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The Space Between the Notes:
The Effects of Background Music on Student Focus

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Date May 11, 2015

A handwritten signature in black ink, appearing to read "Sandra Wyner Andrew". The signature is written in a cursive style with a large initial "S".

The Space Between the Notes:
The Effects of Background Music on Student Focus
An Action Research Report
by Duna Strachan

Abstract

Student behaviors were tallied in three similar Montessori early childhood classes while children practiced social, motor and academic skills with and without background music. Teacher impressions of work period productivity were tallied along with information from teacher notes and student self-assessments. Music came from Pandora stations such as “Relaxation Radio” or “Yoga Radio.” Music was selected for slow tempo (approximately 60 beats per minute or the rate of the adult heart) and relaxing instrumental quality, played at a soft volume and during times when students were not expected to pay attention to other auditory input such as stories, songs, lessons or announcements. Results showed that student smiles and productivity increased with background music, as did teacher and student assessments of productivity. Introducing appropriate background music can be a simple way to increase student focus. Further research will confirm if results are similar in classes of younger and older students and in traditional classrooms.

Keywords: background music, student focus, productivity, learning, classroom

Music influences us almost everywhere we go. The dentist's office, the shopping mall, elevators, restaurants and even theme parks use music to set a mood. Research on music in various environments has supported its positive effects on emotions and health. Yet the effect of music in the classroom is still debated. Many agree that music enhances learning. Others believe that music distracts students in the classroom. My research contrasts learning behaviors of young children in similar environments working with and without background music to determine whether or not music in the classroom setting is as inspiring as it can be in the world around us.

I observed 61 students in three early childhood classes in a private Montessori school for six weeks. I collected data for 30 minutes in each class once each week during the morning work period. Three observations in each class were done with soft, slow instrumental background music playing and three observations in each class were done with no music playing. The school uses a central music system that plays a variety of Pandora playlists so the music is the same in all classes. The music can be turned on or off in each classroom. Teachers generally keep the music turned on during work period, transitions and lunch time and turn it off during group activities and presentations. This varies by class with individual preference.

In a Montessori early childhood classroom the children spend most of the morning practicing with hands-on learning materials, making independent choices and working at their own pace. During observations I collected tallied data on learning behaviors such as, "touching material productively" or "touching material unproductively." I collected student responses on their emotional outlook, teacher

responses on their opinion of the success of the work period and teacher notes on positive and negative significant events of the work period.

Review of Literature

Humans have been making musical instruments for at least 40.000 years (Cornier, 2015). Music has been used for mood regulation purposes since at least the time of the ancient Greeks (Garrido & Davidson, 2013). Many studies documented the positive effect of music on mood and health. Hendon and Bohon (2008) found that music therapy increased the number of smiles in hospitalized children. They compared music therapy with play therapy and found that children appeared to enjoy the music therapy more, as demonstrated by the smiles elicited. Burrai, Micheluzzi and Bugani (2014) exposed cancer patients to live saxophone music and found that the music improved the mood and oxygen saturation of the patients. They recommended the use of live music in oncology care.

Studies have also questioned whether or not music increases productivity in the work place. For instance, researchers noted that music affects human behavior and so they exposed factory workers to various types of music. They determined that the type of music used can affect concentration. Music that is either strongly liked or disliked can become a distraction to performance (Huang & Shih, 2011).

While the use of music in health care and in the work place can be useful in improving outcomes, the success of music in classrooms has mixed reports. Jancke and Sandmann (2010) stated, "Whether background music influences performance in various tasks is a long-standing issue that has not yet been adequately addressed" (p. 2). They went on to examine studies on the effect of background music on the performing of

academic tasks, with mixed findings. Most of the studies they included showed that background music negatively influenced the academic task. Conversely, other researchers found positive effects in adding background music to a learning environment. Davies (2000) reviewed the literature on the varied use of music in elementary classrooms and concluded that children were productive and less stressed when background music was played in the classroom. If the use of music in health and the work environments is generally accepted as useful, how is it that the same techniques in learning environments have split results?

In a Montessori classroom the teacher's goal is to provide a space of beauty and inspiration (Montessori, 1917). Montessori did not specify the use of music in the classroom, probably because recorded music was not easily accessible in the early part of the 20th century when she was designing schools. But Seldin and Epstein (2006) describe a typical Montessori classroom as, "...bright, warm, and inviting, with an abundance of plants, animals, art, music and books" (p. 33). Finding a clear answer to the question of whether or not background music supports or distracts learning would help all teachers to prepare environments for the optimal use of their students. This review of the literature will examine background music in the classroom, contrasting studies claiming negative and positive effects.

The Effects of Music on Learning

Negative effects of music on learning. Several researchers concluded that music is distracting in a learning environment. Both of the following studies seem to indicate that fast, loud music is a disruption to the learner's concentration. In 2009 Dartt conducted research involving 43 preschool aged children who worked with toys, such as

blocks, in a room adjacent to their classroom for five minutes at a time while Mozart's "Sonata for Two Pianos in D Major" was played. Dartt was seated at the table behind a video camera recording the children's facial reactions. He observed that preschool aged children paid less attention to the task when Mozart was played in the background.

However, the sonata is an energetic, fast-paced piece. A few years later Thompson, Shellenberg and Letnic (2012) examined the effects of tempo and intensity on the reading comprehension of 25 adults. They concluded that music is most likely to be disruptive when it is fast and loud. This suggests that a definition of "background music" that could be useful in a classroom might consider the characteristics of tempo and volume. If fast, loud music is disruptive, could soft, slow music help to set the mood for learning?

If the volume and tempo of the music influences learning, what about the type of music? Huang and Shih (2011) found that factory workers did best when they listened to a type of music that they neither strongly liked nor disliked. Langan and Sachs (2013) noted, "It is also necessary to emphasize that background music is intended to be heard but not actively listened to" (p. 4). This suggests that the qualities of the music must be considered so as to introduce a sound that promotes concentration and relaxation rather than attracting attention. Dolegui (2013) administered tests to 32 college students while listening to heavy metal and classical piano music, both of which varied in volume. The test was also given in silence. Performance was significantly lower when either type of music was played at a high volume. Tests scores were significantly higher when the students took the tests in silence. This would suggest that testing is best done in silence. These results suggest that there may be specific learning tasks that could be enhanced with the proper musical setting.

