

Background Music in the Lower Elementary Montessori Classroom

By
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Table of Contents

Acknowledgements	3
Abstract	4
Literature Review	5
Theoretical Framework	12
Research Design	18
Research Question	20
Results and Discussion	24
Limitations and Further Study	29
Conclusion	30
References	32
Appendices	36
Appendix A – IRB	36
Appendix B -Blank informed consent	37
Appendix C- instrument one- blank version	38
Appendix D –instrument two- blank version	39
Appendix E- instrument three - blank version	40
Appendix F -Survey Analysis	41
Appendix G- Observation & Anecdotal Notes	42
Appendix H – Music Played	54

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Abstract

The purpose of this study was to determine the extent to which playing background music in a Lower Elementary Montessori classroom supports purposeful engagement. This study was conducted at a public charter Montessori school in a Lower Elementary classroom in the Midwest. In this classroom, there were 21 children aged 6-9 years old. Over an eight-week period, divided into two-week intervals, three types of music were played and two weeks without background music. These music types include jazz, classical, and piano music. This was a mixed methods study with qualitative and quantitative data collected and analyzed. The data was collected from observations and through a student survey. The results of this study suggest that playing background music does support purposeful engagement in a Lower Elementary Montessori classroom. This action research study provides evidence that background music not only supports purposeful engagement, it also shows that playing background music fosters a quiet, peaceful environment for children to engage in.

Keywords: purposeful engagement, background music, Montessori, Lower Elementary

Literature Review

Background music, defined as music intended to be an unobtrusive accompaniment to an activity, has historically been played while people go shopping, eat at a restaurant, or go to sporting events. Additionally, students have been listening to music while they study or do homework for decades to support learning. Music influences emotion and can trigger happy thoughts, memories, or feelings, it has a way of uplifting, calming, or motivating people. Music can also trigger negative emotions and feelings of loneliness, sadness, or anger, it can also bring up uncomfortable memories. Therefore, music has the power to influence people, aid in memory and retention, support mental health, and more. This literature review includes research encompassing the benefits of music in the classroom, on learning, and on the brain.

Music and the Brain

Research shows that there is a considerable connection between the brain and music (Kuzmich, 2010). As people listen to music, their brains work with their bodies to create a sensorial experience via the brain stem. Research has shown that music and the mind work together to connect memories, experiences, and context. Music activates the right and left sides of the brain in addition to the limbic system which supports musical and emotional responses. Music helps students take in new knowledge and retain it since the limbic system is responsible for long-term memory (Wilkinson, 2013).

The various parts of the brain have diverse ways of connecting music to the body. According to the article, *Your Brain on Music* by the Magazine of the University of Central Florida, the temporal lobe processes auditory input, language, and words are processed in the left hemisphere while music and sounds are processed in the right hemisphere. Language is an important aspect of learning which makes the temporal lobe an integral part of the brain-music

connection. The amygdala handles emotion and activates feelings a person may have when listening to music which can activate how a student feels while they listen to music ([your-brain-on-music/](#)).

The music-brain connection creates meaningful experiences for students and aids their learning. Hayes (2009) studied how the use of melodic and rhythmic mnemonic devices supports memory and recall in elementary students in content areas. She noted that the left temporal lobe involves text recognition and both the right and left involve melodic recognition. This means that “text can cue melody and melody can cue text allowing for easier recall” (Hayes, 2009). Therefore, the brain creates meaningful connections through the use of music.

Music can be used as medicine. In medicinal ways, music can be used to support treating stress, boost the immune system response, positively affect the heart, and improve sleep patterns (Wilkinson, 2013). In the article, *Mozart Effect for Parkinson's Disease: Music as Medicine* (2020) Victorino et al. make the case for playing Mozart to people suffering from Parkinson's Disease. They say that “it might help patients to recover what the disorder takes away from them such as their ability to move faster, their happiness (and well-being), and the tune of their hearts.” Music as medicine not only includes the ability to diminish stress response, boost the immune system, and support those suffering from Parkinson's Disease, it can also contribute to regulating the heart. Wilkinson (2013), stated that “Baroque music, with its meter close to 60 beats per minute, has been shown to regulate heart rhythm and blood pressure and lower cortisol levels in the blood.” Music can also improve mood and reduce stress, depression, and anxiety.

Mozart Effect

The Mozart Effect is a term born from the Rauscher, Shaw, and Ky (1993, 1995) research study that reported temporarily increased spatial-temporal task performance in college students documented by increased IQ scores after passively listening to Mozart's sonata K.488 for 10 minutes (Taylor, Rowe 2012). An enhancement of spatial-temporal reasoning performance after listening to Mozart has been reported by many researchers (Jenkins, 2001).

In their study, Taylor, and Rowe (2012) researched the Mozart effect and mathematical connections. Their study included 128 undergraduate students in a trigonometry class. The students were studied during six major trigonometry tests. 59 students were tested in a silent room and 69 students were in a room listening to Mozart as they took their trigonometry tests. The background music played for the duration of the test. The results of their research indicate that the Mozart effect does impact learning and that students perform better while Mozart plays (Taylor, Rowe 2012).

In addition to spatial-temporal reasoning performance enhancement, the Mozart Effect can also boost mood and arousal levels. In a study conducted by Thompson, Schellenberg, and Husain (2001), the Mozart Effect was tested to see the effects it had on mood and arousal. This study included 24 undergraduate and graduate participants who were performing a modified version of the Paper Folding and Cutting subtest from Stanford-Binet intelligence test (Thompson et al., 2001). The participants listened to Mozart's Sonata for Two Pianos in D Major, K. 448 and Albinoni's Adagio in G Minor for Organ and Strings while they completed their paper folding. They also provided a global rating scale from 1-7 to determine their mood and arousal while they listened to music and silence. The results of this mood and arousal

level study display that the Mozart Effect can be explained through mood and arousal levels. The participants performed better during the test while they listened to Mozart than when they sat in silence (Thompson et al., 2001).

Music as Atmosphere

Music can be used to increase mood and set the tone for learning. A study from 2023 found that there was a correlation between learning with music, mood enhancement and engagement (Li & Hu, 2023). While listening to music can increase mood and engagement, it also influences learning. Listening to background music while studying impacts learning through the regulation of the students' emotions. Learners can use music to not only calm themselves while studying, but also to connect them to experiences and context. In the study by Li and Hu, they state that music can provide excitement, motivation, relieve stress as well as provide a sense of warmth and calm; therefore if students are listening to music while studying, they are able to make better decisions, remember more, and stay calm (Li & Hu, 2023).

Music in Schools

The history of music in the American classrooms goes back to the 1700s when there were American singing schools. Music in public schools at this time grew out of the attempts to improve singing at church. After that, in the 1830s, Lowell Mason co-founded the first school dedicated to music education in Boston, Massachusetts. He was partially inspired by Johann Heinrich Pestalozzi, Swiss educational reformer, whose influences came to America in the early 19th century. Mason found inspiration from Pestalozzi in the importance of music and the teacher-student relationship in music. Mason wrote and published a text used by himself and other teachers. This began music education in the American public schools and

soon became part of school curriculum for all ages. Since then, music has been taught and used in schools.

According to Campbellsville University, 94% of elementary schools offer instruction designated for music. Music in schools is found in designated music classes, as a learning tool, and to set up the right kind of learning environment.

Music in the classroom

Music can ignite academic enrichment within students (Gonser, 2020). Teachers can integrate music into formal lessons that they teach such as math songs or poetry writing which can engage students as they learn or review concepts. Using rhymes and songs to help students retain math facts is a way to aid the learning process for those who need something more to help them remember (Wilkinson, 2013). Incorporating music into lessons not only helps retain information, but it can extend memory and creativity (Willis, 2023). When information is learned and applied through the senses, memories are stored in multiple areas of the brain which is why putting familiar songs, tunes, and rhythms with information for students can help extend learning and memory along with creativity (Willis, 2023).

Music can spark student engagement and can provide students with academic enrichment. Research suggests that teachers can incorporate music into their daily lessons as a way of engaging students in class and to spark interest in learning. When Gonser discusses the inclusion of music in instruction in her article, “6 Smart Ways to Bring the Power of Music Into Your Classroom,” she suggests that period music can expand the experience of literature, such as playing Irving Berlin’s *Puttin’ on the Ritz* when studying novels such as *Great Gatsby* and other period classics or playing the song *Under the Sea* by Samuel Wright during a lesson about the ocean (Gonser, 2020). When students hear those musical cues, they can be put into

the right learning mindset for the upcoming topic (Willis, 2023). Furthermore, music has a way of boosting interest and brings enthusiasm to student participation in school activities (Willis, 2023).

In the classroom, playing music can promote a positive learning environment by reducing counterproductive emotions. The 2013 article, *Let There Be Music: Making a Case for Using Music in Schools to Enhance Relationships and Readiness for Learning*, researcher, motivational speaker, and educational supporter Irene Wilkinson, wrote about why music should be used in schools. She states that the right type of music can potentially reduce stress, depression, and anxiety, along with improving mood, and enhance a sense of comfort and relaxation (Wilkinson, 2013). A positive mood, a sense of comfort and calmness, and relaxation are components needed to create an ideal learning environment. This ideal learning environment creates a space for students to learn and concentrate.

Along with enhancing mood, comfort, and relaxation within the classroom, music enhances literacy skills and reading among students with learning disabilities which supports a positive learning environment (Wilkinson, 2013). In a research article by Darrow (2008), a link between music and literacy is featured. Darrow states that researchers have been working on identifying why music can aid in development of early literacy and writing skills. Some researchers theorize that pitch discrimination contributes to auditory discrimination and aural recognition of phonetic information (Darrow, 2008).

Music as a Learning Tool

Listening to background music has been a learning tool that many generations of students utilized. While the radio has been around since the mid to late 1800s, it became more advanced in the early 1900s when physicist Reginald Fessenden sent the first long-distance

voice and music over radio in 1908. The 1920-1950s, ushered in the “Golden Age of Radio” according to PBS (<https://www.pbs.org/wgbh/americanexperience/features/rescue-development-radio/>). In the middle of the Golden Age of Radio, a study was conducted and revealed that 68% of students listened to the radio while doing homework (Cantril & Allport, 1935). Students in 1935 tended to prefer jazz or classical music while studying, and jazz was chosen for more serious studying. However, at the time, there was no correlation between listening to music and improvement of school performance (Cantril & Allport, 1935). Although this study is over eighty years old, it confirms that the connection between learning and music has been an interest of researchers for quite some time.

