Benefits of Music Participation on Communication Skills of People with Autism Spectrum Disorder

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**Introduction**

My interest in autism and music is personal, if not selfish. I concern myself with inclusion, benefits, and best practices of people with autism in music because I am a sibling of someone with autism and a music educator. As my sibling and I grew older I became increasing more aware of the educational divide between neurotypical students and students with disabilities in the music classroom. From my point of view, music educators were unprepared to have students like him in their classroom. When it came to music ensemble classes, even at the beginner level, there was an undertone that disabled people were not allowed to participate. At my first concert of the fourth grade my peers from the multiply disabled classroom sat in the back of the gymnasium and watched as most of the grade played in the concert. Reflecting on that experience as a music educator and a sibling of autism is still upsetting. My philosophy of music education aims to eliminate those experiences for future generations. I believe that music is for *everyone.* Therefore, my research is focused on providing advocacy materials that discusses benefits of music education for people with autism.

There is some research regarding teachers perceived preparedness and teaching students with autism. In a literature review published in 2007, Jellison and Taylor reviewed research concerning attitudes towards students with disabilities. Interestingly, they found that no studies measured, “attitudes of parents, siblings; professionals other than teachers, or adults with disabilities” (Jellison & Taylor, 2007, p.11), indicating that research lacks the context in which people with disabilities exist. Researchers were only concerned with the feelings of teachers or peers, not the experiences people with disabilities or their families. In general, the findings indicate music teachers want to be inclusive, but feel unequipped to teach those with disabilities. There may have been other broad issues with inclusive music education that were completely missed by not asking the students, parents, or other professionals for input. The review also showed that neurotypical peers preferred inclusive teaching and their education is not hindered by having students with disabilities in class with them (Jellison & Taylor, 2007).

A more recent study by VanWeelden and Whipple looked at research concerning music educator’s perceived effectiveness of inclusion and found that teachers felt more prepared as of 2014 to be inclusive in the music classroom than they did 20 years prior (VanWeelden & Whipple, 2014). These findings suggest that teachers are prepared to teach students with disabilities but are not given the opportunity to teach students with disabilities. Students with disabilities are not always afforded the opportunity to take music classes, especially in the secondary setting. It is possible that students, parents, or special educators are not made aware of music as a curricular option or that they prefer students with disabilities only focus on required academics. Therefore, the goal of this review of literature is to provide advocacy material for inclusion of people with autism in music. Perhaps by presenting administrators, child study teams, special education teachers, parents, or even students with autism the benefits music education can provide they will choose music as a therapy or curricular course. This review of literature will identify benefits music participation can have on communication skills of those on the autism spectrum.

**What is autism and why could music be useful?**

Autism is a spectrum disorder characterized by, “difficulties in social interaction and nonverbal communication, along with restricted and sometimes repetitive patterns of behavior and interests” (Polischuk, 2022, p.15). Autism presents itself in many ways. Some students have verbal communication abilities. The other end of that spectrum are students who are nonverbal or non-conversational. Some use communication devices or picture boards. Others use sign language to communicate. Some are unable to communicate to others effectively. All these students can benefit from music education. In fact, research suggest that to some degree there is, “innate musical ability in children with ASD” (Clements-Crotes & Yip, 2017, p. 34). Teachers and therapists can use this innate affinity for music to reach students with autism. Its value can be proven to parents and administrators due to its, “general appeal, intrinsic value, and ability to modify behavior” (Sharda et al., 2018, p.7).