The positive effects of music on learning. Davies (2000) states that listening to music in the classroom engages both sides of the brain, facilitating learning. She points out that electroencephalogram tests show that music alters brain waves which makes the brain more receptive to learning. “Music in the classroom reduces stress, increases productivity, regulates energy, and creates a relaxed, supportive learning environment. Such an environment aids students in learning” (p. 150). Davies discussed using various types of music in various ways and cited an extensive list of authors who support her.

If music alters brain waves to prepare the brain for learning, the application of music could be useful in a variety of settings with learners of many ages. Hars, Herrmann, Gold, Rizzoi and Trombetti (2014) administered multitask exercises to 134 adults 65 years and up over a period of six months. These exercises were conducted to the rhythm of piano music. They found that the participants showed increased cognitive function and decreased anxiety when working to music. These researchers introduced music into the existing environment and found that it was not a distraction, but a complement to the seniors’ learning ability.

There have been several studies on college students using classical music to support their preparation time before a test. Keyhani and Shariatpanahi (2008) played 15 minutes of Mozart for 40 medical students before administering a test and found that the music improved attention and memory. Flood (2007) studied two classes of nursing students who were exposed to baroque music in the background before testing and found that they had a higher test average than the control group who was not exposed to music. These studies might indicate that not only the volume, tempo and type of music is important, but the appropriate time for music may be an important consideration.

Perhaps testing is best done in silence, but listening to music before a test sets the mood for concentration.

Another factor to consider is the mood set by the music. A few researchers suggested that students do better when working to music because of the mood. Langan and Sachs (2013) studied information retention among approximately 400 college students while working to music. They found positive correlations between background music and student comfort, confidence, and retention. Anderson, Henke, McLaughlin, Ripp and Tufts (2000) worked with several classes of elementary students and found that they were better able to retain spelling words with the use of music. The music, they concluded, enabled the students to concentrate, relax and visualize spelling words.

Appropriate conditions. The variables in these studies include sample size, age of test subjects, familiarity with music, personality type, learning activity and music type, volume, tempo and duration. Some researchers suggest that music can be used effectively under certain conditions. Rauscher, Shaw and Ky (1995) published neuropsychological research evidencing an increase in college student IQ scores after listening to a particular type of music, Mozart's Sonata K 448. This became known as "the Mozart effect" which developed into controversy when some subsequent researchers were able to replicate results and others were not. Taylor and Rowe (2012) looked at the effect of college students listening to Mozart while taking trigonometry tests. The students performed significantly better with Mozart played as background music during testing. A particular type of music, then, can be effective when used in a particular learning activity – taking trigonometry tests.

The types of tasks that are best complemented by music have had some research attention. McGovern (2000) studied 18 third-grade students in a class that had not previously used music during class time. Her aim was to find ways that music could be used throughout the day to motivate the children. She concluded that the students enjoyed the varied uses of music in the classroom but recommended keeping music off during testing. Lewis (2002) worked with 39 first-grade students using background music during reading lessons. She found that the children learned reading tasks more effectively without music, but they learned letter sounds and names more easily with the music.

The use of unfamiliar music might be considered a distraction as in the 2014 study by Jancke, Brugger, Brummer, Scherrer and Alahmadi. They used a verbal learning test with 226 adults examining vocal and instrumental musical excerpts contrasted with no background music and found that there was no effect on the resulting test scores. They concluded that the participants were able to ignore the music while testing. Their choice in using musical excerpts suggests that their use of music might have been designed as a distraction to testing rather than a layer of preparation to the learning environment.

There have been some investigations into how music affects individual personality traits such as creativity, musicality and introversion. Doyle and Furnham (2012) worked with 54 adults and found that creative individuals performed better than did non-creative individuals to carry out reading comprehension tasks with music. This adds another level of complexity to the question when considering the many individual differences in people's personalities.

Music is used in many fields as a tool for setting a specific mood. Griffin (2006) reviewed the use of music for marketing, psychology, medicine and therapy. He observed that in the field of education there has been less research on how music might be used to set the mood for absorbing information. He concluded that music can be useful in enhancing learning, but the educator needs a background in music psychology to do this effectively.

Summary. The results of these studies are as varied as the parameters involved. Perhaps trigonometry is best learned with Mozart and reading is best learned in silence. How are teachers to sort out these varying parameters? Must we sort students by personality type for the best results? Or do teachers need a degree in music psychology to use music in the classroom at all?

Most of these studies were done with adults. Presumably adults have had some experience with music and may have a preconceived notion that it is conducive to a learning environment. How might results vary if the tests are more consistently conducted with children who have not had as much experience with different types of music? Focusing on children's reactions to music may help to eliminate some of variables involved in this research.

The studies reviewed suggest that keeping the parameters consistent may help to determine which aspects, if any, contribute to enhanced learning. When choosing test subjects parameters that should be considered include: age, personality, sample size and familiarity with music in the learning environment. Working with young children may help to gain a more basic picture of how music affects learning since children's experience with music has been smaller and this affords a cleaner canvas. They do not yet

have some of the predispositions to different types of music that accumulate as people mature. Keeping in mind that different types of music may affect each child differently could help in planning future research. Sample size should be as large as possible and consistent between groups tested. In addition, the music introduced should be used as a complement to the environment rather than as an intrusion.

Qualities of music to keep in mind include type, tempo, volume, duration and timing - making sure that the music does not compete with testing, lectures or reading aloud. The right music used at the right time in a classroom should not interfere with learning, but it might inspire learning. A teacher might not need a degree in music psychology to understand this, but knowing a few guidelines could help.