Research has found that background music can have positive effects on focus and learning in the classroom. Trying to help students maintain focus and learn concepts can be challenging in classrooms. In her pilot research study, “The Effect of Background Music on Learning,” Savan was looking for a solution as her students struggled to stay focused for her science lessons (Savan, 1999). The study included 10 boys aged between 11-12 years old who had been identified as having special needs and both emotional and behavioral difficulties. Savan played background music five days a week before, during, and after a 40-minute science lesson. She played seven different Mozart tapes, all slightly altered versions of the same composition. Savan found that playing background music during her science lesson enhanced her students’ concentration and learning and decreased the level of activity in the 10 ADD boys she was studying. The results of this study determined that music had a positive effect on behavioral challenges and, when playing the Mozart tapes 1-4, led to 40 minutes of concentration (Savan, 1999).

Supporting focus is a challenge in early childhood. An action research study done by UW-RF graduate student Jane Barnes (2020), suggested that playing background music in an early childhood Montessori classroom can also support focus. Barnes studied her classroom of 3- to 6-year-olds and how they responded to music playing while they worked. She was observing whether background music supported focus during the Montessori work cycle. Barnes played classical and Disney instrumental music and found that both music choices aided focus in her students, but the Disney instrumental displayed more focused behaviors. This action research study proposes that playing music while students are in class has the potential to positively affect learning and focus.

Conclusion

Background music as a learning tool can provide students the opportunity to enhance their concentration skills and engagement levels. Music's effects on mood and emotion can be seen when students participate in active engagement with tasks. While listening to music and working, students can begin to reduce the stress level, and in effect calming their central nervous system. This, in turn, will create a sense of calm and happiness as they work. When a student is calm or happy, they can be more engaged in a task as they will not be distracted by stress or anxiety of working. Students can have an easier time working when their mood is good. They can create connections between content through memories and experiences as they listen to music.

Theoretical Framework

Montessori Method

Montessori educational philosophy encompasses a variety of concepts that when combined create the Montessori method. The Montessori philosophy is rooted in independence, concentration, responsibility, freedoms of the child, and more. Maria Montessori used her background as a medical doctor and her studies of other educational philosophies to create a child-centered approach to education. Montessori observed children as they worked and found that children reveal themselves through their work (Montessori, 1995, p. 276). Allowing children to have freedom with limits as they work, without interference from an adult, solidified Montessori's understanding of how children learn.

Prepared Environment

The Montessori environment is one of the main aspects of the method that supports children's learning. The environment connects the child to the materials and work that they perform. The environment is prepared by the Montessori guide to give the children what they need to be successful independently. The environment is set up to foster freedom and responsibility for the child. In her book, *The Absorbent Mind*, Montessori (1995) said, "The environment must be rich in motives which lend interest to activity and invite the child to conduct his own experiences" (Montessori, 1995 p. 92). The environment will enhance freedom, responsibility, and independence which will create a place where children can learn and develop through their own experiences, without the constant interference of an adult.

Maria Montessori saw the environment as an extension of home. The environment must be beautiful with natural light, flowers, clean tables, and beautiful materials. Keeping the

environment simple and beautiful is key in creating a home feeling. Some Montessori environments have natural light and lamps while others may have overhead lights, and others will only use natural light. Another way that the environment can be an extension of home is creating the right type of atmosphere with quiet background music. When the child walks into the room it becomes a “Children's House,” even in the Montessori Elementary classroom, the environment is for the children. The environment is prepared to assist the child to reach their full potential.

Children in Montessori take an active role not only in their work but also in the classroom. Therein, the children conduct themselves as if the classroom were their own. They clean and organize the supplies and materials, do dishes, sweep, and more. The child takes on an active role in creating an environment rich in guiding them to learn about their interests. The children have an opinion and voice in the classroom which encourages the child to create their own experiences through concentration and independence.

Setting up the right environment will benefit the child in their development of concentration. Concentration is one of the important Montessori principles. Concentration is an intent to focus on an activity. In Montessori, concentration is key to the development of the child and guides them to learn on their own. Montessori (1995) stated that “a child who concentrates is immensely happy” (Montessori, 1995, p. 272). The concentrating child holds deep attention to the work which can create normalization for the child (Montessori, 1995). The environment should be set up in a way that sparks concentration and keeps the child’s attention for as long as necessary.

In order to further prepare the environment to support the child, the guide can play background music. Music can aid in setting the tone for learning and concentration as it reduces

stress and anxiety and can boost mood. As the guide prepares the environment to support the development of the child, it is also set up to draw the children in. By playing background music, the environment can be calm and peaceful which, in turn, can reduce stress and anxiety while cultivating an atmosphere for learning and concentration and supporting the right mindset and mood for learning.

Observation

Montessori believed that we need to first know the child to educate them, and through observations, we can begin to understand children (Montessori, 1946 London Lectures). Observation is a systematic method of looking at and recording behaviors in a non-judgmental way. While observing, it is important to only state facts, provide evidence and use details in order to suspend judgment and fully understand the child. In Montessori classrooms, observation is one main tool used to assess children and recognize the needs of the child.

Children reveal themselves through work (Montessori, 1995). By observing, Montessori teachers have the opportunity to learn about the children and gain insight on the child's interest to determine what lessons should be taught next. Montessori teachers use observations to plan lessons, assess what the child knows, and study child behaviors. Through observation, the teacher can begin to fully understand the child and meet their needs. When the Montessori teacher steps back and observes, the children can work independently as if the teacher does not exist (Montessori, 1995).

Observation can also be used to support the environment. As a guide observes the environment, they begin to understand how children connect with the materials and each other. In order to prepare the best environment for the children, the guide uses observation to gain

insights on the flow of the room, where there are unnecessary distractions, high traffic areas, and what children use and do not use.

Music and Montessori

Music has been part of the classroom for many years and Montessori classrooms are no exception. Montessori started music in Children's House, with children aged three to six, as she observed that children needed an opportunity to move throughout the day. In her book, *Discovery of the Child*, (2017), Montessori said, "in model Montessori schools, musical education is cultivated in a serious way" (Montessori, 2017, p. 321). In the Children's House, one activity called Walking the Line can be used as an early form of music education and education of the whole child. Walking the Line can be used to support children with the practice of control of movement, perfect sense of balance, coordination, contrasting rhythms for coordination, and more (Montessori, 2017, p. 321). In lower elementary, Walking the Line can enhance these skills and provide children purposeful movements to calm their bodies and minds and support concentration.

Music in Children's House also includes the bells and singing songs together. The bells in Children's House aid in the development of sound for children. The bells are used to guide the child in sound recognition (Montessori, 2017, p. 326). In Lower Elementary, the children have moved away from the bells, and build community through singing together during meetings or presentations. Children are given the opportunity to learn content-specific songs or entertaining songs to sing together. The freedom within the classroom allows children to express themselves through song and create follow-up work based on music.

The elementary child seeks social belonging and knowledge; we can foster these through the power of music. According to the Johns Hopkins All Children's Hospital, research shows that

children who are involved in music can get along better with peers, learn cooperation, concentration, goal setting, and build cognitive and reasoning skills. In the Montessori environment, the children are guided to get along with peers, concentrate, set goals, and cooperate indirectly and directly through grace and courtesy lessons, modeling, and music. Music provides an opportunity for children to cooperate, have discussions around types of music, or find peace while working, which supports concentration.

When music is taught, the children are guided to explore the elements of music and how music connects us to the curriculum through the prepared environment. Music connects with history, geography, math, and language; these content areas can be connected to children through the environment. Montessori said in *The Discovery of the Child (2017)*, “his environment must be such that it can arouse in him a feeling for, and an understanding of, music” (Montessori, 2017, pp. 321). Montessori teachers must provide an environment in which the child feels that connection to the environment, curriculum, and culture. This environment will foster music appreciation, help children learn how music is made and learn valuable skills when creating their own music. According to a University of Southern California’s study done in 2016, “musical experiences in childhood can actually accelerate brain development, particularly in the areas of language acquisition and reading skills.” The Montessori curriculum emphasizes the relationships between the academic subjects and by having the tools for music making, the children are guided in their development.

In a Montessori classroom, music can be used to support engagement and concentration. In a research study conducted in 2016, researcher Rekha S Rajan found that several Montessori school directors in the Midwest believed that music focuses and engages children and that it is an

important part of children's learning. This study also found that music teaches children focus and discipline, it engages them, keeps their interest, and stimulates brain development.

Conclusion

The Montessori method provides education for children to become lifelong learners, rooted in exploration and discovery. Children can hold concentration and deep attention in the prepared environment, and are able to have a full, comprehensive education. Children take an active role in their own learning, they conduct their own experiences, and are able to create meaning from what they learn.

Background music in Montessori classrooms serve as a tool for educating the whole child. From developing balance and coordination to inspiring content specific songs, music supports the child's interest in learning. Music also benefits the Montessori environment through creating a calm atmosphere. Rajan (2010) states that "since the Montessori environment requires students to work independently with the teacher as a facilitator of their learning, the use of music for background ambience is in fact something commonly found in Montessori classrooms."

Research Design

There is a terminology specific to Montessori education that teachers, researchers, and other authors employ when referring to the materials, philosophy, and pedagogy. These Montessori terms have purpose and reasoning behind them, so it is important to understand their meaning. The following glossary offers general definitions to ensure the understanding, purpose, and interpretation of results in the research study.

Montessori Terms:

Purposeful Engagement: This term has a specific meaning in the Montessori context.

Purposeful: Montessori philosophy believes that a child's self-directed activity should serve some purpose, even if indirect. Activity with purpose is not strictly academic, but any skill that can be positive for development.

Engagement: The amount of time dedicated to learning and when students are interested in the task, even when the work is challenging.

Normalization: Children are repeatedly able to experience periods of spontaneous concentration on work they have freely chosen, they are normalized. Normalized children are happier, enthusiastic, generous, and helpful to others. Normalized children can make work choices that reflect their level of development.

Work cycle: A scheduled three-hour, uninterrupted work period where children choose independent or group work to which they become deeply engaged.

