MUSICAL EXPLORATION BEYOND THE REALM OF ENTERTAINMENT: JUSTIFICATION FOR A NEW COURSE

by

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ABSTRACT

Formal music education encompasses a large variety of skills and knowledge, with everything from conducting, to composition, to music history, and instrument mastery. At Texas State University, however, no course investigates music's role in other fields of study. This thesis' purpose is to introduce a music exploration course designed to present music as a useful tool to multiple fields of study, while teaching students how music can be used for more than personal entertainment. Within this thesis, I explain why this class is a necessary addition to the curriculum, the anticipated students who might take the course, and how this course might reveal different career interests.

To offer a better understanding of *Music Exploration Beyond the Realm of Entertainment*, my thesis includes a preview of content that would be covered in the class and reading material. Music is known to be a fine arts practice, but this class aims to expand individuals' perception of music as more than just a fine art. With topics like music therapy, film music, and music's connection to retention, students will leave the course with a new perception of how music can be used in various fields of study.

I. INTRODUCTION TO MUSIC EXPLORATION

Music is a broad entity that is often labeled as purely a form of entertainment. It is typical for people to misunderstand music's extensive benefits and make the assumption that music cannot be used for anything more than an enjoyable pastime. It is my belief that individuals of all ages should have access to more knowledge on music's potential uses. My proposal is that Texas State University could offer a course that would explore music's benefits beyond the realm of entertainment. Yes, the university offers music courses that observe music from an outside perspective, such as SOCI 3333: The Sociology of Popular Music, or HIST 3368M: Popular Music and Social Movements in 20th Century America, however, these classes observe music as it connects to society's development. Musical Exploration Beyond the Realm of Entertainment would introduce music as a tool within various fields of study, such as education, medicine, and psychology. The goal of student's involvement in the course would be to expand individual perception of music's purpose and uses as a tool, with the hopes that as students become more knowledgeable about the material, they will seek ways to implement music within their respective fields.

To start, choosing to implement this course would be ahead of its time. With some research, I found that other than music therapy studies, which are strictly tailored to students in that field, few institutions offer music courses that stray away from what we know to be 'standard music curricula.' In an article by the College Music Society, they lay out the three most notable aspects in typical music curriculum. "All curricula deal with training in the making of music: performing, composing, and conducting, …musical 'objects', via the detailed study of individual works, [and] the study of music in larger

contexts, relating both ‘music making’ practices and ‘individual works’ to other aspects of experience and other scholarly disciplines” (The College Music Society). The article goes on to define how the standard for many music courses revolves around a Western notion of music and music literature. Though this is all important to music study, this class aims to educate students outside of the music realm. By introducing this new class structure, Texas State University would be breaking the status quo for music instruction and would be taking a stride toward reforming the concept of music education.

Furthermore, education is meant to advance with changing times. “In spite of strong turns in musicological scholarship towards cultural theories, critical frameworks, and diverse repertories, the Eurocentric canonic curriculum seems still very much entrenched in required music history survey and “appreciation” courses in post-secondary degree programs in both Canada and the United States” (Walker, 2020). Now in the twenty-first century, we have seen the rise of college courses like African American Music, or Music and Society. But in order to match this progressive behavior, it is important that we adjust our views on music’s many uses. When music originally started taking on stricter forms, it was molded into an entertainment source for upper class Europe. Now, it has blossomed into something accessible to all. As we learn more about music’s cultural impact and connection to society, it is equally important to study its ever-changing benefactors as we gain more knowledge on music as a tool.

Additionally, though curriculum is always an important factor, how might this course benefit an undergraduate student attaining their degree? I picture that this course would be an advanced elective for either a sociology degree, or a music degree. Many individuals are offput by music courses because they fear being left behind in curriculum

if they have no formal music training. This course would be designed in a way that is tailored to any individual looking to learn more about how music affects people. General education courses are offered so students know a little bit about everything, and this class would be similarly structured. I also picture this class opening up new branches or career paths for different individuals. The Task Force on the Undergraduate Music Major offers "recommendations on three key pillars necessary to ensure the relevance, quality, and rigor of the undergraduate music curriculum. The three pillars are creativity, diversity, and integration" (Campbell, 2014). The new course would show students new, creative ways to think about music and hopefully, it will teach them different ways they can start implementing music within their respective fields.