An examination of the effects of background music on student focus while keeping the described parameters consistent could help to determine whether or not background music is a useful tool in education. How does background music affect student focus on cognitive tasks in an early childhood classroom? In working with children we need to consider not only what we are teaching them, but how we are teaching it. Claude DeBussy (as cited in Koomy, 2001) described music as the space between the notes. A teacher tunes a lesson like a musician tunes an instrument – to fully appreciate that space.

Methodology

Data was collected over a six week period beginning in January and ending in March from three early childhood classes in a private Montessori school in Park City, Utah. The classes included 61 children three to six years old.

The children in this school have had daily exposure to music since they began at the school. At this point in the school curriculum the children were familiar with a variety of background music played during class time. Those who had been in the school for a year or more were familiar with instruments, composers and cultural music. Those in their first year at the school have been exposed to a variety of background music and rhythm instruments. The oldest students have had lessons on the instruments of the orchestra, notes, reading music and some have had piano lessons. Teachers report that those who have been in the school two or more years can often identify the composers that they have studied and sometimes even the pieces of music that they hear, such as the piece from *The Nutcracker* when the Christmas tree is growing, or the burro ride from *The Grand Canyon Suite*. These students may be more or less attuned to music than children of another school. They have been habituated to the presence of music during the school day.

A Montessori classroom is often designed as a sanctuary for learning where interruptions are avoided to allow the children consistent time for learning, facilitating focus and concentration. With this in mind this research project was outlined so as to be minimally invasive to the daily classroom routine. Since observers are common in each class and since music is sometimes played and sometimes not played in each class the conditions of the study did not alter the daily routine other than the administration of questionnaires to students and teacher. The questionnaires were constructed to be simple and quickly answered to cause minimal distraction. This plan was presented to teachers involved and followed up with active consent forms Teachers signed and returned the consent forms in early January.

Assent forms were sent to the parents of the children involved and several responded with enthusiasm about the idea. No parents opted out of the study.

Classes began at 8:30 each morning. Observations were made for 30 minute periods mid-morning, generally between 9:30 and 10:30 am, when children practiced lessons with didactic learning materials. Observations took place at least an hour after class began to allow time for the class to settle into the daily routine and to avoid the period known as “false fatigue” which traditionally happens in a Montessori classroom one hour after class begins and children move from one period of concentration to the next.

Focused and non-focused behaviors were tallied during these observations (Appendix A). Focused behaviors included “looking at work,” “touching work productively” and “completed work cycle.” Unfocused behaviors included “looking around room”, “touching work unproductively” and “wandering or fidgeting.” These behaviors were tallied periodically over the 30 minute observation without duplicating observations. So, for instance, if a child sat looking around the room for 10 minutes then worked intently on a puzzle for 10 minutes, “looking around the room” was tallied once and “touching work productively” was tallied once. If a group of three children chatted among themselves “talking to neighbor” was tallied three times and not again until the conversation had ceased for a time and then started up again or until the group members had changed.

Following each observation students answered the question, “How do you feel today?” Children chose from four emoticons representing the options “happy”, “neutral”, “sad” or “mad” (Appendix B). Responses were tallied on the observation form

(Appendix A). The children came to anticipate this question and often volunteered their emotional state without being asked. Children occasionally reported an emotion contrary to their affect. However, having observed the class for the previous 30 minutes their true emotional state was clear as demonstrated in their expressions and interactions with others. The true state was recorded.

Teachers answered simple questionnaires reflecting their feelings about the morning's work period (Appendix C). They were able to fill these out quickly on the spot, capturing their immediate reaction to the morning's success. Since all of the questions offered "a" as the most positive response and "d" as most negative response, the letters of the answers were tallied to reflect a general summary on the success of the class period. These responses were tallied on the observation form (Appendix A).

Teacher notes were reviewed for indications of the morning's productivity such as new lessons introduced, lessons mastered or behavior issues. These were tallied on the observation form (Appendix A). Generally, during a class period that flowed smoothly the teacher was more apt to have given new lessons and noted mastered exercises. During more turbulent class periods there were fewer notes of any kind except for notes about behavior. Since both of these occurrences was uncommon, less data was collected from teacher notes. For instance, during a class period a teacher is likely to give a handful of lessons, note one or two mastered lessons and note one behavior issue. So the quantity of data collected through teacher notes was sparse.

Half of these observations were done with background music and half were done without it. The school uses music played throughout the building from services such as Pandora and Spotify with no commercial interruptions throughout the day. The play list

for the day is chosen in the morning and teachers are able to turn the music on, off and adjust the volume in each class. Teachers can change the station as desired. Most of the play lists are consistent but occasionally an inappropriate piece pops up and then the station can be changed quickly. Teachers remind the students that if they can't hear the music they are talking too loudly. Generally, teachers turn the music on a low volume for most of the day and turn it off during group lessons when children sing songs, listen to lessons or stories and participate in games.

The music chosen is instrumental and slow paced, approximately 60 beats per minute, the same beat as the heart. Common playlists used are labeled, "relaxation station", "classical piano station" and "Tchaikovsky station." The type of music is changed to support the school curriculum, such as "Chinese flute station" during the study of Asia, or "Mozart station" during the study of composers. Music is always instrumental, low volume and slow tempo. Teacher preferences in music vary. Some make a point of keeping it on during class and some are inconsistent with music use. Teachers report that the children will ask to hear the music when it is off.

When beginning the observation period it was sometimes necessary to adjust the music by turning it on or off to meet the protocol of the study. Most often the music was found to be already playing and it had to be turned off for the "without music" observations.

Analysis of Data

Data was collected as numbers of observed behaviors, numbers of student responses, numbers of teacher responses and numbers of teacher recorded behaviors. All of these were tallied. Numbers of observed behaviors were adjusted by a factor of how

many children were present. For instance, if 20 out of 21 enrolled students were present, the class had 95% attendance. The conversion factor was found by dividing the total attendance by the percentage present ($100/95 = 1.1$). Observed behaviors were multiplied by the conversion factor to obtain a number consistent with 100% attendance. In a class of 95% attendance, 7 recorded smiles $\times 1.1 = 8$ smiles.