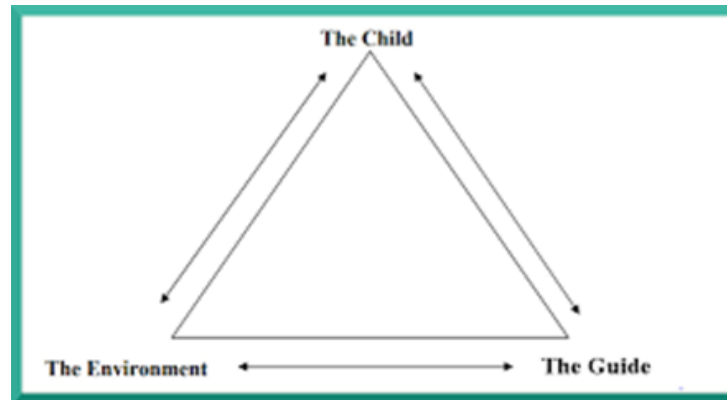
Work as a prop: When a child has a follow up work out, but is not engaging with it.

Wandering: The child is walking around the room in search of a follow up work.

Lower elementary: Children aged 6-9 in a classroom

Prepared Environment: The Montessori classroom is an environment prepared by the adult for children. The environment contains essentials for the children, no excess material or decoration. Characteristics of a Prepared Environment include order, beauty, reality, and simplicity, everything is child sized in order to enhance children's independence.

Montessori Triad: The guide, child, and prepared environment work together to cultivate a successful learning environment. The guide prepares the environment for the child, the child uses the environment to discover and learn, and the environment acts as a learning space for the children.

Figure 1*Montessori Triad*

Guide: The term “guide” refers to the trained Montessori teacher. The guide assists the children as they need it, supporting the child-centered philosophy.

Follow up work: Follow up work is a term used to describe what the children work on during the work cycle. Follow up work refers to following up after a lesson has been presented.

Age-Appropriate Follow Up: This refers to the work done by the children that is age appropriate for them. In Montessori classrooms, there are children who are 6 to 9 years old, and they have different needs and developments, so choosing work that is appropriate for them will provide them with the best learning experience.

Research Questions

Many Montessori guides at my school play background music, myself included, which inspired me to further investigate the effects it has on purposeful engagement.

Main Question

1. To what extent does background music support purposeful engagement during the Montessori Work Cycle in a Lower Elementary classroom?

Subsidiary Question(s)

2. What type of music best supports engagement during the Montessori work cycle in my classroom with this group of children?
 - Jazz music
 - Classical music
 - Piano music
 - No music
3. Is the classroom peaceful and calm while the music is being played?

Purpose

The purpose of this research is to determine whether background music supports purposeful engagement during the work cycle in my Lower Elementary Montessori classroom. This study connects together Montessori, learning, and the brain to determine whether background music supports purposeful engagement. This study was conducted by me, a Lower Elementary Montessori Guide, to determine if background music aids in the engagement of the Montessori work cycle and whether it cultivates a calming Prepared Environment. One of the Montessori Triad concepts is the Prepared Environment, so it was important to me to determine whether background music would help foster Normalization. Another main aspect of Montessori education is engagement and concentration. This study was conducted to also discover if background music supports engagement in the classroom. As a Montessori guide, I play music in my classroom to nurture a calm, peaceful environment for work engagement, however, I wanted to confirm if playing music was beneficial to my classroom.

Participants and Setting

This study was conducted in a lower elementary Montessori classroom in a school located in the upper Midwest, USA. The study was conducted during my classroom's Montessori work cycle which is in the morning on Monday, Wednesday, Thursday, Friday and the afternoon

on Tuesdays. The participants of this study were 22 students aged 6-9 years old in my classroom. During the first two weeks, one child left the school, bringing the number of children to 21. Of the 21 students in class, I collected data on 19 students. This study was conducted during the winter and spring months between January and March 2024. It began a few weeks after the students returned from Winter break and culminated the week after Spring break.

Procedure and Instruments

This action research study was conducted over an eight-week period which was broken down into two-week intervals. The first two weeks sweet jazz music was played, then, the second two weeks classical baroque music played. The third two weeks piano music was played, and finally, the last two weeks were without music (Appendix H). I chose these specific types of music through the research conducted for my literature review. Several studies have researched classical music in classroom settings and its effects on the brain, so I wanted to see how that would affect my students. I chose to include periods without music to understand and to compare the presence versus the absence of music in addition to just the effect of the types of music. The music played from Youtube and was screencast from my laptop to the classroom television monitor and played at volume 12-15/100 depending on the music. The monitor displayed a static image while the music played, such as an orchestra during classical music (Appendix H).

The design of the research mirrors the Montessori philosophy which prioritizes the role observation has on the environment. In Montessori classrooms, observation is one main tool used to assess children and recognize their needs. Observations are systematic assessments used to look at and record behaviors in a non-judgmental way. While observing, it is important to state facts and use details to suspend judgment and fully understand the child. This study was designed to be largely rooted in observations because it naturally fit into my daily routine, it

allowed me to gain an understanding of what the children were doing without interfering with their work and helped display the behaviors I was studying in a non-judgmental manner. I used a mixed-method approach for this study, gathering both quantitative and qualitative data. Data was collected using three different methods. I employed anecdotal narrative observations, a frequency engagement chart, and a multiple-choice student survey. Both the narrative observation and frequency engagement chart were completed by me, using paper and pencil. The students independently completed the survey using paper-pencil.

The participants, my students, of this study were observed during their normally scheduled three-hour work cycle while background music played or didn't play. During the work cycle, I observed using either the anecdotal narrative (Appendix C) or the engagement frequency chart (Appendix D). The anecdotal narrative observations consisted of writing down everything I saw during the work cycle. The frequency engagement chart tracked who and how many children were engaged in age-appropriate follow-up, wandering, using work as a prop, etc. while also noting the follow-up work being worked on. I printed off both observation instruments to keep in my observation binder, allowing me easy access for when it was time to observe. I observed three days a week for thirty minutes, noting every fifteen minutes the behaviors, activities, and any other notes related to what I saw. My rationale for observing for 30 minutes was motivated by authentic results of other similar studies conducted, for example, UW-RF graduate student Jane Barnes' action research on background music in Children's House.

The anecdotal narrative observations, instrument 1 (Appendix C) consisted of writing down everything I saw including, but not limited to, engagement in the Montessori materials, on-task, wandering, socializing children, who they were working with, surprises, reflections, and questions. I chose to use anecdotal narrative observations as an instrument because it allowed for

the freedom of non-judgmental views of the classroom and allowed me the space to write down anything and everything that happened.

The frequency engagement chart, instrument 2 (Appendix D), tracked how many children were engaged in age-appropriate follow-up, wandering, using work as a prop, etc. while also noting the follow-up work being worked on. This instrument was chosen to gain insight into how many children were engaged in age-appropriate, purposeful work. The frequency engagement chart also collected information regarding the materials being used and a space to write down any notes as they come up.

The other instrument used was a student survey instrument 3 (Appendix E). In Montessori environments, guides are facilitators of learning and when guides present lessons, they consider the whole child. In this study, I honored the Montessori concept of the whole child by employing a student survey that allowed the children to express how they felt about their learning and the background music. They were asked to share how they felt during the work cycle and how they felt the music helped them focus or when no music was played, did the absence of music help them stay focused. After the work cycle finished, the children cleaned up and put away their work, then we would all gather in our mid-morning meeting circle and discuss the work cycle, this typically consisted of students sharing what they worked on and presenting any posters, booklets, or other displays they made during the Work Cycle. Once this meeting was complete, I would ask the children to get a pencil, then distribute the survey to the children, for them to complete it independently and turn it in.

Music Selection

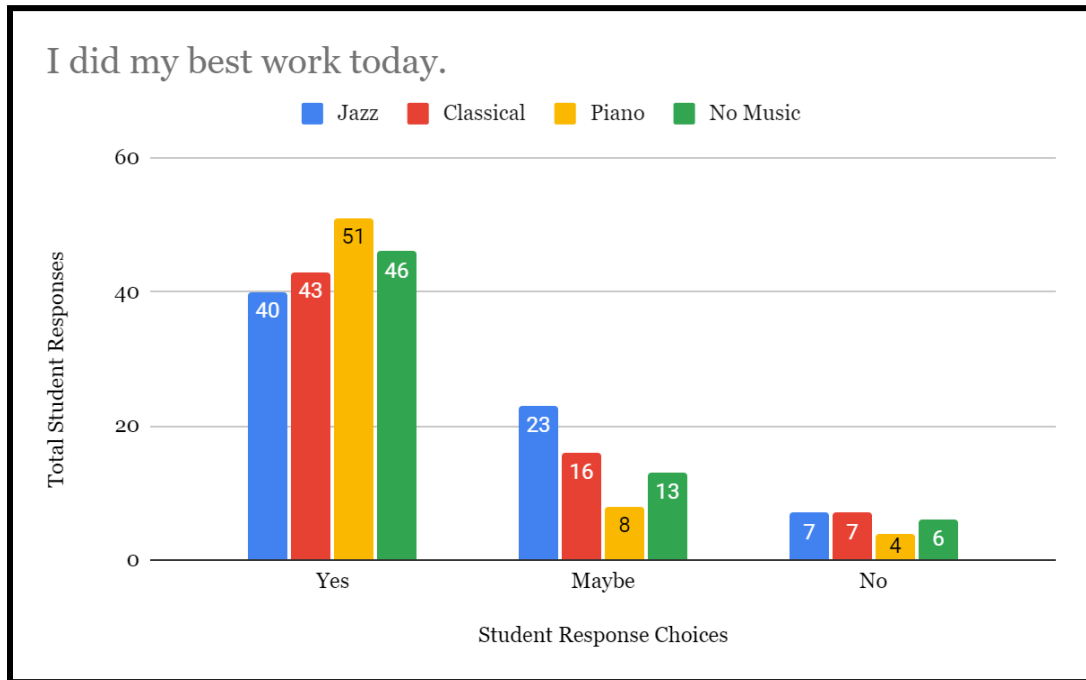
The music selected included, but is not limited to Sweet Jazz, Classical Baroque Music, Peaceful Day Piano music (Appendix H). The Exquisite Sweet Jazz by Cafe Cozy Jazz is known

to bring a sense of joy and happiness to their listeners. The upbeat rhythms can aid in providing a boost of energy and lift spirits and can also serve as stress relief. Classical Baroque Music was selected because of its potential effects on the mind and body. Classical music has been known to help aid in reducing stress and anxiety along with boosting mood. In her article, Wilkinson (2013) stated that Baroque Music, with its meter of 60 beats per minute, can reduce has been shown to regulate heart rhythm and blood pressure and lower cortisol levels in the blood. Piano music was chosen as it typically has a lower tone and pitch which can be relaxing where, in contrast, Classical music has a higher pitch to energize. I wanted to include a variety of music to determine the extent of how it affects the children.

