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ISM 3A

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Research Assessment 8

Work Cited:

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Throughout this week in Independent Study and Mentorship, I experienced some struggle in reaching a decision as to what topic I should conduct my eighth research assessment over. As I have already gained a great amount of knowledge based on the requirements and expectations of my field of elementary music education, as well as the effects that it, along with shame and guilt in the classroom, can have on young students, I was previously unable to identify a relevant topic which could be related to my studies; however, upon further contemplation and research, I was able to uncover a topic that I had not given much thought to, but now find extremely interesting and intriguing: music therapy. Through this research assessment, I was able to expand my previous knowledge about the impacts that music can have on people, and I am now able to apply it in a much more physical sense, as I realize the extensive number of ways in which music can aid in the process of healing physical pain caused by a great amount of factors.

The first source that I chose to gather research from was based on music therapy as a whole, with a variety of different subtitles, each addressing a different use or application of music therapy. I was able to learn that music can be, and is, used in areas such as, but not limited to, pain relief, reducing blood pressure, aiding in recovery from a stroke, and assisting with cardiac issues. Additionally, I learned that music is one of the very few mediums on earth that can be used to stimulate both sides of the brain. Upon further research, I learned that the right side of the brain is responsible for controlling the left side of the body, and is used for creative purposes. Likewise, the left side of the brain is responsible for controlling the right side of the body, and is used for logical purposes, such as mathematics. Because music activates both sides of the brain, it is an ideal method of healing and engagement, while at the same time remaining a much cheaper option for healing, which is beneficial for participants in this type of therapy. Aside from this, I was also taught that specific genres of music are typically more effective than others. For example, classical music, raga, and Celtic music are very effective in a sense of both relaxation and lowering a patient's heart rate. Because these types of music typically consist of a slow and relaxed tempo, and have little to no words, they are beneficial to patients who may struggle with stress or anxiety. Opposite from this, however, music with a much quicker tempo, such as jazz, can be used in order to make a potentially lethargic patient feel very energized. I found this article very helpful in my knowledge of the ways in which music can be used outside of a classroom setting, and hope to include this knowledge in the creation of my personal future classroom environment.

Through the second source that I studied, I was able to learn about the basic history behind the formation of music education. While the first article, discussed above, was much

more beneficial to my understanding of the topic as a whole, this source was also helpful to me, as it showed me the ways in which music has been used to heal since early history. Music therapy, I learned, dates back to early Greek history, as philosophers and citizens began to focus on the more physical factors that lead to disease and sickness, rather than the spiritual aspects. Because of their newfound understanding, the Greeks then began to incorporate music into the healing the mind and soul, as well as the bodies, of suffering individuals. Finally, I was able to learn about the three main methods of music therapy, including Nordoff-Robbins, Neurological Music Therapy (NMT), and Guided Imagery and Music (GIM). Nordoff-Robbins was created to focus on the inclusion of improvisation of music, as well as composing music in order to heal. NMT focuses on the effects of music on the brain, rather than physical pain. GIM focuses finally on music at a much more spiritual level, as it incorporates these aspects into physical healing.

Through the knowledge that I gained in my research, I was able to form an idea based on a field very separate from mine, but still very relatable. I found the topic of music therapy very interesting, and hope to include some aspects from these sources in my own teaching. While I will not necessarily be able to use music for physical healing, as I am not studying any medical fields, I could incorporate music not only into my teaching, but also into the ways in which I help students overcome certain challenges in their lives. Music can also be used separately from teaching as I could encourage its use in the means of studying. I plan to create a more solid plan to build a foundation of a future classroom on as the school year in ISM progresses.

Music is an art, entertainment, pleasure, and ... medicine for the soul and body. Music is one of the few activities that involves using the whole brain. It is intrinsic to all cultures and has surprising benefits not only for learning language, improving memory and focusing attention, but also for physical coordination and development.

Not all types of music have favourable effects. Music can be distracting if it's too loud or too jarring, or if it competes for our attention with what we're trying to do. But for the most part, exposure to classic music has beneficial effects:

Pain relief

Overall, music does have positive effects on pain management. Music can help reduce both the sensation and distress of both chronic pain and postoperative pain.

