, Correct grammar and spelling with several errors. 7-10 points
Needs Improvement	Fails to present research topic adequately or lack summary of other sections 1-2 points	Fails to present background and research question(s). Includes only a few citations that contribute in some way to the study. 1-5 points	Describes methods and materials but vaguely and/or not in a form that is easy to follow. Major pieces of information/steps not referenced or addressed at all. 1-5 points	Results not presented in narrative format. May include information that should be placed in other sections of the paper and/or include raw data. 1-6 points	Does not demonstrate conceptual understanding of method, results and research topic. Presents poor conclusion or no conclusion at all. 1-6 points	Some text information lacks citation. Some citations in text aren't listed. Formatting is inconsistent. 1-2 points	APA format is neglected throughout with many errors. 1-5 points	Clear lack of effort in organization, transitions, correct grammar and spelling throughout most of the work 1-6 points
No Effort	Section is missing completely or has severe lack of information and/or formatting. 0 points	Section is missing completely or has severe lack of information and/or formatting. 0 points	Section is missing completely or has severe lack of information and/or formatting. 0 points	Section is missing completely or has severe lack of information and/or formatting. 0 points	Section is missing completely or has severe lack of information and/or formatting. 0 points	Section is missing completely or has severe lack of information and/or formatting. 0 points	APA format is not adhered to through most or all of the work. 0 points	No apparent attempt at organization, transitions, correct grammar and spelling in the work 0 points

Turned in previous drafts with final draft (15 points): 15TOTAL POINTS: 93

Materials and Methods Section Rubric

- 19-20 Contains effectively, quantifiably, concisely organized information that allows the experiment to be replicated
- ✓ Written so that all information inherent to the document can be related back to this section
 - ✓ Identifies sources of all data to be collected
 - ✓ Identifies sequential information in an appropriate chronology
 - ✓ Does not contain unnecessary, wordy descriptions of procedures.
- 17-18 As above, but contains unnecessary information, and/or wordy descriptions within the section.
- 14-16 Presents an experiment that is definitely replicable
- All information in document may be related to this section
- Fails to identify some sources of data and/or presents sequential information in a disorganized, difficult pattern.
- 11-13 Presents an experiment that is marginally replicable
- The reader must infer parts of the basic design
- Procedures not quantitatively described
- Some information in Results or Conclusions cannot be anticipated by reading the Methods and Materials section.
- 0-10 Describes the experiment so poorly or in such a nonscientific way that is cannot be replicated.

METHOD

Participants

The participants (n=11) of this study were children, aged 4-6 years, who were enrolled in Korean Language School in Lawrence during the 2006-2007 school year. The participants had a class once every Saturday. The participants were from three different classrooms in Korean Language School. [↑] ~~The participants~~ ^{and} included three males and eight females. ~~and~~ Korean was the participants' native language. The same curriculum was implemented in three classrooms [↑] and included drawing, music, and Korean language (over the past six months.)

Research Design

The period of data collection was four consecutive weeks. Each condition was conducted simultaneously ^{in the 3 classes} for 10 minutes during the participants' drawing activity in three classrooms. The study design consisted of an ABAB format. Condition A was conducted without music and condition B was examined with background music during the drawing activity.

Measures

The on and off-task behaviors of participants were measured by the Student Observation Form (Madsen & Madsen, 1983), which is commonly used to measure students' on and off-task behaviors. There were two categories in this form: on-task behavior and off-task behavior. According to the author, on-task behavior was determined by classroom rules and teacher-designated academic activities. On-task

behaviors included participating in group activities, remaining in a sitting position, and responding to the teacher's questions. The off-task behaviors were recorded based on three categories; N, M, O.

N contained verbal and object noises. Verbal noises included inappropriate oral responses, such as yelling, talking, singing, or laughing. Object noises, slamming books or kicking furniture, represented any noise that result from students' off task behaviors. M divided into three sub categories: motor, gross motor, and minor motor behavior. Motor behaviors were interruptions against the classroom rules. Gross Motor behaviors included walking around the room, running, and some aggressive behaviors, such as hitting, kicking, or pushing. Minor motor behaviors contained thumb-sucking, fingernail biting, playing with learning materials, and other behaviors that were not related to the student's activity. Lastly, O stood for other behaviors apart from the above, or passive off-task behaviors, such as daydreaming and staring into space.