Results and Discussion

The answer to the main question, to what extent does background music support purposeful engagement during the Montessori Work Cycle in a Lower Elementary classroom, can be answered by looking at the Figures and Tables which include the observation notes below and in the appendices. This mixed methods study has two types of results due to the types of data collected. The results of the student survey (Appendix F) and the results of the two types of observations, anecdotal and frequency engagement chart (Appendix G) are discussed below.

The raw data collected from both observation tools were analyzed, noting any patterns written down, and interpreted (Appendix G). In Figure 4, which presents the data collected from these tools, the type of music is noted and how many children were present along with the interpretation of the observation notes and frequency engagement.

Figure 2*Student Survey Question 1*

This figure shows the results of the student survey question one. According to this figure, the children felt that they did their best work while piano music was played, followed by no music, classical, and finally jazz. Evidence from my observation notes suggests that playing background music supported purposeful engagement. According to my observation notes (Appendix G), while piano music played “the room is very quiet, children are engaged” and “15 of the 20 children present are engaged in work.” The observation notes support playing piano music to aid children in their purposeful work. Although this chart reflects that not playing background music was the next highest for the children feeling they did their best work, the observation notes reflect otherwise. While jazz, classical, and piano music was playing in my classroom, I noted numerous times that the room is “peaceful, quiet, or calm” while also stating “children are engaged.” Each day had a different number of children that attended school and the

number of children engaged changed; however, there was still a higher number of engaged children while music played.

Figure 3

Student Survey Question 2

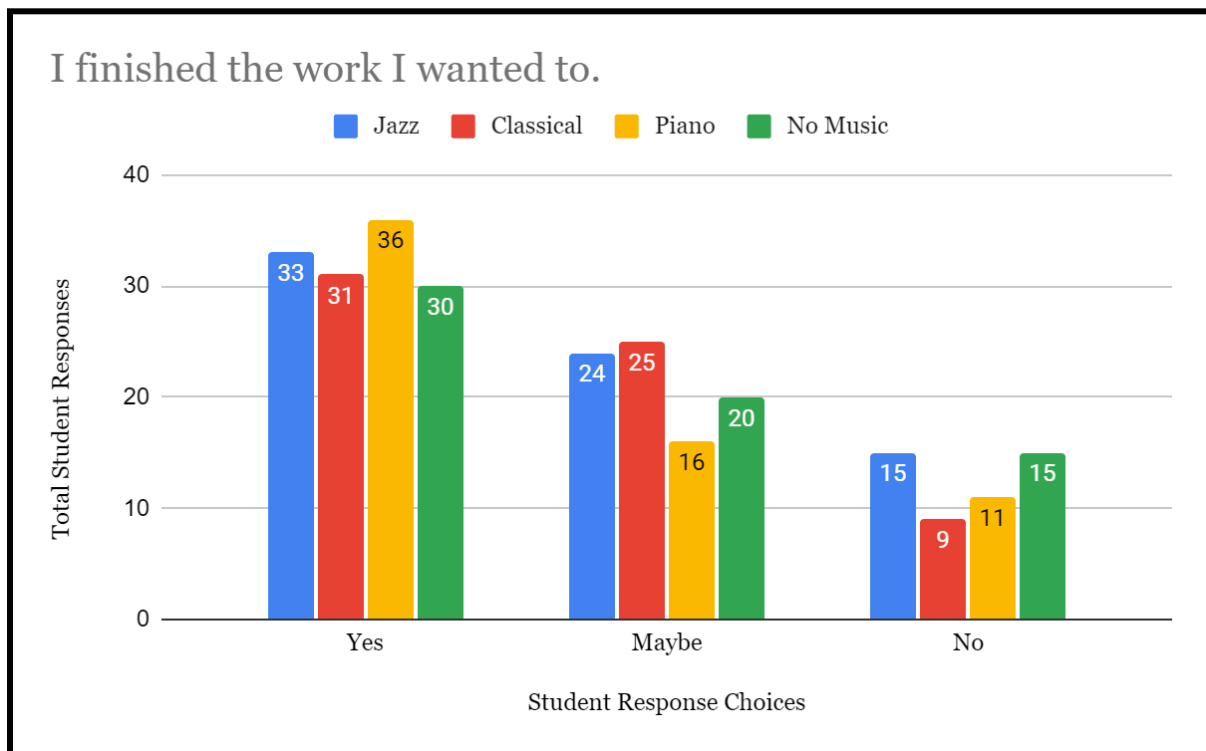


Figure 3 exhibits the results from the second student survey question, *I finished the work I wanted to do today*. Based on these results, playing piano music supported students in completing their work the most, followed by jazz, classical and finally no music. Observational notes demonstrate a parallel between work completion and engagement. As the children were working, they were engaged which led to them completing their work. Evidence from my observation notes (Appendix G) state that while piano music was playing, “15 of the 19 children present were engaged” and “the room is quiet.” My observation notes also state that while music was played, there were days when the children were peaceful and calm while they worked,

engaged, cooperative and social. One day while classical music was playing, I observed that, “the children are engaged in their work no one is using work as a prop.” That same day I also wrote “9:35am the room is very quiet and peaceful.... 10:00 still peaceful and quiet.” While piano music was played, I observed that “lots of collaboration is happening” and “the room is quiet.” The last day that jazz music was played I observed that “children are reading, most of them. The room has a quiet hum. About 17 of 19 children are engaged in purposeful work.” As children are engaged in their work, they are able to complete the work they’ve planned to do.

The student survey and the observation notes have some similarities with their results and some differences in how the students felt compared to what the observations reveal. According to the student survey, background music does support children to “do their best work” and “complete their work.” According to the observation notes, music does support purposeful engagement, especially piano and classical music as that is when the children were the most engaged in their work. The music aided in the classroom environment as it supported a calm and quiet place for children to learn. This is ideal for Montessori children in order to support their engagement and concentration which can lead to the children doing their best work and completing the work they want to do.

Figure 4

Anecdotal evidence from the observation. (Appendices C and D)

Music	Children present	Interpretation samples of each type of music played.
Jazz	19	The room is quiet and children are engaged in purposeful work. The room is quiet and about 17 of the 19 children are engaged.
Jazz	17	Quiet and/or peaceful was written twice, purposeful engagement happening. There are 10 engaged children at the beginning, then 5 and by the end most

		children are engaged in purposeful work, besides one group of three who are socializing.
Classical	15	Quiet was written down twice. The children were louder in the middle of the observation. At the beginning there are 11 children engaged and when the second graders leave at the end there are 5 engaged. There seems to be some socializing.
Classical	19	Quiet was written down four times and the children are engaged and the room is peaceful. There are 13 children engaged and 6 doing locker clean outs. When the 6 children come back from the locker clean out the room gets slightly louder but they all become engaged. 19 of 19 children were engaged.
Piano	20	There are 15 of the 20 children engaged, the room is quiet. By the end of the observation 12 of 20 are engaged. There are many Montessori materials out along with some research.
Piano	17	The room is loud but children are engaged. There are 11 of 17 children engaged. There are many Montessori materials out and it is noted that there are at least two children who are very concentrated (ancient civilization writer and division).
None	19	The majority of the time work is being used as a prop. Distraction, quiet, work as prop, loud, engagement. There is a group working with the moveable alphabet, they are currently separated and each socializing with another child.
None	19	There are 7 children engaged while the rest are not. Many distractions and work being used as a prop. The assistant has to give a voice warning due to the loud volume. Limited work, there are three children by the door, two on the floor, one in the middle of the room, and two in the art area all having conversations with no work out.

Results of weeks without background music

The third survey question was confusing for the students and did not lend itself to accurate interpretation. This will be discussed further in the limitations section. The qualitative data on the other hand provided rich information.

According to the observation notes, the children were most engaged while classical and piano music was played, followed closely by jazz which left playing no music to last. While classical music and piano music played, most children were engaged. Jazz music produced a calm, quiet environment, while classical music produced a calm, quiet environment where the children were also very engaged. The piano music produced purposeful engagement and the classroom was louder than classical music. While no music played, the classroom was louder and work was used as a prop more, more socializing was done as well. The observation notes recorded on playing no music also reflect that there were more children playing or interfering with others' work. The observation notes (Appendix G) mention that jazz music produced a calming, quiet environment which is critical in a Montessori setting. The classical also aided in the ideal Montessori environment while also having a lot of purposeful engagement (Appendix G). While the classroom was a little louder, piano music also contributed to purposeful engagement with children engaged (Appendix G).

Results

To answer my main question, to what extent does background music support purposeful engagement in my lower elementary classroom, we can look at the student survey and observation notes. The student survey results suggest that playing background music supported their work completion and doing their best work. The observation notes reflect that playing

background music supported student engagement and created a peaceful, quiet work environment.

To answer the subsidiary questions, what type of music best supports engagement during the Montessori work cycle in my classroom with this group of children, and is the classroom peaceful and calm while the music is being played, we can also look at both sets of data. For the first question, the student survey suggests that playing piano music supported engagement as the children completed their work and did their best work the most during the work cycle. The observation notes reflect that classical and piano music best supported purposeful engagement as well. The latter question can be examined through the observation notes which state that jazz and classical music supported a peaceful and calm environment.

Scenes from the classroom

Throughout the eight week observations, there were many notable sightings that were recorded. One of these notable sightings included something that rarely happens in my classroom. On 2/9/24, one of the classical music days, my assistant was conducting a locker clean out for the children. He took a few children out at a time to clean out their lockers and while this was happening I was observing. As I was observing I noted that, “at 9:35am the room is quiet and by 9:43 all children (13) are engaged in follow up work, no one is using work as a prop. 6 are doing locker clean out.” “A surprise is that as the locker clean out children return, they return to their work without any prompting..... 10:00 still peaceful and quiet.” The reason this is notable is because this is something that rarely happens in the classroom, typically my children like to visit with friends or wander when they arrive back from outside of the classroom

before they return to their work. In this observation, the children came back from their lockers and got back to work without visiting or wandering.