Listening to music can reduce chronic pain from a range of painful conditions, including osteoarthritis, disc problems and rheumatoid arthritis, by up to 21% and depression by up to 25%, according to a paper in the latest UK-based Journal of Advanced Nursing²⁹.

Music therapy is increasingly used in hospitals to reduce the need for medication during childbirth, to decrease postoperative pain and complement the use of anesthesia during surgery³⁰.

There are several theories about how music positively affects perceived pain:

- 1. Music produces revulsive effect
- 2. Music may give the patient a sense of control
- 3. Music causes the body to release endorphins to counteract pain
- 4. Slow music relaxes by slowing breathing and heartbeat

Reducing blood pressure

By playing recordings of relaxing music every morning and evening, people with high blood pressure can train themselves to lower their blood pressure - and keep it low³¹. According to research reported at the American Society of Hypertension meeting in New Orleans, listening to

just 30 minutes of classical, Celtic or raga music every day may significantly reduce high blood pressure.

Medicine for the heart

Music is good for your heart. Research shows that it is musical tempo, rather than style. Italian and British researchers³² recruited young men and women, half of whom were trained musicians. The participants slipped on head phones and listened to six styles of music, including rap and classical pieces, with random two-minute pauses. As the participants kicked back and listened, the researchers monitored their breathing, heart rates and blood pressure. The participants had **faster heart and breathing rates when they listened to lively music**. When the musical **slowed, so did their heart and breathing rates**. Some results were surprising. During the musical pauses, heart and breathing rates normalized or reached more optimal levels. Whether or not a person liked the style of music did not matter. The tempo, or pace, of the music had the greatest effect on relaxation.

Promotes Post-Stroke Recovery

A daily portion` of one's favorite pop melodies, classical music or jazz, can **speed recovery from debilitating strokes**, according to the latest research. When stroke patients in Finland listened to music for a couple of hours each day, verbal memory and attention span improved significantly compared to patients who received no musical stimulation, or who listened only to **stories read out loud**, the study reports³³. Listening to classical music improves visual attention in patients with unilateral neglect after stroke⁴³.

Recent research has shown that music listening after stroke not only promotes behavioral recovery, but also induces fine-grained neuroanatomical changes in the recovering brain⁴⁰.

Chronic headaches & migraine remedy

Music can help migraine³⁴ and chronic headache³⁵ sufferers reduce the **intensity, frequency, and duration** of the headaches.

Music boosts immunity

Music can boost the immune function. Scientists explain that a particular type of music can create a positive and profound emotional experience, which leads to secretion of immune-boosting hormones²². This helps contribute to a reduction in the factors responsible for illness. Listening to music or singing can also decrease levels of stress-related hormone cortisol. Higher levels of cortisol can lead to a decreased immune response²³⁻²⁴.

Anti-seizure effect

The latest 2014 study revealed that listening to Mozart K 448 (Sonata for Two Pianos in D major) reduced the seizure recurrence and epileptiform discharges in children epilepsy³⁶. The antiepileptic effect of Mozart's sonata has been earlier demonstrated by Taiwanese scientists³⁷.

Postpartum well-being

Using music therapy during childbirth decreased post-natal anxiety and pain, increases the satisfaction with childbirth and reduces the likelihood of postpartum depression³⁸.

Tinnitus

Music therapy in an early stage of tinnitus can prevent tinnitus from becoming a chronic condition³⁹.

2Effects of music on the brain

Music activates many regions of the brain, including auditory, motor and limbic (associated with emotions)⁴⁶. Such widespread activation of brain explains many beneficial emotional and cognitive music effects.

Music enhances intelligence, learning, and IQ

The idea that music makes you smarter received considerable attention from scientists and the media. Listening to music or playing an instrument can actually make you learn better. And research confirms this.