Figure 1 shows the numbers of smiles that were observed during nine separate classroom observations while background music played as contrasted with observations made with no music playing. Recorded smiles varied from 16.9 to 50.6 while the children worked with background music playing. When there was no music smiles ranged from 3.3 to 8.4 over a 30 minute period.

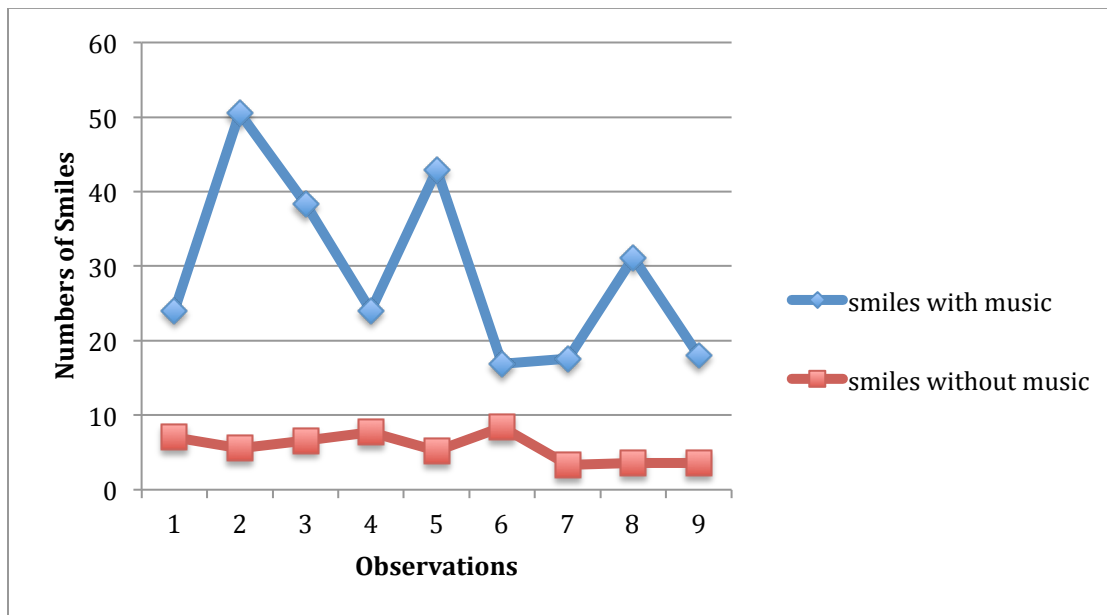


Figure 1. Number of smiles observed with and without background music.

Figure 2 shows the mean, median and mode of total observed behaviors during classroom observations. Focused behaviors, which included looking at work, touching work purposefully, completed work cycle and staring with focus are shown in blue.

Unfocused behaviors, in red, included looking around room, touching work unproductively, incomplete work cycle and staring without focus.

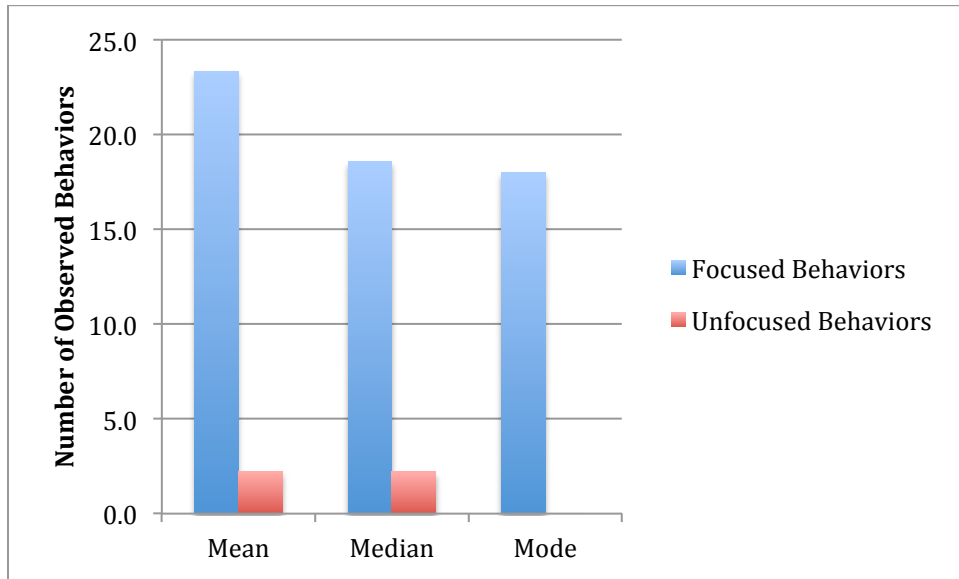


Figure 2. Total focused and unfocused behaviors observed with background music.

Figure 3 shows the mean, median and mode of total focused and unfocused behaviors without background music. Where focused behaviors averaged 23.3 occurrences/30 minute observation with background music, they averaged 9.1 occurrences/30 minutes without music.