II. DEVELOPMENT OF AN HONORS MUSICAL EXPLORATION COURSE

Music as a Medical Benefactor

"In the late 19th century, the first recorded music was used in the hospitals as an intervention to diminish anxieties associated with surgery and it has been a growing field of development and research since the end of World War II, especially in the USA and in Germany" (Packyanathan, 2019). Over time, the use of music therapy has proven useful, and yet, the Department of Labor still classifies music therapy as 'recreational therapy.' Music continues to be undermined and ignored as something of use in outside fields. In the class, *Musical Exploration Beyond the Realm of Entertainment*, I hope to shed some light to break the stigma, starting with medical uses.

The most basic benefit of music therapy, or using music medically is the reduction of stress levels. In a study conducted with merely rats, music was used to track cognitive and psychological response to wandering a maze. After exposing rats to both classical and rock music, it was found that certain elements produced greater relaxation than others. "The musical elements that induced a relaxing effect are: steady tempo, stability or gradual shifts in volume rhythm, timbre, harmony; consistent texture, predictable harmonic modulation, appropriate cadence, predictable melodic lines, repetition of material, soft timbre, few accents, among others" (Marianna, 2017). Interestingly, though listening to rock pieces caused extra tension, rock music listening did boost activity and energy in its subjects. On top of reduction in stress, the study discovered a whole plethora of benefits. "In animal models, classical music reduces anxiety [and] it was an effective method to reduce blood pressure. Furthermore…it is

effective antagonizing the adverse effect of stress on immune system and cancer development and music protects memory against callosal lesions" (Marianna, 2017). But, how is this kind of research beneficial to humans?

Similar research has been conducted in a human environment, and though more research needs to be completed, the results appear to lineup with some of the results found in animal studies. In a different study related to dental anxiety, musical therapy was used in a dental office to destress patients who experience nervousness when visiting. Individuals who were undergoing dental extractions were subjected to music-listening while having their procedure completed. The results showed that music exposure, on average, decreased systolic and diastolic blood pressure, and heart rate in patients.

	Before	After	Mean Difference
Systolic Blood Pressure	134.4 mm/hg	126.64 mm/hg	7.84000
Diastolic Blood Pressure	88.4 mm/hg	81.84 mm/hg	6.56000
Heart Rate	78 beats/min	73 beats/min	5.04000

Table 1: Paired samples test of Hemodynamic changes in dental patients exposed to music (Packyanathan, 2019).

The group who was treated with music therapy during their procedures "registered significant difference in the salivary cortisol concentration, systolic and diastolic pressure, heart rate, body temperature and stimulated salivary flow" (Packyanathan, 2019). With this knowledge at hand, we could start looking into how music helps stabilizes blood pressure and anxieties in more serious medical situations.

Over the years, as we've gained more knowledge about music's role in the healing process, there have been promising results between music use and increases in mental recall with dementia patients. In an assessment of multiple case studies, Raglio reported that in an experiment in which dementia patients participated in music training, evaluations "showed a significant increase in memory test scores in the experimental group and a significant effect size in other cognitive abilities, whereas a decline in cognitive function was observed in the control group" (Raglio, 2012). In a follow-up article, Raglio reports that "music listening seems to be an effective intervention in the field of dementia both for increasing pleasure and enhancing quality of life, and for reduction of behavioral disturbances" (Raglio, 2018). Even the act of listening to music affects behavior. "The use of preferred music was explored in five studies…these studies found a consistent reduction in agitated behaviors, [showing] improvements in mood and more smiling, dancing, and clapping in time to the music" (Cox, 2010). Furthermore, Cox points out that the role of music therapists accelerates improvement. If music therapists are present to supervise intervention, they are able to train other staff members on care procedures, focus the patient's music therapy sessions, and create a more clinical program. Though much more research on the role of music in dementia patients' lives needs to be completed, the above research reports similar results of improvement.

Though music therapy occasionally works as a stand-alone mode of therapy, it's been found that music therapy is most effective when paired with standard therapeutic practices. In one study that monitored depression in stroke patients, music was found to be a game-changer. Depression in stroke patients during recovery is very common, and "depression has adverse effects on the functional outcome of stroke patients" (Sumakul,

2020). In this particular experiment, three groups were tested. One group was treated with standard practices, another with instrumental music therapy, and the last group used combined treatment. After the experiment, the results showed "that simultaneous musical therapy interventions [had] the most significant contribution to depression rates" (Sumakul, 2020). In a different study, Polish researchers investigated music therapy's benefits to preterm infants and their mothers during their NICU stay. While using standard restorative practices to improve the health of the child, music therapy was implemented to monitor changes. "Using live or recorded music, together with other types of music-based interventions, has a measurable positive physiological and behavioral impact on infants and their parents' outcomes during hospitalization" (Bieleninik, 2020). When used with children, music therapy can "[regulate] physiological parameters…improve feeding ability and weight gain, and [regulate] behavior states" (Bieleninik, 2020). As for parents, music therapy can potentially reduce stress, improve the ability to cope, and increase general well-being.