Another notable moment occurred while no music was playing. During the work cycle, the children were working and a second grade girl approached me and asked “can we please listen to that relaxing music?” Hearing that comment reminded me that music does impact children in a positive way and this child was positively impacted while the music was playing over the last six weeks.

During another week with no music playing, the children were notably more social and not as engaged per the observation notes (Appendix G). When the children are socializing, the classroom volume can rise to where some children have a hard time concentrating due to the loud volume. When this happens, our classroom system is to give voice reminders. These reminders are “first warning, second warning, third warning.” These warnings remind the children to use whisper or soft voices while they are working; if they get a third warning that means they need to have quiet work time for the remainder of the work cycle. A day during one week without music playing, the class had already received two warnings for their voices by the time I sat down in the observation stool to observe. The observation notes for that day stated that, “the children received a third warning for voices and needed to be quiet per the expectations of third warning.” The children received a third warning from my classroom assistant. The classroom assistant had been working with children when he got up, went over to the chime, rang the chime and gave a third warning. After this happened, the children were quiet and working alone, and many children became engaged in their work.

Below are figures 5-8 which include photos and brief descriptions of follow up work that had been completed while music was playing.

Figure 5*Chowkie work*

Figure 5 displays a photo taken during one of the weeks classical music played. This photo was taken while these two children were working. These children are very good friends and often work together on the same follow up. While I was observing one day, these children caught my attention as they were sharing a chowkie but had different materials on it. One child was practicing her spelling words while the other had taken out the entire shelf of multiplication cards and wrote them in her notebook. Occasionally these two would help each other out and quiz one another and sometimes they worked alone.

Figure 6*Stamp Game*

Figure 6 is a photo of the stamp game, a math material used to support the development of operations. The child using the stamp game is a first grader who has a difficult time choosing work. Throughout the year, this child has needed support to stay on task and choose work. While classical music was played, this child was very focused on math.

Figure 7

The Rock Cycle

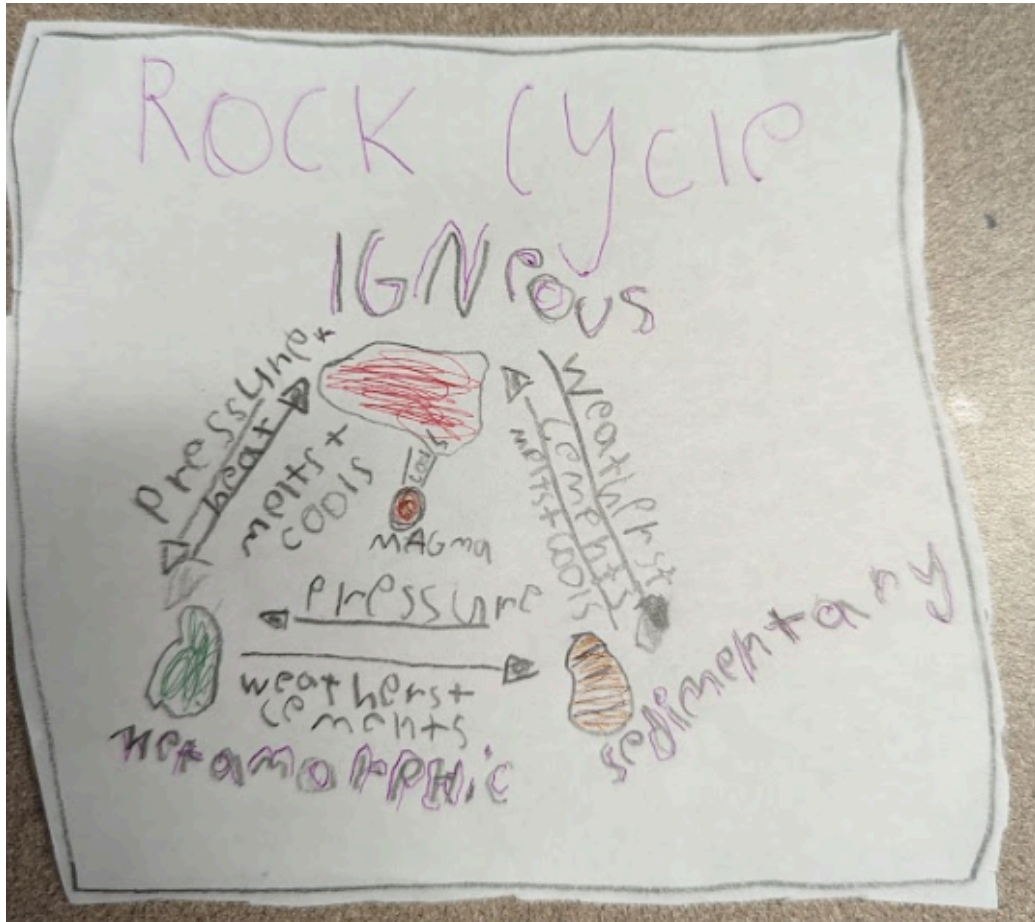


Figure 7 is a photo of follow up work completed by a second grader. This follow up work was completed while sweet jazz music was playing.

Figure 8

Work Engagement while piano music played



Figure 8 is a photo of two children working together on ancient civilizations during one of the weeks of piano music. One is a third grader who is teaching a second grader about ancient civilizations. This is significant because the third grader was engaged in her work and the second grader had shown interest in the work to which the response of the third grader was to present her a lesson on the material so they could both work on it together.

The use of music in my lower elementary classroom includes using it as a learning tool to support purposeful engagement, but also as a way to engage children in lessons. I use music to introduce new topics of study and to review topics. Typically, the use of music includes singing songs to grab the attention of the children at the beginning of lessons, however I also use it to captivate children in the middle of lessons if they lose interest. One day during the spring of

2024, I was presenting a math lesson to my group of first years and observed that before the lesson began, they were pushing each other's buttons, uninterested, and very talkative. Instead of presenting a spoken math lesson as I had planned, I sang the lesson. As I started to sing about greater than and less than signs as alligators, the children began to wind down and soon all attention was on the lesson. As the lesson came to a close, several of the children wanted to work on the follow up right away as they had been so captivated.

Limitations and Further Study

As this study was in progress, I noticed some limitations that should have been considered and could be considered in future studies. The first was the student survey. In the beginning of the study the student survey (Appendix E) was not introduced carefully enough for the children to understand. It was introduced without much background and explanation on the verbiage used. This is also the first time many of them have taken a survey; therefore there were many questions from the children. The survey was limited due to the timing and execution of the completion. It could have been done by possibly interviewing students or having the environment set up differently to support its importance. The children completed it right before recess, so many of the students wanted to get outside instead of completing the survey and therefore, the completion felt rushed, and accuracy likely compromised. Some of the questions could have been rephrased to be more developmentally appropriate. The last question in the student survey, "the music helped me stay focused" should have been rephrased and explained to the children as there were many questions regarding what "focused" meant. Instead of asking the question "the music helped me stay focused" or "playing no music helped me stay focused," asking a question similar to "playing background music helped me stay on task." In my

classroom we talk about what being on task means, so this is verbiage they would already know. In the future, presenting what the survey is, how to fill it out, create an easier question regarding engagement, and find a new way to have the children fill it out instead of right before recess.

Another limitation in my study came from how data collection was set up. As I began to collect and analyze data, I found that the student survey and observation notes did not correlate as well as I had hoped. The student survey questions were looking for student feelings as the observations were looking for engagement. If this study were done again, I would have created tools that generated data that could be directly compared against each other.

I found myself using one observation tool more than the other. The frequency engagement chart (Appendix D) was used more as it also had both tally marks and a space to write down anecdotal notes so the actual anecdotal notes tool (Appendix C) seemed redundant. I used the frequency engagement chart more often as it had a space to write down how many children were engaged in addition to the anecdotal notes. While using the frequency engagement chart, I noticed there were times when children were engaged in age-appropriate follow up and shared engagement but having to mark them down in *either* “shared engagement” or “age-appropriate follow up” was not helpful as they were doing both. In the future I would likely use the Montessori Assessment Playbook tool, which is similar to the tool I created, but has more concise categories.

In the future, I would pilot my instruments to ensure they are used the way I want them to be. With the limitations of each instrument, I feel strongly that instruments must be tested to provide not only accurate results, like the student survey question three, but to also use each instrument to its fullest potential.

Something I considered briefly was if the music would be overwhelming for some children. For some children, playing music or having constant auditory input can be overwhelming. While conducting my study I found that only one to two children in my classroom asked for headphones during the weeks of music and the weeks without music. I occasionally would hear from students that “people are talking too loud” or “It’s too loud, can I wear headphones.” There were no comments directed at the music, however taking into consideration that some children do get overwhelmed with auditory input would be something to further look into for a future study. A further study regarding music would be to use a walkman or something similar for individual students and conduct a case study rather than a whole class study. Another further study of music would be music and its effects on engagement, one could consider the use of music therapy and other therapeutic sounds that include using audio therapy. There are various cultures that include sounds such as singing bowls as part of rituals and therapy which would be an interesting study in itself.

Lastly, are my own personal feelings regarding the study. I discovered that when there was no music played, the room felt louder and dysregulated whereas when music was playing, it felt more calm and peaceful. I felt that my classroom atmosphere was overall more calm and productive while classical music played over the other types of music.

Conclusion

This action research study provided various results. After a thorough analysis of the data collected, playing background music supports engagement in purposeful work. The qualitative data collected via observation highlights the engagement levels while music played and didn’t play showing that background music supports engagement in purposeful work. The quantitative data collected from the student survey concludes that background music supported students in

completing their work and doing their best work. The observation notes display that music did help children engage and be focused.

To provide the ideal Montessori environment, playing background music supports engagement levels and work completion. Background music also supports the calm, quiet environment that aids in concentration and engagement. In this study, piano music was found to produce the highest number of engagement tally's along with the students completing work and doing their best.