To ensure reliability of the observation and to record participants' on and off-task behaviors, camcorders were used in each classroom during the experiment. After each experiment two observers recorded on and off-task data on the Student Observation Form, and observers recorded data using 10-second and five-second intervals. A CD-ROM that offers observing and recording cues was used at the beginning of recording the data to ensure the accuracy of duration of the interval.

Procedures

The consent forms for this study were signed by participants' parents and collected by each classroom teacher. After collecting the consent forms, the researcher consulted with

classroom teachers to schedule appropriate times. Two other classroom teachers received specific instructions to videotape participants' off-task behaviors. To record off-task behaviors, video cameras were used in three classrooms. The cameras were positioned in the television cabinet, therefore the participants would not be distracted by their presence. Data were collected every Saturday from 10:30 a.m. to 10:40 a.m. during classroom time. During the first and third week of the experiment, the classroom teachers implemented drawing activities with specific experimental instructions, no reinforcement to reduce off-task behaviors, and without background music. Under the same conditions, background music was implemented only during the second and fourth week during the drawing activity. Recorded videotapes for each experiment were collected by the researcher from the three classrooms. To ensure reliability while collecting the observation data, the researcher and the other observer participated in recording on and off-task behaviors.

Materials

Music. J. S. Bach's Goldberg Variations, Variation No. 1 and Variation No. 14 were used as background music for the experiment. Music was selected based on the similar beats per minute (bpm) of the heart rate of children, and ranged from 90 to 110 bpm.

Equipment. Three DELL laptops were used to play music in each classroom, and three Sony Mini DV camcorders were used to record the participants' behaviors in classrooms.

Sung

19/20

Review of Literature Scoring Criteria

Level 5: 19-20 points

- The student draws extensively on evidence presented in the articles to support the conclusion. The conclusion makes coherent use of the evidence.
- Significant recognition of the authors cited; the student may have made some attempt to consider the author's findings or point of view in order to discuss the student's conclusion.
- The student recognizes multiple sides of the issue and is able to make transfers across topics; recognizes the strength and limitations of each position in taking a stand.

Level 4: 17-18 points

Some criteria met from level 5 and some from level 3

Level 3: 14-16 points

- The student has made a limited effort to use evidence from the articles to support the argument; the evidence may not support the conclusions or may be used somewhat incoherently.
- Some identification or recognition of author's work, but little development.
- The student recognizes that another side of the issue exists, but finds support for only his or her side; may tend to build up his or her argument by tearing down the other side.
- May be a "laundry list", citing much evidence both pro and con, but student unable to make transfers of the information in the articles to relate to their topic.

Level 2: 11-13 points

Some criteria met from level 3 and some from level 1

Level 1: 0-10 points

- The student does not cite evidence from the articles.
- No identification or recognition of author's work.
- Student sees only one side of the argument; no evaluation attempted.
- No evidence that the student used the articles; could have written the essay by only skimming the articles.

Level 0

- Non-scorable response

Work on adding transitions (not just headings)
to create a better flow from one topic
to the next.
Writing looks good!

Sung [REDACTED]
MEMT 366
Literature Review

Research Title: *The Effect of Background Music on Children's Attentive Behaviors*

Attention and attentive behaviors

Attention is one of the most significant and basic skills in people's academic, social, and communication development, as well as other important areas in their daily life (Gfeller & Thaut, 1999). The abilities to pay attention and increase attention span are important, long-term processes that people continue using almost from their birth.

In the developmental stages of children, even within two weeks of birth, babies pay attention to their mother's face, and as babies keep paying attention, they cognitively recognize familiar faces and respond to them by smiling (Developmental Stages, 2006). As children grow up, they have increased ability to select stimuli and attend to it. Through children's more organized ability to attend, they effectively learn and understand information (Gfeller & Thaut, 1999).

Generally, children have short attention spans and there are many resources available to help extend their ability to attend. Studies ^{indicate} ~~have shown~~ that children's attention spans are not fixed and must be developed (DeGaetano, 1998).

^{you need a transition} Since identification, growth in rates of children with Attention Deficit (Hyperactivity) Disorders (ADD/ADHD) has become ~~an~~ increasingly important to ^{fix wording?} continued study of attention and attentive behaviors. According to Barkley and Tannock (1998), the frequency of ADHD is now 3% to 6% of all children, and it occurs in male approximately three times more than in females, from their childhood to adulthood (Cited in Rickson & MHealSC, 2006).