There are still many unknowns about music's uses in medicine, but ongoing studies are already offering implementable information. If we can expand our research on the benefits of music therapy, then music could prove beneficial beyond dwindling anxieties and improvement of general well-being.

Music as an Educational Benefactor

As a blossoming music student, I remember my band director sharing a comment with the class in which he insinuated that students who learned instruments often had higher grades and performed better in the classroom. At the time, I assumed he was just trying to encourage his students by telling them they are smart. However, it seems there

is more truth to this statement than just an easily glazed over compliment.

Over the years research has been conducted to learn more about music's impact on cognitive function, including one by the Finnish researchers at the University of Helsinki. "Participants listened to Mozart's Violin Concerto No. 3 in G Major, K. 216. Music was found to enhance the activity of genes involved in dopamine secretion and transport, synaptic function, learning, and memory" (Clavier Companion, 2015). However, all participants were not necessarily musically trained. Some were just seasoned music listeners, familiar with the listening experience.

Across the board, it seems that those with musical training at a young age reshape certain areas of their brain when learning an instrument. "Because musical activity has been found to be a driver of plasticity in motor and auditory regions, it is not surprising that intense musical training also results in changes to brain areas related to cognitive processes along with positive transfer effects on cognitive performance" (Hoffmann, 2020). In Hoffmann's article, it goes on to say these kinds of cognitive changes show improvements in one's ability to learn and retain, consequently producing advancement in academia, and providing assistance to individuals with memory disorders. Below is a preview of an SAT score comparison between high school All-State music competitors in the state of Texas, as compared to the national and state average. The All-State competitors outperform the national and state average consistently, year-after-year.

	2011	2012	2013	2014	2015	2016	2017	2018	2019
All-State Composite Score	1852	1825	1847	1928	1844	1803	1273	1302	1308
National Average	1509	1500	1498	1497	1490	1484	1060	1068	1059
Texas State Average	1462	1434	1437	1432	1410	1409	1020	1032	1022

Table 2: A 9-year comparison between high school music competitors SAT scores and the SAT national and state averages. *data from TMEA.org

However, musical academic advancement is not only present in children. In a study using the perception of 'The Mozart Effect', college students were quizzed under two groups, one group who observed a normal lecture, and another that experienced the same lecture with accompanying music. "[Their] aim with this study was to investigate how listening to music during learning, influences the affective states of undergraduate students and their performance." (Dosseville, 2012). To make sure students weren't distracted or affected by outside sources, they conducted a survey before the quiz to ensure that one group was not more apt to succeed than the other. The final test results showed that the experimental group performed significantly better on the quiz than the control group. "This means music could have played a role in the academic outcome" (Dosseville, 2012). Additionally, the experimental group reported a more positive, enjoyable experience than their control group counterparts.

These results lineup with the aforementioned idea that music stimulates cognitive function. In former research, it was found that listening to Mozart improved participants mood and arousal, and their brain stimulus, similar to the previous study mentioned.

Though some research deems the Mozart Effect controversial, the research reigns true that there seems to be a trend in classical music boosting cognitive response.

Additionally, it's been long thought that arts integration in the classroom helps young minds grasp content better. "Arts integration is defined…as a strategy for connecting development of skills and concepts in the arts with skills and concepts from other areas of learning through multiple modes of engagement in classrooms" (Corbisiero-Drakos, 2021). A short example is learning your ABC's in the form of song instead of trying to individually remember letters. Schoolhouse Rock is another prime example, using music integration to teach history, math, science, and language. In a study conducted by a Kindergarten intern in 2008, the goal was to observe if students showed improved retention when songs were created to teach lessons. "According to the post-skills inventory, students' recognition of –et words (Mr. Vet was a pre-packaged song) improved drastically (10 more students read 'pet' afterward than before). In fact, the post-skills inventory showed gains in almost every word family that [they] discussed" (Levenson, 2008). After her study, Levenson also reached out to fellow teachers in order to gain knowledge on ways music integration was beneficial to their respective classrooms. Teachers noted that music was useful for classroom motivation, memory development, and teaching to multiple intelligences.