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Appendices

Appendix A

IRB

IRB: FY2023-164

Appendix B

Informed consent form



Teacher Education – Montessori Graduate Programs MSE & EdD
255 WEB | P: 715-425-4283 | E: kateri.carver@uwrf.edu

Informed Consent for Research Participation

IRB # FY2023-164
IRB Approval Date: December 22, 2023

Study Title: Background Music in the Lower Elementary Montessori Classroom

Researcher Names	Department	Contact Information
1. Leah Barrett	TED	Leah.Pasiuk@my.uwrf.edu
2. Kateri Carver		Kateri.Carver@UWRF.edu

We are asking you to participate in our research study. Participating is voluntary and your child may stop at any time, including skipping any questions your child does not want to answer for any reason. If your child chooses not to participate or stop participating, or skip any questions, there will be no negative consequences to your child. Participating or not participating will not change anything about your relationship with the researchers or our school.

Overview of the Research

Purpose of the Study	The purpose of this research is to determine the extent to which background music supports purposeful engagement during the work cycle in lower elementary Montessori children. Music is an important part of Montessori in addition to its many benefits to the mind/brain. This study will connect Montessori, learning, and the brain together.
What the children will be asked to do	The children will be asked to participate in their normal work cycle as the researcher observes. After the work cycle is complete, the children will be asked to fill out a rating scale of how they felt their work cycle went, how they feel they did on completing work, and if they are feeling calm, energized or overwhelmed.
Amount of time it will take you to participate	8 weeks between Mid- January to Mid- March.
Risks to your children if you choose to participate	Minimal risk: Feeling uneasy or overwhelmed by the background music.
What we will do to reduce the risks	To reduce risks, the researcher will offer noise cancelling headphones to children who require them and/or will provide a quiet space for the children to work in without music.
Benefits to your child if you choose to participate	Potential benefits from this study include a calming work environment, heightened engagement in work, and sustained



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	concentration/focus for longer periods of time while engaging in work. Other potential benefits may include an appreciation for music and different types of music and a new interest in music. Participants may also benefit from reflection on how their work cycle went through the work cycle rating scale.
--	---

Confidentiality and Data Protection

Who will see my child's answers/information?	Only the researcher will see information.
Where will my child's answers/ information be stored?	The information will be stored in a binder at the researcher's home.
How will my child's answers /information be protected?	Information is protected in a private binder in the researcher's home and will be shredded after the study has been completed.

Protection of Human Research Subjects

If I have questions about this research, I should contact:	Leah Barrett – Leah.Pasiuk@my.uwrf.edu Kateri Carver – Kateri.Carver@uwrf.edu
---	---

Signatures:

- YES, I agree that my child will participate in this study and understand I may withdraw at any time and/or skip or refuse to answer any questions.
- NO, I do not want my child to participate in this study.

Printed Name of Participant(child)

Printed Name of Parent, Guardian or Legally Authorized Representative

Signature of Parent, Guardian or Legally Authorized Representative

Date

Appendix C

Instrument one: anecdotal observation notes

IRB: FY2023-164

Directions:

1. This anecdotal note form will be used during observations.
2. To fill out the top, the researcher will put who is doing the observation, the data of the observation, the setting, number of children, and the type of background music being played.
3. Observers will use the participants' first initial and designated number to code children in lieu of using names.
4. Observation is done as a tool for the Montessori guide to understand the children more. During Montessori observation, the observer sits in the observation stool with a clipboard, observation sheet, and pencil taking notes while the children work. The observer is not to be interrupted by anyone, children and adults alike, until they have completed their observation.
5. While completing this observation, the researcher will sit on the observation stool and take notes of how/what the children are engaging, how the room is, what materials and follow up is being done and any other notes the researcher feels need to be recorded. Additional notes may include questions and/or surprises while observing and a reflection on what was observed.
6. Once the researcher has completed the observation, the anecdotal notes sheet will be placed in a file folder for the researcher to keep confidential.

Anecdotal Notes	
Observer:	
Date:	
Setting	
Number of Children	
Type of Music:	
Notes: What materials are being used, where are they working, with whom are they working with, any additional information observed.	Questions, Surprises, Reflection

Appendix D

Instrument two: frequency tally chart

IRB: FY2023-164

Directions:

1. The Frequency tally chart will be used to track how many children are engaged in purposeful work during the Montessori work cycle while background music plays.
2. The researcher will fill out the top section: observer name, data, setting, number of children, and type of music playing.
3. Observers will use the participants' first initial and designated number to code children in lieu of using names.
4. At the beginning of the observation, the researcher will note the time and how many children are engaged in work, using work as a prop, wandering, receiving help, being disruptive or interfering with work, socializing, and engaging in shared focus.
5. Once those have been marked, the researcher will note what follow up work is being done from each area of the curriculum.
6. At the halfway point of the observation, the researcher will again mark tallies for what the children are doing: note the time and how many children are engaged in work, using work as a prop, wandering, receiving help, being disruptive or interfering with work, socializing, and engaging in shared focus.
7. At the bottom of this tally sheet is an area for anecdotal notes. The researcher will take notes of how calm the environment is, questions they have, and any other information to include.

Appendix E**Instrument 3: Student Survey**

IRB: FY2023-164

Directions:

- 1) The researcher will fill out the three questions at the top: *date, child code, and type of music*”
- 2) Child code- for keeping information confidential in lieu of using names. Observers will use the participants' first initial and designated number to code children in lieu of using names.
- 3) To use this instrument, the researcher will gather children in the gathering area after the work cycle has been completed. In this setting, the gathering area is called “circle”, and each child has their own spot to sit. They should bring a pencil with them.
- 4) Once the children are in their circle, the researcher will provide children with some background information on how to fill out the survey.
 - a) “This survey will be for you to reflect or think about how you did during the work cycle today.
 - b) You can answer the questions by circling “yes” “sometimes” or “no.” “I will read each question for you, and you can answer it how you feel like you did.”
- 5) Once the information has been presented, the researcher will hand out the survey sheet to each child to have them fill it out. Read the questions aloud for children who are still learning to read.
 - a) I did my best work today. Yes Maybe No.
 - b) I finished the work I wanted to do. Yes Maybe No.
 - c) The music helped me stay focused. Yes Maybe No.

- 6) After the sheets have been filled out, the researcher will collect them, put them in a sealed envelope and the children can move on to their next activity.

Date:

Type of Music:

Answer the following questions by circling Yes, Maybe or No:

1. I did my best work today.

Yes Maybe No.

2. I finished the work I wanted to do.

Yes Maybe No.

3. The music helped me stay focused.

Yes Maybe No.

Appendix F

Summary and analysis of the student survey results raw data

I did my best work today				
	Jazz	Classical	Piano	No Music
Yes	40	43	51	46
Maybe	23	16	8	13
No	7	7	4	6
I finished the work I wanted to do				
	Jazz	Classical	Piano	No Music
Yes	33	31	36	30
Maybe	24	25	16	20
No	15	9	11	15
The music helped me stay focused				
	Jazz	Classical	Piano	No Music
Yes	20	16	18	26
Maybe	14	16	7	14
No	36	36	38	25

Appendix G

Observation notes: Anecdotal and Frequency Tally Chart

WAP= work as prop

Date	Type of Music	Anecdotal Notes	Conclusion
1/23 /24	Jazz	<p>(16 students present) Beginning at 9:45, there were 16 of 22 students in class. The room is quiet and peaceful, some children are talking but it's pretty quiet. There are 14 on task children, working on an assortment of follow up including: sign language, pin punching, blocks, transferring, finger knitting, reading, booklet making, space poser, command sentences. There is one group work, one group drawing and one group that is socializing. The children working on the command sentences hops around the room saying hello to every person in the classroom. Children work on the floor, chowkies, and tables while one child stands and works. A child is wandering- he has a rug out, but is currently wandering around. He went from a group of girls to the language area, wandering around more, but his wandering doesn't interfere with others' work. At 10:00 false fatigue sets in and the volume gets louder with some energy. 10:10 false fatigue settles and the room goes back to being calm but has a few louder conversations. The 100's board is taken out and then the 100's game. At 10:04 the room feels calm even with a few loud conversations. A child uses a work as a prop as he is playing with the geometry blocks. A child eats a snack and wanders the room observing what others are doing. REFLECTION: cooperation, cleanliness, responsibility, and understanding of expectations is seen. After opening up new practical life work, the first graders are content and on task, the room feels more peaceful.</p>	<p>The room was “quiet and peaceful.” Of the 16 children, 14 are engaged in PW at the beginning of this observation cycle, most children are on task with only a handful of children not engaged throughout the thirty minutes.</p>

<p>1/25 /24</p>	<p>Jazz</p>	<p>(17 students) 8:25 start time: the room is quiet, I can hear the music and most children are working alone or in pairs. One child lays on another child and it is unclear if they are in a group or just playing. Children have work out, but the sorting, pronouns, blocks are socializing, three children. The checkerboard, layers of the Earth, math have tos, South America biomes all of whom are engaged which is 10 children. Animals and their young are out and the child working on it has wandered away. The child working on animals and their young wanders and gets the portable CD player and her headphones and then goes to the assistant for help. The group (3) at the platform is socializing but have worked out (using work as a prop). 8:35- five children engaged in purposeful work. A child is using the geometry foam blocks as toys and is playing with another child. A child gets out art at 8:45. 8:45- the room is still quiet and peaceful, the children are divided into purposefully engaged and not. Most children are engaged in purposeful work. The group at the platform continues socializing without working. 8:55- the group at the platform still socializing, a child got out the multiplication finger chart.</p>	<p>Quiet and/or peaceful twice, purposeful engagement happening here. There are 10 engaged children at the beginning, then five and by the end most children are engaged in purposeful work, besides one group of three who are socializing.</p>
<p>1/26 /24</p>	<p>Jazz</p>	<p>(20 students) 9:05-9:35 At the beginning of the observation there are 13 children engaged in purposeful work, 2 using work as a prop, 2 receiving help and 1 child socializing while some are out of the room with specialist teachers. In the middle of the observation 15 are socializing and some are out of the room with specialist teachers during the middle of the observation when snack time starts. At the end of the observation there are 12 engaged, 2 working as prop, 2 wandering, 2 receiving help, and none socializing. A child is wandering with a friend, another child is rolling</p>	<p>During the work cycle, the children are a little loud but during snack quieter. For the most part, the children are engaged with 13 at the beginning and 12 and the end. During snack time the work stops and socializing begins, but once it's over they transition easily back to work.</p>