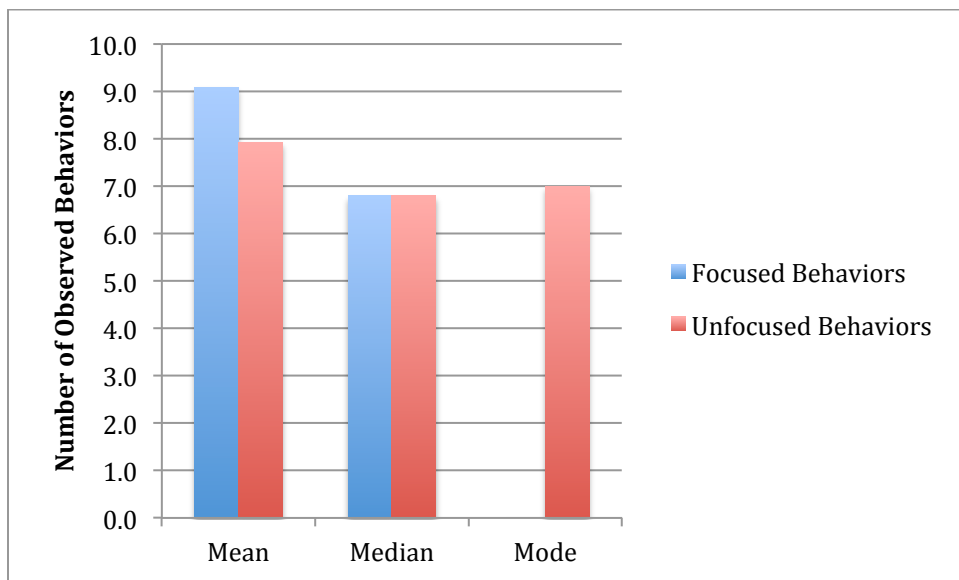


Figure 3. Total focused and unfocused behaviors without background music.

Figure 4 compares the occurrences of smiles, fidgeting and talking to a neighbor while background music played. Fidgeting included unproductive movements such as wandering around the room, swinging arms or legs, or playing with pencils.

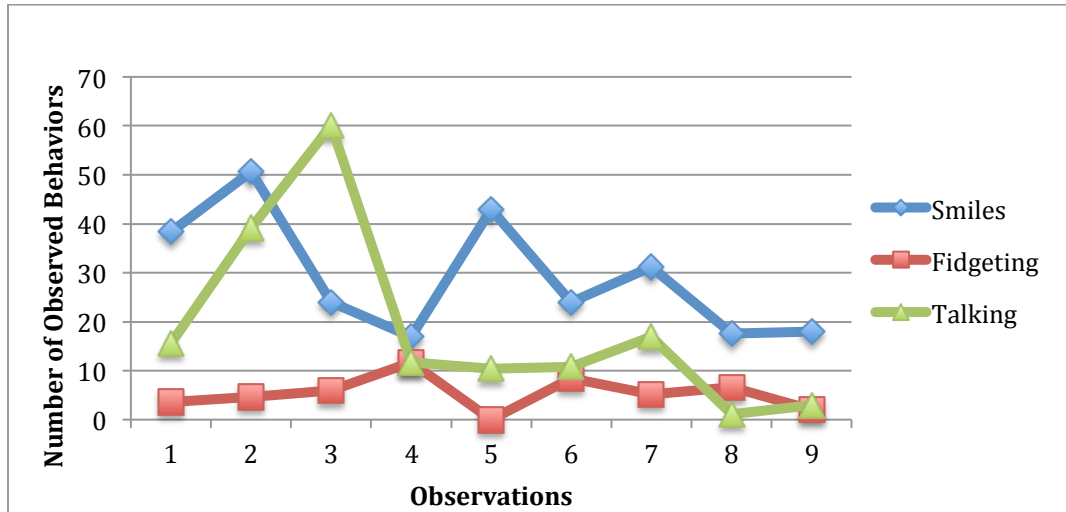


Figure 4. Compared observations of smiles, fidgeting and talking to a neighbor during class with background music.

Figure 5 Compares the same behaviors in a classroom in which there was not background music. Talking and fidgeting increased while smiles decreased.

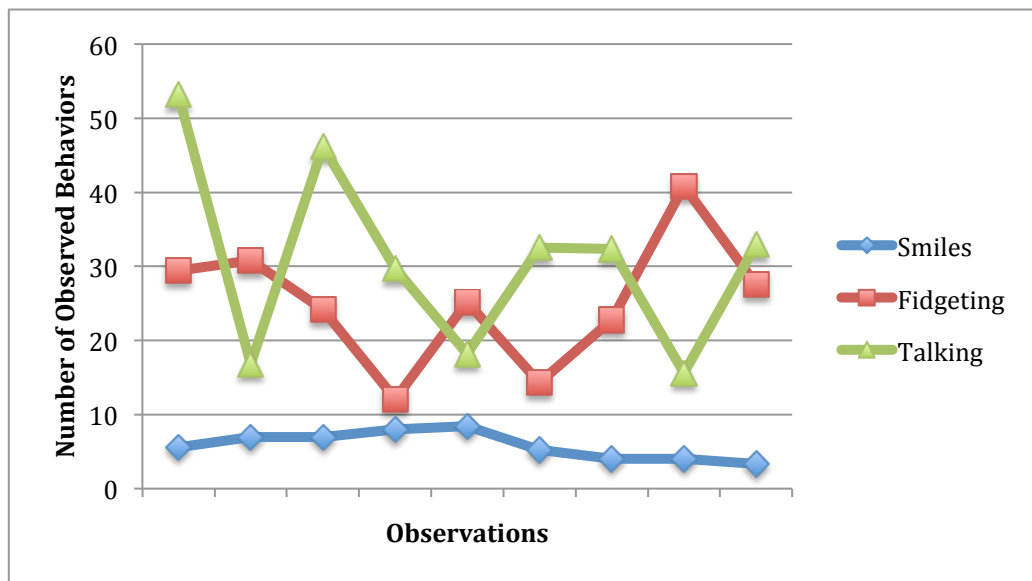


Figure 5. Compared observations of smiles, fidgeting and talking without background music.

Figure 6 illustrates the results of teacher assessments made during class periods while background music played. Responses from teacher assessments (Appendix C) were ranked from most to least productive with “a” responses relaying that the class was optimally productive, “b” responses indicating that the class was somewhat distracted, “c” responses indicating that the class was generally restless and “d” responses showing that the class was least productive.