Music has the power to enhance some kinds of higher brain function:

- **Reading and literacy skills**¹¹⁻¹³
- **Spatial-temporal reasoning**¹⁴⁻¹⁵
- **Mathematical abilities**¹⁶⁻¹⁷ - Even children with attention deficit/hyperactivity disorder benefit in mathematics tests from listening to music beforehand.
- **Emotional intelligence**
- Recall of autobiographical and episodic information⁴⁴⁻⁴⁵

The Mozart effect

Earlier it has been thought that listening to classical music, particularly Mozart, enhances performance on cognitive tests. However, recent findings¹⁸ show that listening to any music that is personally enjoyable has positive effects on cognition.

Music improves memory performance

The power of music to affect memory is quite intriguing. Mozart's music and baroque music, with a 60 beats per minute beat pattern, activates the left and right brain. The simultaneous left and right brain action maximizes learning and retention of information. The information being studied activates the left brain while the music activates the right brain. Also, activities which engage both sides of the brain at the same time, such as playing an instrument or singing, cause the brain to be more capable of processing information.

Listening to music facilitates the recall of information¹⁹. Researchers have shown that certain types of music are a great "keys" for recalling memories. Information learned while listening to a particular song can often be recalled simply by "playing" the songs mentally.

Musical training has even better effect than just listening to classical music. There is clear evidence²⁰, that children who take music lessons develop a better memory compared with children who have no musical training.

Note: For learning or memory performance, it's important that music doesn't have a vocal component; otherwise you're more likely to remember the words of the background song than what you're supposed to be recalling.

Music improves concentration and attention

Easy listening music or relaxing classics improves the duration and intensity of concentration in all age groups and ability levels. It's not clear what type of music is better, or what kind of musical structure is necessary to help, but many studies have shown significant effects²¹.

Music improves athletic performance

Choosing music that motivates you will make it easier to start moving, walking, dancing, or any other type of exercise that you enjoy. Music can make exercise feel more like recreation and less like work. Furthermore, music enhances athletic performance⁶⁻⁸! Anyone who has ever gone on a long run with their iPod or taken a particularly energetic spinning class knows that music can make the time pass more quickly.

The four central hypotheses explaining music's facilitation of exercise performance include:

- Reduction in the feeling of fatigue
- Increase in levels of psychological arousal
- Physiological relaxation response
- Improvement in motor coordination

Music improves body movement and coordination

Musical rhythm has the remarkable ability to move our bodies. Music reduces muscle tension and improves body movement and coordination²⁵⁻²⁶. Music may play an important role in developing, maintaining and restoring physical functioning in the rehabilitation of persons with movement disorders.

4Music helps to work more productively

Fatigue fighter

Listening to upbeat music can be a great way to find some extra energy. Music can effectively eliminate exercise-induced fatigue² and fatigue symptoms caused by monotonous work¹⁰.

Keep in mind that listening to too much pop and hard rock music can make you more jittery than energized. Vary what you listen to and find out what type of music is most beneficial for you. You could try classical music one day, pop the next day and jazz the third.

Music improves productivity

Many people like to listen to music while they work and I am certainly one of them. How about you? Did you know you can perform better at your work with music? Whilst there may be many reasons for wishing to listen to music in the workplace, it really improves your productivity²⁷!

According to a report in the journal *Neuroscience of Behavior and Physiology*²⁸, a person's ability to recognize visual images, including letters and numbers, is faster when either rock or classical music is playing in the background.

Relaxing music induces sleep

Relaxing classical music is safe, cheap and easy way to beat insomnia¹. Many people who suffer from insomnia find that Bach music helps them. Researchers have shown that just 45 minutes of relaxing music before bedtime can make for a restful night².

Relaxing music reduces sympathetic nervous system activity, decreases anxiety, blood pressure, heart and respiratory rate and may have positive effects on sleep via muscle relaxation and distraction from thoughts.

Music reduces stress and aids relaxation

Listening to slow, quiet classical music, is proven to reduce stress³. Countless studies have shown that music's relaxing effects can be seen on anyone, including newborns.