You need at least 3 sentences per P

Also, lack of attentive behaviors of children without identified disorders such as ADD or ADHD is an increasingly important issue as well. According to Madsen and Madsen's Student On-Task Observation Form (1983), attentive behaviors include verbal and motor behaviors defined as rules for group participation, such as remaining seated, ^ukeeping hands to self (Cited in Robb, 2003).

write a transition

~~Effect of music therapy interventions on attentive behavior~~

Studies have long supported the positive effect of music on children's attentive behaviors. Standley and Hughes (1996) found that preschool children performed on-task behavior much more regularly during music therapy sessions. In the study, children maintained 97% of attentive behaviors during the sessions, and their high level of sustaining on ~~the~~ ^{behavior} task affected highly appropriate responses to the teacher's directions as well (Cited in Robb, 2003).

According to Register (2004), 5 to 7 year-old children showed more on-task behaviors when studied under music condition experiments than under video sessions. Likewise, in Robb's pilot study (2003), preschoolers with visual impairments showed higher scores in attentive behavior, such as staying still in place, during musical group sessions, than during activity-based group sessions. The participants sang, played musical instruments, and did movements in music-based sessions, and played games and performed interactive stories in play-based sessions. This research suggests that music therapy has a positive influence on increasing attentive behavior for children with vision ~~loss~~, as well as their typically-developing peers.

} more explanation needed

Transitions

Additionally, some research supports the effect of music therapy interventions on children and adolescent with Attention Deficit Hyperactivity Disorder (ADHD).

According to Jackson's survey (2003) of music therapists, results indicated that music therapists use various music interventions, such as music and movement, instrumental improvisation, musical play and group singing, to address different kinds of goals, including: behavioral, psychosocial and cognitive goals for children with ADHD.

Additionally, many music therapists report providing both individual and group sessions for children with ADHD, with most music therapists reporting that music therapy treatment for children with ADHD showed better outcomes than other professionals', teachers' or parents' interventions.

Even in treatment for adolescents with ADHD, music therapy interventions, including instructional and improvisational models, showed positive effect to reduce ADHD symptoms such as inattentive behaviors, impulsivity and hyperactivity for participants (Rickson & MHealSc, 2006).

Transition

~~Children's music listening ability and the effect background music on children's attentive behaviors~~

Sims' recent research (2005), comparing the duration of children's music listening span under directed and free conditions, indicated that, in free listening, the maximum duration of listening to music was longer than in directed listening. Furthermore, the author suggests that children have the potential to listen to music even when it is in a free condition, thus free music listening is supposed to be the significant goal for preschool education.

Based on children's musical listening ability, there are several studies that showed the positive effect of background music on children's academic situations, such as writing and spelling. Imig and Koppelman's research (1995) supported the finding that classical background music significantly enhanced 2nd grade students' writing in word count and consistency more than as compared to Jazz, popular music or no-music condition.

Similarly, ~~in Rosemary's research~~ ^{indicated that} (1998), children showed higher on-task performance during independent writing while listening to classical music. Additionally, Anderson et al demonstrated positive results for elementary school students' spelling accuracy when listening to classical music during testing. In the study, participants listened to *The Mozart Effect Music for Children (Vol.1) Tune Up Your Mind* during their spelling activity, and the students' post-test score was higher than the pre-test scores in which no music had been used. In discussion, the researchers recommend providing classical music for children based on physiological help. The tempo of Baroque, Vivaldi and Mozart music is similar to people's heart rate, and may offer a relaxed condition. Through that match, children may be provided with the best learning conditions, one that provides benefits such as high attention and relaxation (Anderson, Henke, McLaughlin, Ripp & Tuffs, 2000).

Though several researchers have supported the positive effect^s of music as interventions, and as background music on increasing children's attentive behaviors, they have thus far focused principally on examining attentive behaviors for academic goals using music applications in both music therapy interventions and as background music. Also, there is shortage of research substantiation focused on using background music to increase children's attentive behavior. The narrowed focused and lack of research in the

area raises questions about the efficiency of background music in more creative activities, such as in art.

The purpose of this study is to examine the effect of background music on children's attentive behaviors during drawing activities and will compare levels of attentive behavior with and without background music.