		<p>up her number roll. Some girls are putting away their have tos. A child reads another chapter book. Around 9:15 children eagerly wait for the snack timer to go off and when it does they go grab their snacks right away. All but two children are eating their snack. During snack, the room is much quieter and feels calm. 9:23 a child comes in from working in the hallway and follows the snack procedures. One child is wandering complaining about not finding paper. Two children read together. Materials out include speech box, number roll, math game, have tos, and checkerboard, along with puzzle maps and the timeline of humans, chapter book and practical life.</p>	
<p>1/31 /24</p>	<p>Jazz</p>	<p>(18 students) 9:25-9:55. 9:35 the room is so quiet and by 9:33 the volume has grown but it's still quiet. At the beginning there are 9 children engaged, 1 using work as a prop, 1 wandering, 1 receiving help, and 6 socializing. In the middle, 10 are engaged, 4 WAP, 2 receiving help, and 3 socializing. At the end 5 engaged, 4 WAP, 1 wandering, 1 receiving help, 1 interfering, 3 socializing. Children go to work in the hallway but return around 9:33. At 9:25 the room is so quiet you can hear the music playing. At 9:35 there is a quiet hum within the classroom. A child teaches another the checkerboard, another child teaches finger knitting, another teaches the stamp game. One child crawls on the floor. Three first graders wander together and then eventually get out the cosmic nesting boxes. 9:42 the volume is louder. Materials out include compound words, masculine and feminine nouns, command sentences, pronoun box and verb commands along with stamp game, checkerboard, number roll, triangle box, me on a map, cosmic nesting boxes, layers of the Earth, living and</p>	<p>The room begins quiet and as the time passes, 9 children are engaged while the rest are not. At the end only 5 are engaged while the rest are not. The room is quiet.</p>

		nonliving, and practical life.	
2/1/ 24	Jazz	(19 children) 8:45- Children are reading- most of them. The room has a quiet hum, some children louder than others. One child works on math (10+ 10-) but is moving slowly. A pair of children are doing command cards. One child works on blocks, one child is pin punching geometry cabinet 6. About 17 of the 19 children are engaged in purposeful work (reading or follow up). The 10+ 10- child wandered away from the work. One child looks comfortable in the book. One child has the sign language cards out and is practicing those. 9:05 The room is so quiet I can hear the music clearly. REFLECTION: new PL materials? The books are everywhere, lesson on putting books away is needed. SURPRISE: only 3-4 children talk at a time, the room is fairly quiet! 9:15- observation over and the room is still quiet.	Quiet twice and engaged in purposeful work. The room is quiet and about 17 of the 19 children are engaged.
<p>Results of Jazz: Jazz music produced a quiet environment. Children are overall not as engaged but are peaceful.</p>			
2/5/ 24	Classical	(19 students) 9:25-9:55. At 9:25 children start snack, most are eating and socializing, but also the room is very quiet. There are 13 socializing, 3 engaged, and 1 using work as a prop. In the middle, there are 12 children engaged, 3 using work as a prop, 1 wandering, 1 socializing, and two gone with specialists. At the end there are 12 engaged, 3 WAP, 4 wandering, 1 receiving help. 9:30 only one conversation is happening. 9:32 snack is over and children get back to their work, a child joins a group working on South America Biomes. More conversations happen. The five chain group figures out	The room begins social during snack time and as snack ends children get back to work. There are 12 engaged children after snack (both independent and shared) and at the end 12 again. The music is heard over the minimal conversations happening.

		<p>how to do the numbers vs laying them down . 9:40 The music is clearly heard, the room is so quiet. The materials being used include sign language, homophones, vocabulary web, command sentences, checkerboard, 5 chain, geometry cabinets and solids, South America biomes, world religions, solar system, cosmic nesting box, and phases of the moon. There are two groups having conversations. One child walks around a rug multiple times. The assistant helps a child read. A child goes to sit by a child at the platform. 9:50 the biome group puts away their work,</p>	
2/6/24	Classical	<p>(17 students) 1:00-1:30. At the beginning of the observation, 11 children are engaged, 3 WAP, 1 wander, 2 interfering. In the middle, 12 engaged, 1 WAP, 4 interfering and by the end there are 12 engaged, 3 WAP, 2 wandering, 1 interfering.</p> <p>A child gets out the dictionary- also has the phonogram sandpaper letters and fundamental needs of humans out. A child wanders saying words. 1:00 the room is quiet and most children are engaged. two children are arguing about their work, the assistant goes over asking why/what is happening and they both explain their side. Another child puts his stick in the bucket then goes and plays with a pen. A child who was working in the hallway cleaned up then talks to another child. 1:12 The music is clearly heard as the room is very quiet. A child is socializing and is interrupting others' work. A child dances in her chair when the song changes. The work out includes blends, number rolls, 10+10-, 8 chain, fundamental needs of humans, volcanoes, pin maps.</p>	<p>Quiet and engaged for the most part. The majority of children were engaged for the whole observation with a handful not engaged. The room is quiet and music can be heard in the beginning.</p>
2/7/	Classical	<p>(18 students) 9:35-10:05. At the beginning there are 15</p>	<p>At the beginning of the</p>

<p>24</p>	<p>al</p>	<p>children engaged, 1 WAP. 1 wandering. In the middle there are 8 engaged, 2 WAP 2 wandering and 3 socializing and by the end there are 9 engaged, 3 WAP, 3 wandering and 1 receiving help. A child has telling time out, but is wandering. 9:40 the volume is loud , possible false fatigue? The materials out include number roll, 6 chain, similar congruent and equivalent fractions, C1, measurement with paperclips, telling time, Fundamental needs of humans, pin maps, South America puzzle map, and world religions. 9:47 the room quiets down and by 9:50 it is quiet. two children use their bead chain as a prop instead of working.</p>	<p>observation 15 of the 18 children are engaged in their work and by the end 9 are engaged. False Fatigue sets in. During the middle and close to the end the room is quiet.</p>
<p>2/9/ 24</p>	<p>Classic al</p>	<p>(19 students)9:35-Materials: Fundamental needs of human research, subtraction, art, types of birds, phases of the moon, waseca rainbow drawers, telling time, puzzle map, multiplication facts, bob books, foam blocks, stamp game. At 9:35 the room is quiet and by 9:43 all children (13) are engaged in the above follow up work, no one is using work as a prop and 6 are doing locker clean out. Some children are in the hallway cleaning out their lockers. The classroom is surprisingly quiet at 9:42 and the music is clearly heard. The Children are engaged in their work, no one is using work as a prop... One child has done several waseca drawers in a row. Another child is giving a spelling test to another while also completing multiplication problems. 9:52 the room is still quiet and you can hear the music. 9:55 one child goes to the waseca drawers and touches all of them several times up and down and then takes one off the shelf. 9:57 Children return from the locker clean out and the room gets a little louder but they ALL go back to their work.</p>	<p>4 quiets and engaged, peaceful. There are 13 children engaged and 6 doing locker clean outs. When the 6 children come back from the locker clean out the room gets slightly louder but they all become engaged. 19 of 19 children engaged.</p>

		<p>REFLECTION #1: very quiet and peaceful at 9:35. REFLECTION#2: still peaceful and quiet at 10:00. SURPRISES: 1. A child asked for another spelling test. 2. The child working on the Fundamental needs of humans uses the table of contents in the book. 3. The locker clean out children returned to work without any prompts from anyone.</p>	
2/15/24	Classical	<p>(15 students) 8:10-8:40. At 8:10 the room has a quiet hum. At the beginning 11 children are engaged, 1 wanders and 3 socialize. In the middle 8 are engaged, 1 WAP, 1 wanders and 5 socialize and at the end the 6 second years are gone leaving 4 children engaged 3 wandering 1 receiving help. Children are in the process of setting up their work. A student walks around with the 5 chain around her neck, then puts it away. The pin map worker teaches another child the work. At 8:15 another child arrives and immediately joins the group working on singular and plural nouns. They begin to socialize. At 8:18 the volume gets louder. The materials are singular and plural nouns, blends, stamp game, fact families, 9 chain, measurement, pin map, telling time, nesting boxes, and art. 8:35 a quiet hum comes back. A pair working together grabs all the rules and lay them out on the platform and one says to the other “oh yeah, let’s measure those!”</p>	<p>Quiet x2, louder in the middle of the observation. At the beginning there are 11 children engaged and when the second graders leave at the end there are 5 engaged. There seems to be some socializing.</p>

Results of classical:
Classical music produced more engagement between jazz and classical. The room was quiet and calm during classical music as well.

2/21 /24	Piano	(19 students present) 10:00-10:30. 10:05 The room is very quiet. Children are engaged. There are 15 children engaged, 3 WAP and 1 socializing. In the middle there are 11 children engaged, 3 WAP, 1 wandering, 4 socializing and by the end there were 12 engaged, 5 WAP, 2 wandering. Lots of collaboration is happening. The group working on the strip board is playing with the materials. By 10:10 more socializing was going on and one child left her work on the floor and went to socialize. The child working on blends goes and gets headphones. There is a group of children researching catfish and the laptop dies at 10:20, then they move to start their poster. A child plays with foam blocks. The materials out include blends, spelling drawer, word webs, fact work, dynamic subtraction, subtraction stirp board, measurement, pin maps, dinosaur research, catfish research, art, booklet making.	At the beginning of the observation 15 of the 19 children were engaged and by the end 12 of 19 engaged. The room is quiet and children, however by the middle there was more socializing happening.
2/22 /24	Piano	(20 students) 8:35- 15 children work alone, 3 pairs work. Many conversations are happening-one child left their work space to go socialize about a recess game. 8:35 materials- repeated addition, South america map, C2, reading, pin punch, igneous rocks, phases of the moon, parts of a frog, stamp game, measurement, checkerboard, art. 8:40-the room is a little loud. REFLECTION: lots of animal books being read. REFLECTION: maybe I need to re-organize the room after spring break, some children are working in cramped spaces? One child is making tiny booklets. Additional materials out: pin map, speech box, telling time, ancient civilizations, vocab webs. 8:50- the child with telling time is not working, but watching what others as they type up a skit script. Pin puncher is drawing on the scraps left behind. 8:55- the room is quieter, only	15 children work alone and some work in pairs. During the end is when the room quiets down. There are many conversations and some socializing in the middle.