If any of this prior research holds up, educational curriculum should be implementing music within the standard classroom to improve memory and positive experience. If music were to be used as a retention tool, students who typically struggle with learning may see their brain reshape before their eyes. And because music is not

currently a normality for in classroom learning, people don't typically consider using it against the status quo of PowerPoints and quiet classrooms.

Music as an Emotional Benefactor

On YouTube, cinema fans post their original 'recut' movie trailers with alternative music to portray a movie with a different storyline. For example, with a change of background music, the trailer for the horror film, *IT* becomes a comedy, or the trailer for *Happy Gilmore,* a comedy, becomes a thriller. Music has a unique ability to influence our emotions or change our perception of the world around us. Music has the potential to evoke an emotional response, and this occurs in instances such as film music or what we choose to add to a playlist.

In film, music and sound effects are carefully crafted to create an audio-visual story. "The music impacts the image as the image impacts the music. Between sound and image there is a "transfer", a "contamination" of attributes" (Pilewski, 2018). Even in the era of silent film, live musicians present in the theater accompanied the movies. For centuries, musicians have associated sounds to particular emotions. These theories even date back to philosophers such as Plato. In his book, *The Republic,* Plato mentions music has the ability to invoke "soberness, courage, liberality, and high-mindedness, and ail their kindred and their opposites, too," (Plato, 375 BC). Flash forward to the Middle Ages, where intervals, such as a tritone, created such dissonance that people were unsettled by its sound. Tritones even earned "the name Diabolus in musica ("the Devil in music")…theorists and composers considered it the most dangerous" (Ciurlioniene, 2019) and thus it was strictly forbidden. Pilewski's article includes a breakdown for how to craft certain sounds in order to invoke different emotions.

	ANGER	FEAR	HAPPINESS	SADNESS	TENDERNESS
TEMPO	*Fast*	*Fast*	*Fast*	*Slow*	*Slow*
DYNAMICS	*Loud*	*Soft (except in panic fear)*	*Medium*	*Soft*	*Soft*
DYNAMICS VARIABILITY	*Much*	*Much*	*No data*	*Little*	*Little*
PITCH LEVEL	*High*	*High*	*High*	*Low*	*Low*
PITCH VARIABILITY	*Much*	*Little*	*Much*	*Little*	*Little*
PITCH CONTOUR	*Rising*	*Rising*	*Rising*	*Falling*	*Falling*
TONE ATTACKS	*Fast*	*No Data*	*Fast*	*Slow*	*Slow*

Table 3: A schematic summary of Juslyn and Laukka's (2003) research – (Pilewski, 2018)

The table demonstrates how composers could go about crafting certain sounds to achieve a particular feeling. With different variations in speed, volume, and notes, artists can create sounds that associate to feelings of being scared or sad. As it lists above, to invoke a feeling of fear, one might use a higher pitch. "Music used to underscore frightening scenes in movies is often described as sounding "scream-like." A well-known example is the music accompanying the infamous shower murder scene in Alfred Hitchcock's film Psycho (1960) with "screeching, upward glissandi" from the violins (Trevor, 2020). Human screams are often viewed as a sign of danger. This is why composers try to replicate these sounds, in order to provide a sense of danger, or fear.