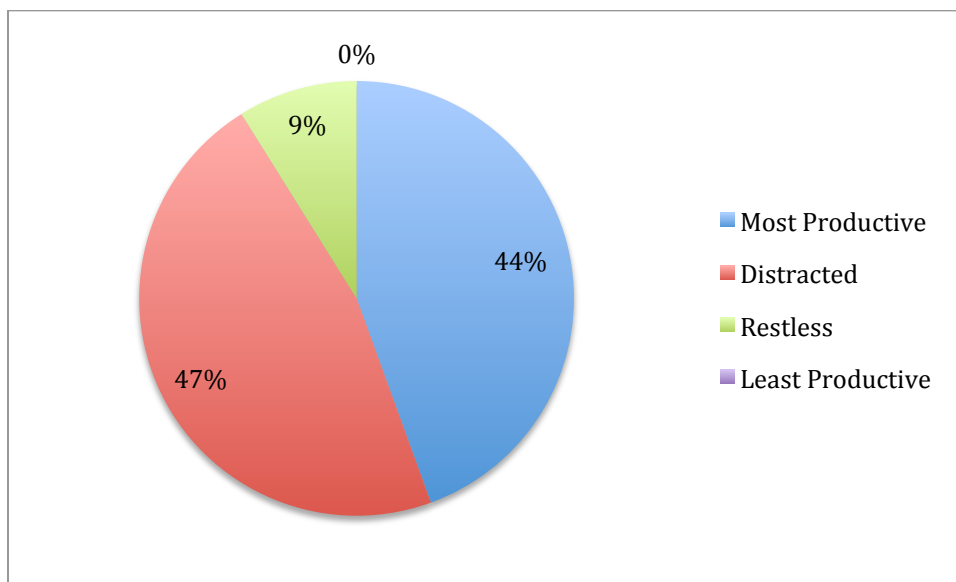


Figure 6. Teacher assessment responses reflecting student productivity during class period with music playing.

Teacher assessment of student productivity during class periods with no background music are shown in Figure 7. The most productive assessments decreased while the more distracted assessments increased. However, restlessness increased with music. No teachers assessed classes as being at least productive levels.

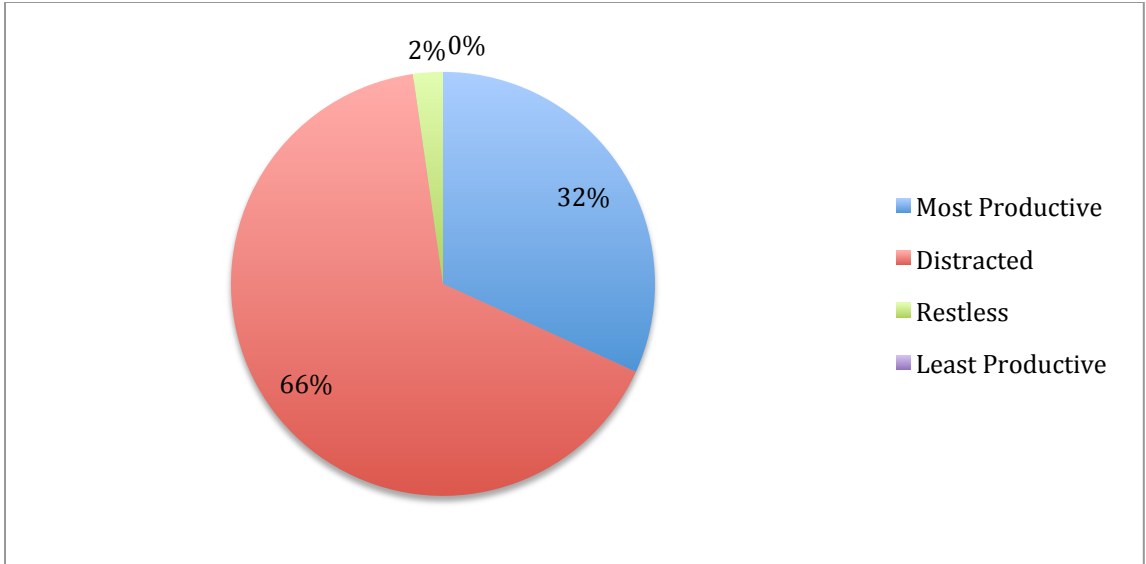


Figure 7. Teacher assessment of student productivity without background music.

Students responded to simple questionnaires assessing how they were feeling at the moment. Their responses on the days when there was background music playing in class are shown in Figure 8. A majority of the “sad” responses came on the Monday after Super Bowl Sunday when one child sobbed after another child mentioned that his team had won. A third child became drawn into the exchange during the observation time.