One of the great benefits of music as a stress reliever is that it can be used while you do your usual deeds so that it really doesn't take time.

How does music reduce stress?

- **Physical relaxation.** Music can promote relaxation of tense muscles, enabling you to easily release some of the tension you carry from a stressful day.
- **Aids in stress relief activities.** Music can help you get "into the zone" when practicing yoga, self hypnosis or guided imagery, can help you feel energized when exercising and recover after exercising, help dissolve the stress when you're soaking in the tub.
- **Reduces negative emotions.** Music, especially upbeat tunes, can take your mind off what stresses you, and help you feel more optimistic and positive. This helps release stress and can even help you keep from getting as stressed over life's little frustrations in the future. Researchers discovered⁴ that music can decrease the amount of the cortisol, a stress-related hormone produced by the body in response to stress.

6Music improves mood and decreases depression

Prescription for the blues

Music's ability to "heal the soul" is the stuff of legend in every culture. Many people find that music lifts their spirits. Modern research tends to confirm music's psychotherapeutic benefits⁵. Bright, cheerful music (e.g. Mozart, Vivaldi, bluegrass, Klezmer, Salsa, reggae) is the most obvious prescription for the blues.

Music therapy, clinical discipline in which music is used to address nonmusical goals. Therapists use music listening, songwriting, improvisation, and lyric analysis as means of fulfilling goals in movement, cognition, speech and language, and mental health.

Music therapy is an allied health profession, delivering health services that are outside the scope of those traditionally provided by physicians and nurses. Because music is a familiar and powerful medium, it is conducive to application across the lifespan, from use in neonatal intensive care units to nursing homes and hospice facilities. Psychiatric hospitals, correctional institutions, and drug rehabilitation centres may also use music therapy.

Historical development

The earliest musical instrument that has been found is a bone flute thought to be some 42,000 years old. Given this evidence and the long history of music in human culture generally, music therapy is thought to have ancient roots. Much of what has been studied and recorded about music therapy, however, has been done through the lens of Western ideas. As a result, the use of music as a therapeutic experience clearly has a Western bias. British researcher Peregrine Horden, editor of *Music as Medicine: The History of Music Therapy Since Antiquity* (2000), distinguished the influence of “first-world” music therapy (in countries such as the United States and the United Kingdom) from the influence of traditional or indigenous forms of musical healing seen elsewhere in the world. There are numerous examples of indigenous healing ceremonies based on music and dance. In some African languages, there is no separate word for *music* and *dance*; they are one and the same.

Often key to understanding the use of music as therapy is understanding the prevailing philosophy of healing and disease. The ancient Greeks, by the 5th century bce, had begun to distance themselves from a divine conception of disease (disease as retribution from the gods) and to concentrate on material causes, such as an imbalance of the four humours (bodily fluids); music, they believed, could restore peace and harmony to both body and soul. Greek philosophers Plato and Pythagoras wrote extensively about music and its effects, and they are often quoted in support of music, music education, and music therapy.

In the 1800s, with the refinement of the scientific method, music was investigated for the physiological changes it could effect. The first published study in music therapy appeared in 1789 and was called *Music Physically Considered* (author unknown). Dissertations on the subject published by American medical researchers included one in 1804 by Edwin Augustus Atlee and a second in 1806 by Samuel Mathews. Atlee and Mathews studied under American physician Benjamin Rush, a well-known advocate for the clinical use of music. Also in the 19th century, experiments with music therapy were performed for the first time on patients at an institution, Blackwell's Island Asylum in New York.

The field of music therapy experienced a surge of activity following World Wars I and II. Veteran's hospitals in the United States employed musicians to work with soldiers who today would be diagnosed with post-traumatic stress disorder (PTSD). Those experiences spurred the development of a professional music-therapy practice that included a college-level curriculum.