References

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Running head: Music and Attentive Behavior

The Effect of Background Music on Children's Attentive Behaviors

Sung [REDACTED]

University of Kansas

Abstract

This study was designed to examine the effects of background music on children's attentive behaviors during drawing activities, and to compare the number of on- and off-task behaviors with and without background music. The participants (n=10) in this study were three males and seven females aged 4-6 years, who were enrolled in a Korean Language School in Lawrence for the 2006-2007 school year. Two ~~experiments~~^{trials} were conducted within two weeks. In the first ~~experiment~~^{trial}, all subjects participated in a 10-minute drawing activity without background music. In the subsequent ~~experiment~~^{trial}, the participants took part in 10 minutes of a drawing activity with background music. Goldberg Variation No.1 and No.14 by J. S. Bach were used as background music. The results of this study ~~showed~~^{indicated} that the participants' on-task behaviors increased under music conditions, and off-task behaviors such as N (making noise) and O (other behaviors, such as daydreaming) decreased under music conditions. However, M (motor behaviors) increased with music conditions. Also, the total number of off-task behaviors, including all N, M, O and other off-task behaviors decreased. Although these results would suggest further study in order to get significant results, this study would imply that background music would have a positive effect on children's on-task behaviors.

The Effect of Background Music on Children's Attentive Behaviors

Attention is one of the most significant and basic skills in people's academic, social, and communication development, as well as other important areas in their daily life (Gfeller & Thaut, 1999). According to Madsen and Madsen's Student On-Task Observation Form (1983), attentive behaviors include verbal and motor behaviors defined as rules for group participation, such as remaining seated and keeping hands to self (Cited in Robb, 2003). The abilities to pay attention and increase attention span are important, long-term processes that people continue using almost from their birth. In the developmental stages of children, even within two weeks of birth, babies pay attention to their mother's face, and as babies keep paying attention, they cognitively recognize familiar faces and respond to them by smiling (Developmental Stages, 2006). As children grow up, they have increased ability to select stimuli and attend to it. Through children's more organized ability to attend, they effectively learn and understand information (Gfeller & Thaut, 1999).

Generally, children have short attention spans and there are many resources available to help extend their ability to attend. Studies indicated that children's attention spans are not fixed and must be developed. They can focus and receive different information from tasks efficiently. The efficiency of attention and getting information can be developed (DeGaetano, 1998). According to Healy (1991), for a higher level of cortical function that is called attention span, children's brains need to be matured or developed appropriately (cited in DeGaetano, 1998). There are some researches that show that lack of brain development causes attention problems such as Attention Deficit (Hyperactivity) Disorders (ADD/ADHD). Since identification, growth in rates of children

with ADD or ADHD has become an increasingly important to continued study of attention and attentive behaviors.

not in references

According to Barkley and Tannock (1998), the frequency of ADHD is now 3% to 6% of all children, and it occurs in male approximately three times more than in females, from their childhood to adulthood (Cited in Rickson & MHealSC, 2006). As the frequency of children with ADD or ADHD has increased, many researchers have suggested treatment and guidelines for them such as medical, psychological and educational literature (American Academy of Pediatrics, 2001). To support children's increasing attentive behaviors, several researchers have indicated the positive effect of music on children with ADD or ADHD.

Some research supports the effect of music therapy interventions on children and adolescent with Attention Deficit Hyperactivity Disorder (ADHD). According to Jackson's survey (2003) of music therapists, results indicated that music therapists use various music interventions, such as music and movement, instrumental improvisation, musical play and group singing, to address different kinds of goals, including: behavioral, psychosocial and cognitive goals for children with ADHD. Additionally, many music therapists report providing both individual and group sessions for children with ADHD, with most music therapists reporting that music therapy treatment for children with ADHD showed better outcomes than other professionals', teachers' or parents' interventions. Even in treatment for adolescents with ADHD, music therapy interventions, including instructional and improvisational models, showed positive effect to reduce ADHD symptoms such as inattentive behaviors, impulsivity and hyperactivity for participants (Rickson & MHealSc, 2006).

Also, there are several researches indicated that the positive effect of music in typically developing children and children with visual impairment attentive behaviors as well. Standley and Hughes (1996) found that preschool children performed on-task behavior much more regularly during music therapy sessions. In the study, children maintained 97% of attentive behaviors during the sessions, and their high level of sustaining on-task behavior affected highly appropriate responses to the teacher's directions as well (Cited in Robb, 2003). According to Register's research (2004), the researcher examined levels of achievement in music therapy sessions versus television programs under four conditions: music and video, music only, video only and a control group. As a part of this study, the author recorded children's on- and off-task behaviors as well. The result indicated that children showed more on-task behaviors when studying under music condition experiments than in video sessions.