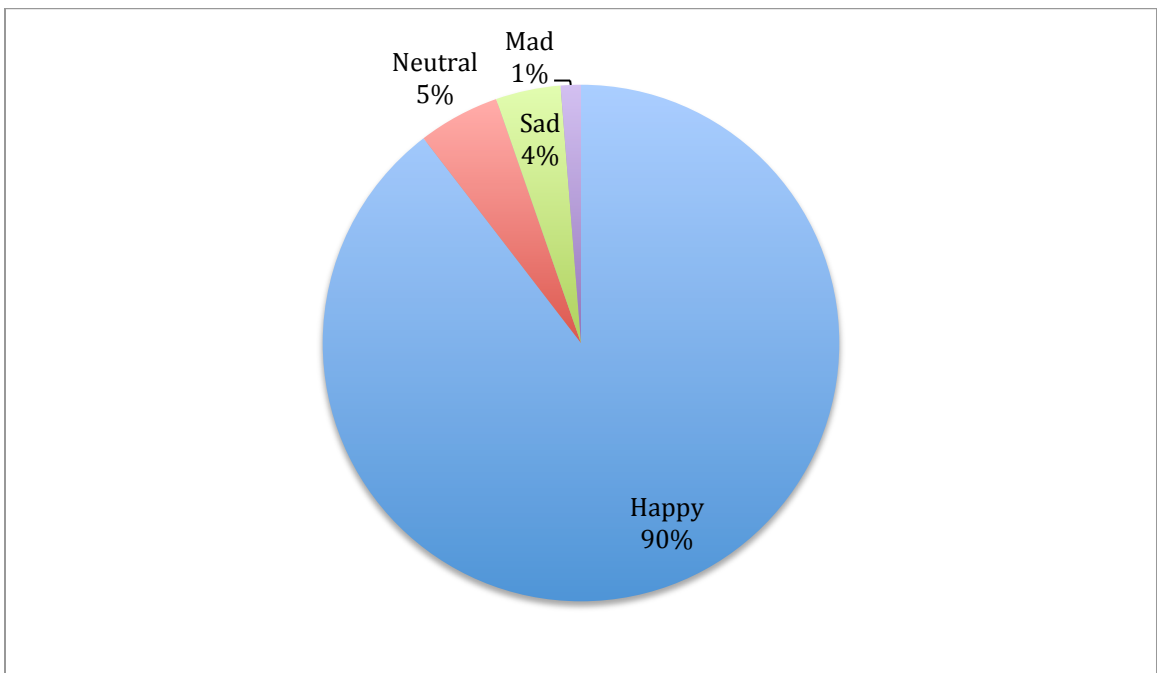


Figure 8. Student mood assessments with background music.

The same student assessments given on days when no background music played are shown in Figure 9. Happiness decreased by 20% while those who were neutral, sad or mad increased.

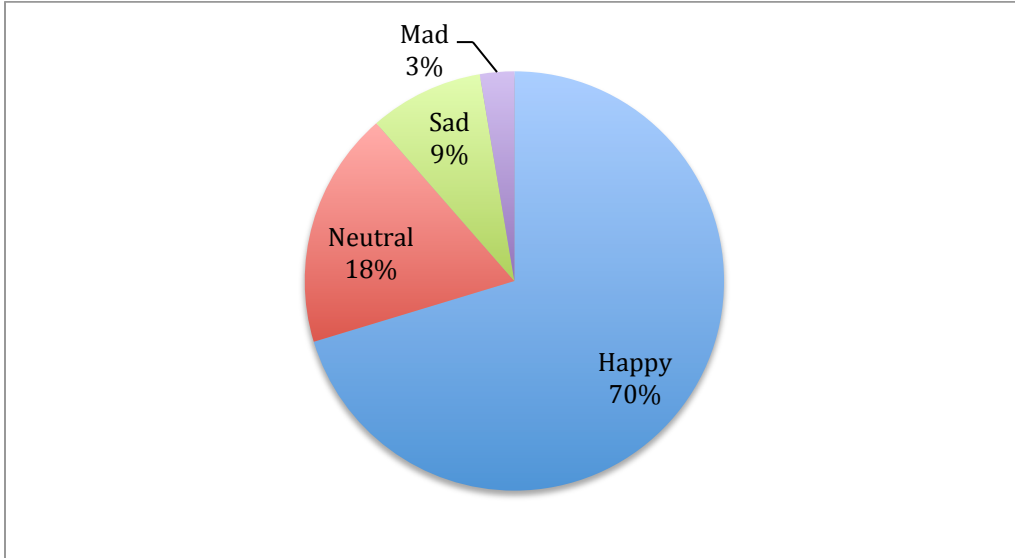


Figure 9. Student mood assessments without background music.

Teacher notes were reviewed after each observation for lessons mastered, introduced and behavior issues that arose. Figure 10 shows a comparison of classroom occurrences noted by teachers during class period with and without background music.

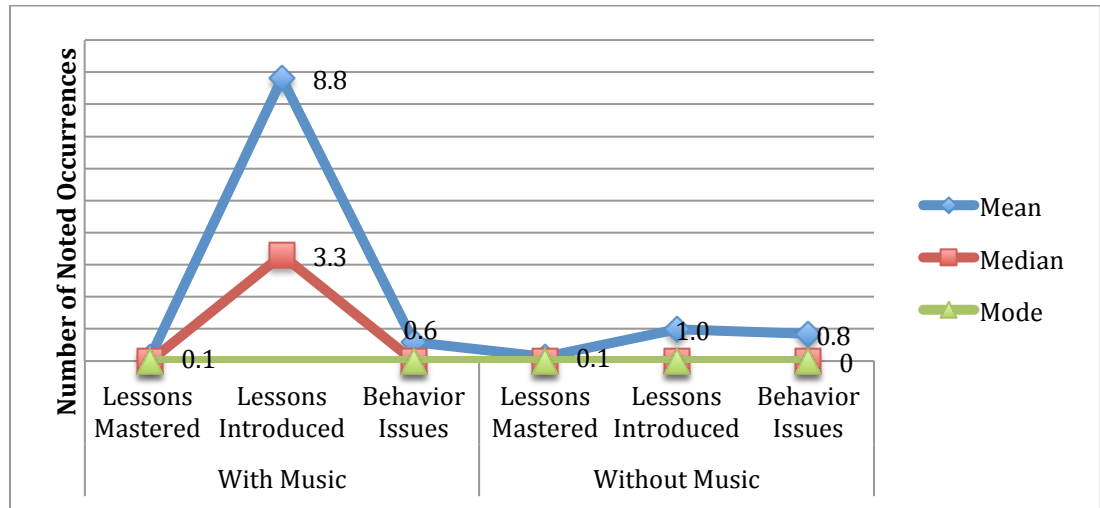


Figure 10. Comparison of teacher lesson notes with and without background music showing mean, median and mode of noted occurrences.

Conclusions

Data reflects the positive effect of background music on student focus. Observed behaviors show that early childhood students smile more, talk and fidget less and are generally more productive while working to background music. Teacher assessments and notes support this with teachers reporting generally more productive work period on the days that background music played, even though there was a 7% increase in restlessness. Student assessments also reflected increased happiness and decreased neutral, sad and mad moods on these days. Even the unfortunate effects of Super Bowl Monday did not deter this outcome.