In 1950, after several attempts to start a professional organization in the United States, the **National Association for Music Therapy** was founded. A second organization with a somewhat different approach to practice, the **American Association for Music Therapy** (originally the Urban Federation of Music Therapists), was begun in 1971. In 1998 the two organizations **joined to form the American Music Therapy Association.**

Two international associations of music therapy also were founded: the World Federation of Music Therapy, in 1985, and the European Music Therapy Confederation, in 1990. Those organizations presented conferences and provided oversight of educational programming, professional development needs, and research initiatives and advocacy. Training in music therapy was offered worldwide at both undergraduate and graduate levels. The clinical phase typically entailed more than a thousand hours of training.

Clinical practice

A variety of tools and genres of music are used in music therapy. Examples of interventions include improvisation, original songwriting, lyric interpretation, and listening to and singing familiar music. The music used depends on the patient's needs and preferences. For example, if a music therapist is working with a patient who has a **movement disorder (such as those caused by**

Parkinson disease or stroke), rhythmically driven music may be employed to facilitate gross or fine motor movement. A music therapist may use sedative music to assist a person in achieving a deep state of relaxation in preparation for surgery, childbirth, chemotherapy, or a transition to hospice care. Those practices can also be employed to help individuals enhance their state of well-being by reducing overall reactivity to daily stressors.

In the treatment of autism, music can be an effective approach for young children who have yet to begin talking. Children on the autism spectrum are often drawn to music, which is in stark contrast to their often minimal responses to spoken language or environmental sounds. If music captures their attention, it can be used to facilitate their communication and social skill development. With patients who suffer from dementia, music therapists can bridge the loss of memory through music. The music of one's youth is embedded deeply in the brain and can be accessed even late into the disease process. Recalling positive memories through music therapy can provide comfort, motivation, and relaxation when the person is anxious, agitated, or in need of completing activities of daily living, such as bathing or dressing.

Similar to other therapists, music therapists work within the context of a relationship. Music therapists are trained in psychology, biology, and neurology, which helps them deliver optimal services to patients young or old.

Approaches in music therapy

Any of several specialized approaches may be used in music therapy. Nordoff-Robbins music therapy (also known as creative music therapy), for example, is an improvisational approach to therapy that also involves the composition of music. It was originally created by American composer and music therapist Paul Nordoff and British music therapist Clive Robbins as a therapeutic approach for children and adults with significant developmental disabilities (e.g., intellectual, sensory, or motor disability). This approach is practiced worldwide with a variety of patients of different ages.

Using the Nordoff-Robbins approach, a child with autism, for example, may vocalize spontaneously, and these vocalizations can become the basis of improvised music. This experience of "being heard" captures the child's attention. Once attention is established, the

music therapist can alter and advance the music improvisation in ways that prompt the child to vocalize with specific responses or to play an instrument in a specific way. The music becomes the context of a nonverbal dialogue that mirrors the prelingual communication of infants with caregivers. This natural phase of development includes turn taking, repeating the other's production, and expanding those productions, all of which are key to the development of speech, language, and cognition.

Music therapists may choose to be trained in neurologic music therapy (NMT). Training in this approach focuses on understanding and applying scientific, evidence-based practices, usually for the purpose of neurorehabilitation (the recovery of neurologic function). Examples of techniques employed in this approach include auditory perception training, patterned sensory enhancement, and therapeutic singing, which may be used to improve cognitive, sensorimotor, or speech functions, respectively. Training in neurologic music therapy is offered at institutions worldwide and includes training of other allied health practitioners, such as physical, occupational, and speech therapists, as well as training of physicians and nurses.

Guided imagery and music (GIM), originally devised by American music therapist Helen Lindquist Bonny in the 1960s and early '70s, is a music-based psychotherapeutic practice that aims to integrate emotional, mental, physical, and spiritual components of well-being. During a session, the therapist guides the patient into a deepened state of relaxation. Specially selected music is then played, and the patient describes his or her mental imagery, feelings, and memories, thereby enabling personal insight and contemplation.

Music therapy may also be used in the neonatal intensive care unit (NICU). NICU music therapy is a highly specialized practice for premature infants. Studies have indicated that the structured use of music therapy in the NICU can positively affect premature infants, such as by improving feeding. This can result in reduced hospitalization stays and significant cost savings.