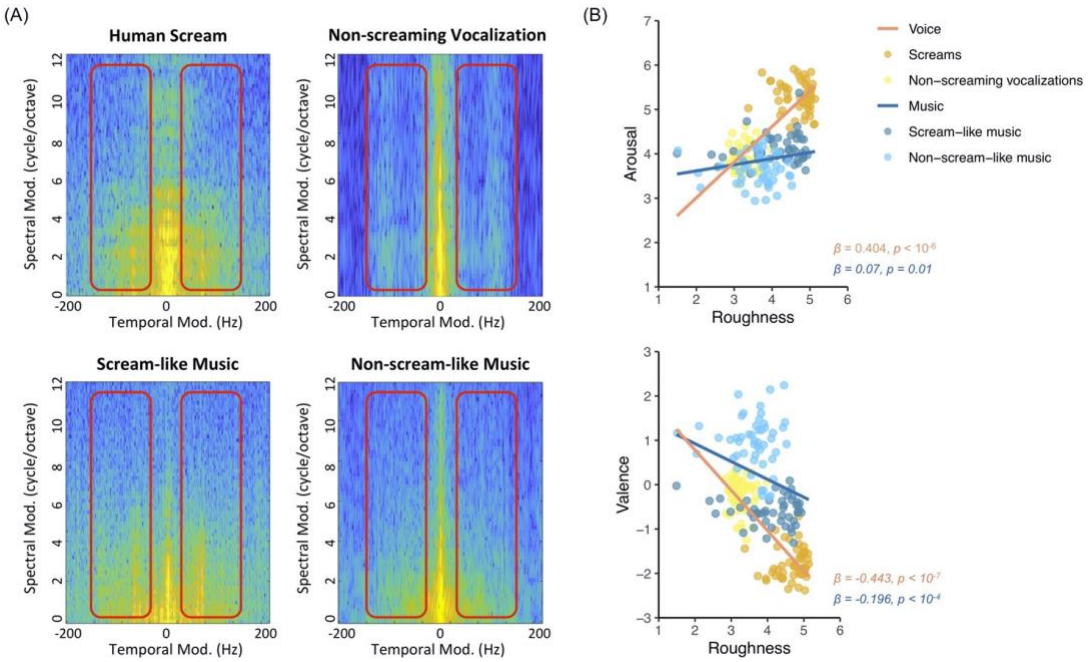

Table 4: Four audio recording analyses comparing scream, scream-like music, non-screaming vocalization and non-scream-like music. The upper plot demonstrates ratings of arousal compared to roughness of the sound, and the lower plot compares valence and roughness. (Trevor, 2020)

In a study used to investigate audiovisual congruency, film makers showed two clips, one with wolves being aggressive, and another where they were acting playful. First, they overlayed the music that 'matched' what was being shown. Then, they swapped the audios to put an aggressive sound over the playful image and vice versa. The hypothesis was that the two scenes would have a lesser impact due to the contrasting audio. "However, in this study, aggressive film scenes were less effected by the friendly music than friendly film scenes by aggressive music. Aggression, whether it is conveyed visually or musically, dominated the perception of the audiovisual stimuli" (Rosenfield and Steffens, 2019). That being said, music can still be used incongruently to uphold the mood of the visual. "In the film Shaun of the Dead (2004) by Edgar Wright, the zombie fight scene in the bar is accompanied by the song Don't Stop Me Now by Queen. The positive music with the lyrics "Cause I'm having a good time" is in contrast to the

threatening situation…[which] leads to an emotional neutralization of the film scene and partly to a sarcastic effect" (Rosenfield and Steffens, 2019). This type of ironic use changes the viewer's perception. Though fighting zombies may seem dangerous and create fear in some audience members, the music serves as an aid to reassure viewers that the scene is comedic, and fear is not necessary. Without the aid of music, the storyline could be left open-ended with no clarity.

In addition to music being used to create emotion, there is also the phenomena where we, as music listeners, use music to either accompany, or combat, emotions we already feel. For example, sometimes in sadness, we will seek something somber sounding, but other times in a fit of sadness, we look for something joyful to uplift our mood. Whether music is mood-congruent or not, this subconscious behavior is alluding to something bigger – that music has influence over our emotions. In a series of studies conducted in 2013, the researchers "put forward evidence that states of sadness associated with interpersonal…losses heighten preferences for mood-congruent music" (DeMarco, 2015). However, this was affected by severity of loss and was different for each participant. During the experiment, participants were given hypothetical situations of loss, including the death of a loved one, or something much smaller such as losing a competition. For each hypothetical situation, they were asked to choose whether they would seek 'happy songs' or 'sad songs' in said situation. "Consistent with predictions, on average, participants indicated an 85% preference for sad songs in the face of interpersonal losses, yet just under a 50% preference for such songs in the face of noninterpersonal losses" (DeMarco, 2015). In situations where loss was more severe, participants, on average, sought 'sad songs' to accompany their feeling. However, if loss

was something more minor, like failing a major exam, participants were more likely to choose ‘cheerful songs’ to lift their spirits.

In modern research, scientists have learned that music is not only connected to dopamine release, but instead, taps into the ‘reward’ center of the brain. What’s peculiar, is that in an article investigating research by Laura Ferreri, musical pleasure and arousal seemed to be consistent in the brain, despite variants in music genre. The question at hand: Is musical pleasure the same for an audience that prefers emotional tearjerkers, like Adele, versus heavy metal artists like Cannibal Corpse.