If the results of this research are found to be applicable in other settings, teachers may consider using music in the classroom to improve student success. Parameters to consider include the type, volume and tempo of the music. The music used in this study was consistently instrumental, low volume and slow tempo. The timing of music use is another consideration. In this study music was used while children were practicing skills, during transition times, snack and lunch times. Music was not played when children were expected to pay attention to group lessons, stories or learning songs or games.

Future studies could examine the effects on different age groups by using the same type, volume and tempo of music with toddler, elementary aged children and high school or college students. This is a simple, affordable method of enhancing learning that might be applicable to all ages.

Action Plan

I have used background music as a level of preparation of the optimum learning environment since my practicum year in 1985. I have prescribed music to others as a

layer of preparation to the optimal learning environment. When I heard a child psychologist say a few years ago that people cannot learn while listening to music I began to question this practice. In reviewing the literature I noticed that some studies seemed to be designed to distract students with music. There was a lack of consistency in volume, tempo and type of music and when it was used. Sometimes the design of the study was enough to distract the student even without the music. There were variations in sample size and the timing and duration of data collection. In the studies that showed positive results, use of music was more consistent. This led me to test the parameters involved.

“Background music” is music that is not the object of attention, but something that paints a background for the setting. The type of music is important. We found that Pandora or Spotify stations such as “Relaxation Radio” or “Classical Piano” are consistent and peaceful, although, it is important to subscribe to the service so that it is not interrupted by commercials. We found that the tempo of the music should be about 60 beats per minute or close to the beat of a human heart. If listeners are tapping their feet or fingers it is probably too fast. The volume of the music is equally important. It seemed to be most supportive when it was audible, but not loud enough to call attention to itself. The timing of music should be considered according to the types of activities that occur during those times of day. Any time students are expected to listen to a story, a lecture or instructions the music should be off. When students are concentrating on testing the music should be off. When students are practicing skills, drawing, writing, practicing penmanship, spelling or math music may help them to relax and gain more from the experience.

The type, tempo, volume, time when music was used, and the age of students was consistent for the six weeks of this study. Observations were made between 9:30 and 11:00 a.m. Results showed that children and teachers felt more productive when background music was used during class. Teachers who were used to music during class time were anxious to turn it back on during “no music” observations. Those who didn’t pay so much attention to whether or not the music was on during class started to pay more attention to it. They made sure music was on during class and transitions and off during stories and lessons. On St. Patrick’s Day a lively Irish station was chosen for the day but was soon switched to calmer Celtic melodies because the children became more boisterous and more active. Once the music was changed teachers were overheard saying, “That’s better!”

Having considered the results of this study I will continue to recommend the use of music in the preparation of an optimal learning environment. Having examined the effect of music in the classroom more closely I have prescribed parameters for its use. Since Montessori students typically spend most of the morning practicing skills they have been shown, the use of background music adapts well to this educational method. In traditional schools I would recommend the use of background music when there is no lecture or testing, such as when students are practicing art, math, penmanship, spelling, creative writing, science experiments, transitions and lunch. While students are reading I would turn music off. When students are practicing math I would try soft, slow, instrumental classical music.

Further research could be done at varying age levels and in different types of schools to verify these results. As the method is tested with older students their acquired

musical tastes may become factors in what is and is not distracting. Perhaps the parameters for appropriate classroom music must change with the age of the students.

Adding music to any classroom is a fairly simple and inexpensive prospect. Most established schools have some type of public address system that can also play music. Now that small affordable speakers are available for amplifying music from cell phones, this would be a relatively simple modification to any classroom. And as technology progresses it will likely become even simpler. But care must be taken to ensure that music quality is high so that the amplification system itself is not distracting.

Introducing music to any classroom is a relatively straightforward method of increasing educational productivity. Questions remain as to how this method will work at various levels and in various types of schools. These may be addressed with further research.

“Music can affect all of us –
calm us, animate us, comfort us, thrill us,
or serve to organize and synchronize us at work or at play.”

(Sacks, 2007, p. xii)

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Appendix A
 Observation Form:
 The Effects of Background Music on Student Focus



Class: EC1 EC2 EC3 Date: _____ Time: _____ - _____
 No. students present/absent: _____
 Teachers/subs: _____
 (Circle music parameters) Music type: Relaxation Cultural Seasonal
 Music tempo: slow (<60 bpm), medium (60bpm), fast (>60bpm)
 Music volume: soft medium loud No music

| Student Behavior | Occurrences |
|------------------------------|-------------|
| Looking at work | |
| Looking around room | |
| Touching work purposefully | |
| Touching work unproductively | |
| Completed work cycle | |
| Incomplete work cycle | |
| Asking for help | |
| Talking to neighbor | |
| Staring with focus | |
| Staring without focus | |
| Smiles | |
| Frowns/grimaces | |
| Rhythmic movement | |
| Fidgeting/wandering | |

Student Assessment:
 Happy _____ Neutral _____ Sad _____ Mad _____
 Teacher Assessment: a _____ b _____ c _____ d _____
 Teacher notes: Mastered _____ Introduced _____ Behavior issues _____

Appendix B
Student Assessment

How do you feel? (music/no music)



How do you feel? (music/no music)



How do you feel? (music/no music)



How do you feel? (music/no music)



Appendix C
Teacher Assessment



Date: _____

Circle one: Music No music

1. How would you describe this morning's work period?
 - a. productive – everyone accomplished something purposeful
 - b. moderately productive - some children were productive and some were not
 - c. challenging – many children needed more help
 - d. unmanageable – no one accomplished anything worthwhile
2. Generally, would you say the focus of the class during work period was:
 - a. sustained
 - b. moderate
 - c. inconsistent
 - d. nonexistent
3. How would you rate the mood of the class during work period?
 - a. content
 - b. distracted
 - c. restless
 - d. unruly
4. How did you enjoy today's work period?
 - a. It was a dream.
 - b. It was nice, but could have been better.
 - c. It was a little too busy.
 - d. I'm glad it's over.
5. Would you say the productivity of today's work period was:
 - a. Above average.
 - b. Average.
 - c. Below average.
 - d. What productivity?