Likewise, in Robb's pilot study (2003), preschoolers with visual impairments showed higher scores in attentive behavior, such as staying still in place, during musical group sessions, than during activity-based group sessions. The participants sang, played musical instruments, and did movements in music-based sessions, and played games and performed interactive stories in play-based sessions. This research suggests that music therapy has a positive influence on increasing attentive behavior for children with vision loss, as well as their typically-developing peers.

The results of the studies mentioned above demonstrate that children responded to music in some positive ways, such as increasing on-task behavior or decreasing off-task behavior. The effect of music on behavioral change is shown to be connected with children's listening ability. Sims' recent research (2005), comparing the duration of

children's music listening span under directed and free conditions, indicated that, in free listening, the maximum duration of listening to music was longer than in directed listening. Furthermore, the author suggests that children have the potential to listen to music even when it is in a free condition, thus free music listening is supposed to be the significant goal for preschool education. Based on children's musical listening ability, there are several studies that showed the positive effect of background music on children's academic situations, such as writing and spelling.

Imig and Koppelman's research (1995) supported the finding that classical background music significantly enhanced 2nd grade students' writing in word count and consistency more than as compared to Jazz, popular music or no-music condition. Similarly, Rosemary's research (1998) indicated that children showed higher on-task performance during independent writing while listening to classical music. Additionally, Anderson et al demonstrated positive results for elementary school students' spelling accuracy when listening to classical music during testing. In the study, participants listened to *The Mozart Effect Music for Children (Vol. 1) Tune Up Your Mind* during their spelling activity, and the students' post-test score was higher than the pre-test scores in which no music had been used. In discussion, the researchers recommend providing classical music for children based on physiological help. The tempo of Baroque music, Vivaldi's or Mozart's music is similar to people's heart rate, and may offer a relaxed condition. Through that match, children may be provided with the best learning conditions, one that provides benefits such as high attention and relaxation (Anderson, Henke, ^{et al} ~~McLaughlin, Ripp & Tuffs~~, 2000).

Though several researchers have supported the positive effects of music as interventions and as background music on increasing children's attentive behaviors, they have thus far focused principally on examining attentive behaviors for academic goals using music applications in both music therapy interventions and as background music. Also, there is shortage of research substantiation focused on using background music to increase children's attentive behavior. The narrowed focused and lack of research in the area raises questions about the efficiency of background music in more creative activities, such as in art.

The purpose of this study is to examine the effect of background music on children's attentive behaviors during drawing activities and will compare levels of attentive behavior with and without background music.

Method

Participants

The participants (n=10) of this study were children, aged 4-6 years, who were enrolled in Korean Language School in Lawrence during the 2006-2007 school year. The participants had a class once every Saturday. The participants were from three different classrooms in a Korean Language School, and included three males and eight females. Korean was the participants' native language. The same curriculum was implemented in three classrooms over the past six months and included drawing, music, and Korean language.

Research Design

? Your abstract says 2

The period of data collection was four consecutive weeks. Each condition was conducted simultaneously for 10 minutes during the participants' drawing activity in

three classrooms. The study design consisted of an ~~ABAB~~ format. Condition A was conducted without music and condition B was examined with background music during the drawing activity.

Measures

The on and off-task behaviors of participants were measured by the Student Observation Form (Madsen & Madsen, 1983), which is commonly used to measure students' on and off-task behaviors. There were two categories in this form: on-task behavior and off-task behavior. According to the author, on-task behavior was determined by classroom rules and teacher-designated academic activities. On-task behaviors included participating in group activities, remaining in a sitting position, and responding to the teacher's questions. The off-task behaviors were recorded based on three categories; N, M, O.

The condition or designation
 N contained verbal and object noises. Verbal noises included inappropriate oral responses, such as yelling, talking, singing, or laughing. Object noises, slamming books or kicking furniture, represented any noise that result from students' off task behaviors. M divided into three sub categories: motor, gross motor, and minor motor behavior. Motor behaviors were interruptions against the classroom rules. Gross Motor behaviors included walking around the room, running, and some aggressive behaviors, such as hitting, kicking, or pushing. Minor motor behaviors contained thumb-sucking, fingernail biting, playing with learning materials, and other behaviors that were not related to the student's activity. Lastly, O stood for other behaviors apart from the above, or passive off-task behaviors, such as daydreaming and staring into space.