BACKGROUND MUSIC IN LOWER ELEMENTARY

		soft conversations and the music is clearly heard. SURPRISE: repeated addition is popular. QUESTION: introduce animal report - the kids are interested in animal research?	
2/27 /24	Piano	(19 students) 12:40-1:10. The room is quiet, only 1-2 conversations happening. There are 15 children engaged, 1 WAP, and 1 wandering while some are out of the room with specialists. One child is reading space cards, one is daydreaming, one is wandering. Another child is showing fact families to another. The work that children are engaged in is green spelling drawer, fact families, comparing numbers, division board, perimeter, geometry cabinet, angles, ancient civilizations, telling time, pin maps, rock cycle, phases of the moon.	There are 15 of the 19 children engaged, the room is quiet.
2/28 /24	Piano	(17 children) 9:35-10:05. There are many conversations and the room is very loud. There are 11 children engaged at the beginning, 3 WAP, 2 receiving help and 1 socializing. The middle there are 9 engaged, 3 WAP, 2 wandering, 1 receiving help, and 2 socializing and by the end there are 10 engaged, 5 WAP, 2 wandering 2 socializing. The ancient civilization writer is very engaged. There are two first graders drawing and most of the third graders are talking about who they have a crush on. One first grader observes two children wandering around their rug. 9:47 the music is heard, the room has quieted down. One child completes work and stays in their work space, doesn't get up to start something new or put their work away. The child working on division is very peaceful. Materials out include animals and their young, division, stamp game, types of angles, ancient civilizations, pin maps, rocks, snakes, and biomes.	The room is loud but children are engaged. There are 11 of 17 children engaged at the beginning and by the end 10 of 17 engaged. The room quiets down and gets peaceful towards the end,

<p>Results of Piano: Piano also produced engagement. The room was a little less quiet.</p>			
3/20 /24	None	<p>(17 children) 9:30-10:00. 17 children in the room. 9:31 the room went silent when the phone rang. 9:30 There are 7 on task children, 8 socializing, and 2 wandering children. The materials out include snake research diorama, fractions, 6 chain, multiplication, land and water forms, human evolution, invertebrates, 10+10-, spelling drawer, timeline of life, fraction terms, volcano study, and noun label. At 9:33 the room is quiet, there are many quiet conversations happening. The timeline of the child wanders away from the work and is over in the corner then wanders more. A group of girls stands in the corner talking, the bead chain group is playing with their materials and one of the children says “let’s focus on our work.” 9:40 a water spill occurs and children go help clean it up. 9:45 the room is loud with 5 on task 9 socializing and 3 wandering. The multiplication group is quiet and engaged. 9:50 the volcano group splits up and one goes to draw and one wanders. 10:00 7 on task children and 10 socializing. SURPRISE: popularity of fraction, the first graders are very interested in multiplication, a child goes to the calming corner, screams into a pillow, then rearranges flowers and leaves.</p>	<p>There are 7 children on task. The room is quiet in the beginning. By the middle and end the room is loud and 10 children socializing with 7 on task,</p>
3/4/ 24	None	<p>(19 students) 8:50-9:20. At the beginning there are 14 children engaged, 4 WAP, 1 receiving help. In the middle there are 5 engaged, 9 WAP, 2 receiving help, 1 interfering and 2 socializing and by the end 7 engaged 7 WAP, 3 wandering and two receiving help. There is a group working with the moveable alphabet, they are currently separated (8:55) and each socializing with another child. A</p>	<p>The majority of the time work is being used as a prop. Distraction, quiet, work as prop, loud, engagement</p>

		<p>child finishes using the bead frame and gives it to another child. 8:55 the room is quiet. Three children work near each other: multiplication board, bead frame, dot game and they have conversations while working. These three children are able to hold deep attention and engagement and then sometimes socialize. The group working on art is quiet and the number roll child is engaged in cutting. 9:06 the room gets loud and children begin to wander. 9:07 the children with the movable alphabet get back to their work and by 9:12 they've gone to socialize. A first grader played with the bead frame while someone was trying to use it. Work is used a lot. He plays with it back and forth. Materials out include: spelling drawer, singular and plural, compound words, dot game, bead frame, multiplication board, missing numbers, number roll, angles, ancient civilizations, rocks, art.</p>	
<p>3/6/ 24</p>	<p>None</p>	<p>(19 students) 10:00-10:30. At the beginning there are 7 engaged children, 4 WAP 3 wandering 2 receiving help and 4 socializing. In the middle there are 7 engaged 1 WAP, 2 wandering 1 receiving help, 1 interfering and 7 socializing and by the end 7 engaged, 4 WAP, 4 wandering, 2 interfering and 2 socializing. Many conversations and loud. Limited work, there are three children by the door, two on the floor, one in the middle of the room, and two in the art area all having conversions with no work out. 10:10 assistant gives a voice level warning. Two children complain about the noise level. 10:12 conversations continue from the group near the platform. A child in the art area cries saying "I will miss you when you go to Florida." 10:19 a child builds a marker tower. The communication timeline group is displaying cooperation</p>	<p>There are 7 children engaged while the rest are not. Many distractions and WAP. The assistant has to give a voice warning due to the loud volume.</p>

		through talking about what's on the timeline. 10:20 the cursive group is engaged. 10:25 assistant re-directs a group.	
3/21 /23	None	<p>(18 students) 9:20-9:50 18 children present, no music playing. 3 on task, 15 eating snack in the beginning. In the middle 6 on task, 6 wandering, 3 social and some out for specials. Materials: conjunction box, USA map, fractions, snake diorama, 10+10-, orange drawer, noun label, multiplication, plant kingdom*timeline of life 3 people on task, 15 socializing for snack time, 1 child in interventions.</p> <p>9:20: snack is in full swing, the room is quiet with hums of conversation while the children eat. 9:25 a child wanders the room, he goes all the way around the perimeter and now the assistant re-directs him, he ignores and continues to wander. 9:30 the room is very quiet REFLECTION: why is the room so quiet right now? The booklet making supplies are being used, the noun labeling work has left several areas of the room labeled with neon post-it notes, the 10+10- child sits down after wandering. There are three diorama workers and they've built something out of tape and paper, using sharpies and the booklet making supplies. A child eats a snack and observes another child, he wanders around then sits in the math area. 9:31 "M I am trying to actually do my work, can you please do yours?" -A student to another student. 9:40- 8 on task children, 5 wandering, 5 socializing, the volume in the room rises- a child lays on the floor. REFLECTION: the room became loud from roughly 9:35-9:45 and many conversations were happening, it looked like children were still working, however there were children wandering and also socializing- the conjunctions box, sewing, calligraphy, and</p>	<p>The children were eating snack at the beginning and by the middle more children had become engaged. The room is quiet. By the end the room is getting louder.</p>

		noun label were all on task- possibly false fatigue? 9:50- 7 on task, 7 socializing, 2 receiving help, 2 wandering.	
3/22 /23	None	(19 students) 10:00-10:30 19 children, no music. 10:00 - third warning for voice level, the room is quiet. Materials: diorama, egg pop, division, have tos, 10+10-, 5 chain, Practical life, functions of plant parts, sea turtle research, history book reading, plant kingdom. 10:00 there are 16 on task children, 2 wandering, 1 working as prop. A children is receiving help from the assistant, two children work at the platform and two children work at the lesson table, three first graders are talking and help each other spell something, three people argue over the bathroom pass and a second grader reminds them of the rules, 10:15-on task 7, socializing 6, work as prop 6. a child makes a marker sword, a child looks at the bead cabinet then talks to a peer then gets out a multiplication booklet. SURPRISE: how many children are able to follow the third warning expectation of no talking. 10:30-8 on task 2 socializing, 5 work as prop, 4 wandering.	The room is quiet after getting a third warning for voices. There are 16 children on ask, 2 wandering, 1 WAP.
<p>Results of no music: Children are less engaged and using WAP more. 3/4/24 the majority of children are using work as a prop 3/22/24 the children received a third warning for voices and needed to be quiet per the expectations of the third warning.</p>			

Appendix H

Music played

Sweet Jazz: <https://www.youtube.com/watch?v=QJNNjeyHoNY>

Exquisite Sweet Jazz



Other jazz music played:

<https://www.youtube.com/watch?v=S0zv1GMBRtE>

<https://www.youtube.com/watch?v=S0zv1GMBRtE>

<https://www.youtube.com/watch?v=S0zv1GMBRtE>

<https://www.youtube.com/watch?v=QJNNjeyHoNY>

Classical: <https://www.youtube.com/watch?v=ODdC67MsGI0>

Best Relaxing Classical Baroque Music For Studying & Learning



Other classical music played:

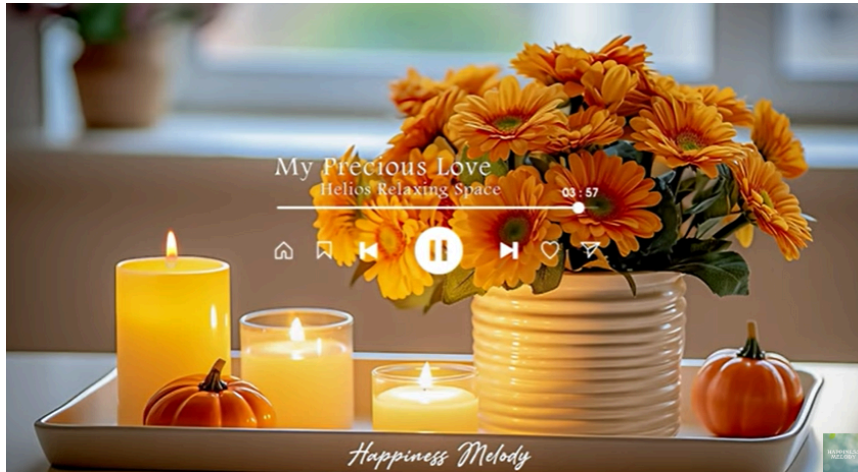
<https://www.youtube.com/watch?v=CHIEuoZrAIo>

<https://www.youtube.com/watch?v=CHIEuoZrAIo>

<https://www.youtube.com/watch?v=CHIEuoZrAIo>

Piano: <https://www.youtube.com/watch?v=VwfXti9WFG8&t=26233s>

The cold wind blowing through the piano, the beauty of winter - Peaceful Day | HAPPINESS MELODY



Other piano music played:

<https://www.youtube.com/watch?v=VwfXti9WFG8&t=26233s>