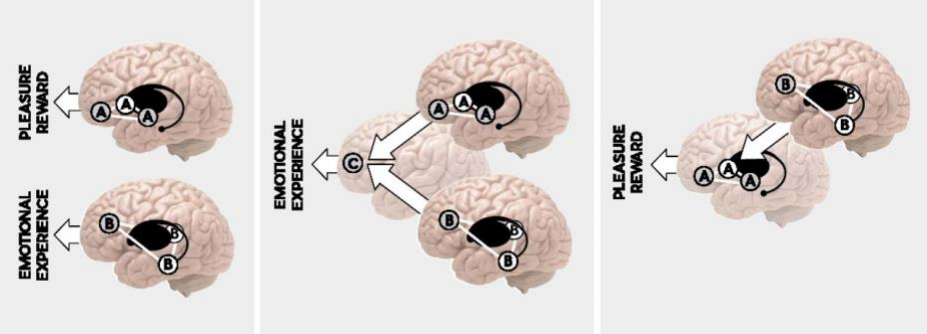

Fig 1: “(A) The corticostriatal model of musical pleasure of Ferreri et al., linking the auditory and orbitofrontal cortices to the NAcc, and (B) one of the many possible mechanisms of musical emotion induction, hypothetically linking the auditory thalami, the amygdala, and the dorsolateral prefrontal cortex engaged, for example, when experiencing heavy metal. As of yet, it is unclear how mechanisms such as these relate to one another. It is possible (Left) that they operate independently and that the constructs of musical pleasure and musical emotions are not functionally related. It is also possible (Center) that the dopaminergic model A operates at the same level as B and constitutes one of many possible first-order inputs to the construction of the integrative emotional experience (C). Finally, it is also possible (Right) that the model of Ferreri et al. constitutes the evaluative process by which the outputs of mechanisms such as B are valuated. Clarifying these relations will be a major objective for future research.” (Goupil and Aucouturier, 2019).

Fig.1 serves to show how despite listening to different music types, individuals seem to find the same musical pleasure when listening to their music preference. Consequently, emotional experience isn’t directly correlated to pleasure, and this a

phenomenon that's still unclear in science. However, it shows that by using our free-will to choose music, whether mood-congruent or not, allows us to tap into musical pleasure, associated with dopamine release in the reward-center of the brain.

Music can also help us better understand the emotional response of others. In an article investigating music therapy's benefits with autistic children, one of the main targets was improving autistic children's ability to communicate. One of the barriers in children with Autism Spectrum Disorder is the lack of perception of other people's emotions. This use of music therapy is thought to improve "contact skills, socialization and emotional, psychological and cognitive development…as a result of body comfort" (Khyzna and Shafranska, 2020). If more research was conducted, music could become an outlet for ASD children to learn emotional communication. Another goal of using music therapy with autistic children is to improve "excitation and control of desired emotions" (Khyzna and Shafranska, 2020). So not only would this form of implementation improve the ability to comprehend the emotions of others, but it would also help children control their own emotional behaviors.

In a study for which music therapists worked with autistic children on attunement, the goal of the therapy was to "increase opportunities for the child to improve self-awareness, to experience shared attention and social reciprocity, and to enhance communication" (Mössler, 2020). The research article begins with an example about how one particular child was brought into a room of instruments and completely dismissed them in order to sit on a bench and stare at passing vehicles. The therapist proceeded to sit with the child and start singing about the cars before incorporating the instruments into their session. The therapist observed the child's body movements and noticed as the song

began to be more energetic, so did the child. This one instance supports the theory that "music therapists can utilize the pre-linguistic musical features of time (rhythm), form (sound), and intensity (dynamic) to create attunement, supporting coherences between sensory and affective modalities within the child (intra-personal) as well as between the child and the therapist (inter-personal)" (Mössler, 2020). If recurring therapy was available in the child's life, then the child might start to pick up associations between music and the emotions within themselves, thus creating an understanding and perception of emotions.

III. CONCLUSION

These above topics are a small glimpse into the extensive knowledge that could be taught in *Musical Exploration Beyond the Realm of Entertainment.* Music can be medicinal, educational, or psychological, but we often view our connection to music as merely for fun, and thus, many people are unaware of how they could be using music in their respective field. By offering a class such as this, Texas State University could start the conversation: How can music help my family member with dementia? Will my grades improve if I learn to play guitar? Why does this type of music make me feel a certain way? *Musical Exploration Beyond the Realm of Entertainment* could push limits by changing standard music curricula, advancing with the times, and offering new material to students who are ready to learn. All it takes is reaching out beyond the status quo, and the realm of entertainment, of course.

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