To ensure reliability of the observation and to record participants' on and off-task behaviors, camcorders were used in each classroom during the experiment. After each experiment two observers recorded on and off-task data on the Student Observation Form, and observers recorded data using 10-second observe and five-second record intervals. A CD-ROM that offers observing and recording cues was used at the beginning of recording the data to ensure the accuracy of duration of the interval.

Procedures

The consent forms for this study were signed by participants' parents and collected by each classroom teacher. After collecting the consent forms, the researcher consulted with classroom teachers to schedule appropriate times. Two other classroom teachers received specific instructions to videotape participants' off-task behaviors. To record off-task behaviors, video cameras were used in three classrooms. The cameras were positioned in the television cabinet, therefore the participants would not be distracted by their presence. Data were collected every Saturday from 10:30 a.m. to 10:40 a.m. during classroom time. During the first and third week of the experiment, the classroom teachers implemented drawing activities with specific experimental instructions, no reinforcement to reduce off-task behaviors, and without background music. Under the same conditions, background music was implemented only during the second and fourth week during the drawing activity. Recorded videotapes for each experiment were collected by the researcher from the three classrooms. To ensure reliability while collecting the observation data, the researcher and the other observer participated in recording on and off-task behaviors.

Materials

J. S. Bach’s Goldberg Variations, Variation No. 1 and Variation No. 14 were used as background music for the experiment. Music was selected based on the similar beats per minute (bpm) of the heart rate of children, and ranged from 90 to 110 bpm. Also, three DELL laptops were used to play music in each classroom, and three Sony Mini DV camcorders were used to record the participants’ behaviors in classrooms.

Results

Table 1 shows the result of on- and off-task behaviors performed during the drawing activity. The results indicated that the participants demonstrated more on-task behaviors during the drawing activity with background music (see Table 1).

Table 1

~~are these mean scores~~

<i>On- and off- task mean</i>	Without music	With music	Difference
+	15.6	16.7	1.1
N	9.2	7.4	-1.8
M	4.3	7.3	3.3
O	4.4	2.2	-2.2

The mean of participants’ on-task (+) behaviors increased with background music. The measurement off-task behaviors showed fewer numbers of N (making noise) and O (other) categories when drawing with background music (see Figure 1). However, the participants’ motor behaviors (M) increased under the music conditions (see Figure 2). The mean of total off-task behaviors N, M and O decreased (see Figure 3).

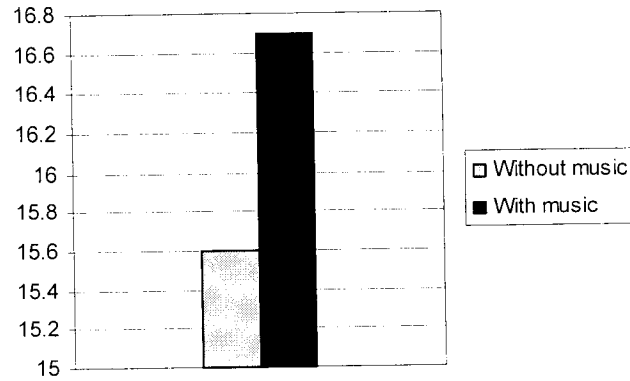


Figure 1.

Mean of on-task behavior

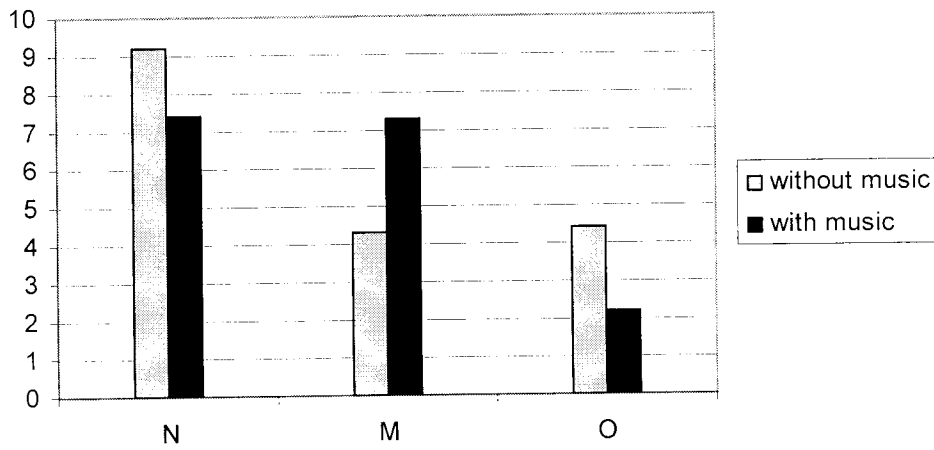


Figure 2.

Mean of off-task behavior

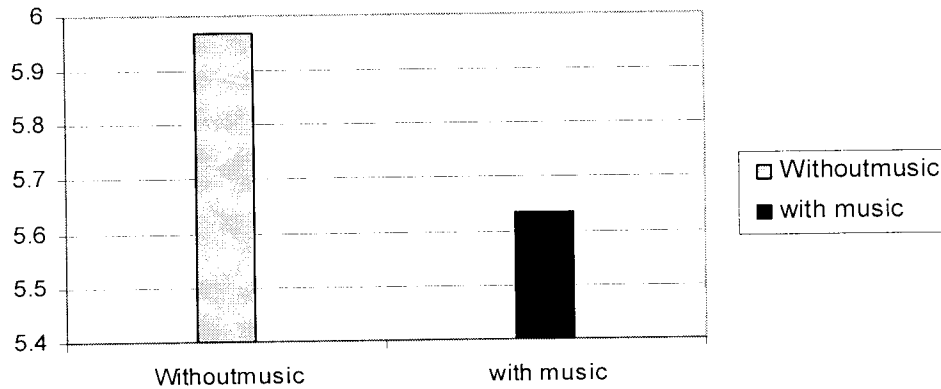


Figure 3.

Mean of total off-task behavior

Discussion

On-task behaviors increased with the music condition during the participants' drawing activity, and total off-task behaviors, including N, M and O decreased under the same conditions. The difference between ~~without~~^{no-} music and ~~with~~^{with} music conditions was not remarkable.

(However, it is interesting to note that among three classrooms, the results of two of the classrooms as to compare to one other classroom were totally opposite.)

The researchers compared only the mean of on- and off-task behaviors as a whole group to determine the overall results; however those two groups' results implied compounding variables. In two of the classrooms, participants' on-task behaviors increased, while all three off-task behaviors decreased with music. However, in the case of the other classroom, the result was ~~vice and versa~~^{the opposite}.

include breakdown by class in Results if you are going to talk about it here

A review of observation^s provided detailed explanation^s of compounding variables. Those variables included teachers' different implementation, participant mood and individual music preferences. Often, teacher's various teaching implementations and

classroom management and other things can affect children's behaviors (Register, 2004). In addition, the three teachers who participated in this study have different perspectives as to how to manage children's off-task behaviors in the classroom. Some are more generous when dealing with off-task behaviors, while others are not. Additionally, in some classrooms, teachers interacted with the children verbally during their drawing activity, while but others did not. Thus, during the experiment, in some cases, participants asked their teachers many questions, which were marked as off-task behaviors, so long as the questions were not related to their drawing. Also, participant mood state changes would affect the results of this study. For example, there was one participant whose mood appeared extremely depressed, exhibiting a larger number of O category, off-task behaviors, such as daydreaming.

The result in this study indicated background music would have two major opposite roles that affected participants' on- and off-task behaviors during their drawing activity. First, background music worked to mediate off-task behavior. While reviewing the videotape recording of the experiments, the researcher recognized that, during the music condition, some participants whispered and another participant demonstrated the gesture with while placing her finger on her lips to indicate her request for them to stop talking. However, background music also motivated participants to do motor tasks, such running, dancing and other motor behaviors as well. With the music condition, some participants jumped up and down repeatedly and ran around the classroom. Additionally, even though it was for only a few seconds, one participant danced as well. Also, with the music condition, some participants interacted with their peers more naturally, causing off-task behaviors as well.

Lack of subjects (n=10) and a small number of experiments (A/B) limits the generalization of the result to larger population. Additionally, based on few experiments conducted for this study it is difficult to generalize the results to the larger population. For the future research, the author recommends using a larger number of participants and trying to minimize other, outside variables that might affect the study's findings. Also, use different kind of musical stimuli would be suggested such as children song. Some participants might have shown more off-task behaviors because the classic music used in this study was not familiar to them. Further research modifying the experimental design based on this discussion would provide different picture of the relationship between music and children's attentive behavior.

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