**Music Enhances Verbal Communication Skills.**

 In Sharda et. al.’s research regarding improving social communication and auditory- motor connection in children with autism, they compared two groups of children with autism. One group received a music therapy intervention, and one received a typical intervention. Several baseline tests were done including brain scans and pre-intervention evaluations to determine any changes within the children. The research suggests that 8 to 12 weeks of musical interventions can alter intrinsic brain connectivity which correlated to parent-reported outcomes regarding social communication. In another study Salomon-Gimmon and Elefant explored the connection between improvisational music therapy and development of vocal communication in children with autism spectrum disorder. They reviewed several different patient groups, one which received music therapy once a week for 5 months, and other 3 times a week for 5 months, and a control group who received no music therapy for 5 months. Their findings concluded that, “the quality of vocal communication was seen, in most cases, to develop with the progression of the [music] therapy course” (Saloman-Gimmon & Elfant, 2019, p.184). They also saw a decrease in vocalizations that had little to no communicative value, such as self-stimulatory vocalizations in the students who received music-based intervention. This indicates that music intervention influences the number of communication attempts and the quality of the communication.

**Music Enhances Nonverbal Communication Skills.**

 Music therapy can reach students who do not vocally communicate and present them with a way to connect with those around them. A 1994 study completed by Cindy Lu Edgerton of Michigan State University investigated the broad effects of music therapy on communication behaviors of children with autism spectrum disorder. This study found that children with autism, “both the mute and the verbal children were the same as far as meaningful communication was concerned” (Edgerton, 1994, p.32) meaning that the level of communication between the two groups is similar post intervention. This indicates that therapists can use music to assist both groups. Those who are mute can develop communication skills, be that verbal or nonverbal. The verbal group can use music to develop meaningful and appropriate communication. Edgerton’s study suggests that as “musical vocal behavior gains so does nonmusical speech production” (Edgerton, 1994, p.57). These findings were supported by researchers Salomon-Gimmon and Elefant, as mentioned above. Music, in this study and in many others, served as initial communication. Participation in music also provided self-regulatory skills that allow people with autism to think clearly and communicate effectively. Researchers Baken et al. suggest that this is due to heartbeats, breathing, and other regulatory systems aligning with the rhythm of the music (Baken et al., 2008).

**Music Enhances Emotional Regulation and Communication**

 Communication of emotion and regulation of emotions can be challenging for people on the autism spectrum. Self-regulation requires individuals to be able to identify what they feel, the cause, and communicate a solution to remedy the issue. Therefore, it is important to discuss emotional identification as part of communication, which can be taught with music. In a study by Kopec, Hiller, and Frye, findings suggest people with autism generally rate positive valence of music the same as neurotypical peers yet, “showed significantly lower ratings of negative emotions in both the felt and perceived categories” (Kopec, Hillier, & Frye, 2014, p.440). This study provides insight into the processing of music and emotion within the mind of someone with autism. Since those with autism understood positive emotions as well as neurotypical peers they can focus therapeutic efforts on negative emotion identification. Teachers and therapists can use this information to structure emotion learning through music and help students identify negative feelings by association with musical aspects. Music teachers could spend time structures within music that indicate negative emotions and equate them to feelings. Once students can perceive those musical differences, it will be easier to understand emotional differences.

**Music Enhances Receptive Communication Skills.**

 Maintained attention is also a difficult task for people with autism. Attention has much to do with communication, especially considering that communication skills such as body language, receptive and expressive communication, and eye contact are associated with attention. Researchers Kim, Wigram, and Gold studied the effects of improvisational music therapy on the joint attention behaviors of people with autism. They suggest that therapists and educators can use improvisation to sustain the attention of students with autism because they are allowed to explore activities, sounds, or instruments that they prefer, rather than having to participate in a prescribed music intervention. Their participants were compared to a control group of students who were in play therapy. In the music intervention they worked on turn taking and eye contact. The overall results were, “in favor of music therapy over the play condition with toys in improving joint attention behaviors of the participants” (Kim, Wagwam & Gold, 2008, p. 1763). These findings indicate that basic communication skills and behaviors associated with attentiveness can be influenced by music interactions due to the communicative nature of improvision.

**Communication Benefits: Practical Applications.**

 The literature mentioned above provides several reasons to use music as an intervention on communication skills of those on the autism spectrum. Teachers and therapists could use this as advocacy material for inclusion of those on the spectrum in music. As indicated by Clements-Crotes and Yip, people with Autism tend to have some innate musical ability, which therapists and educators can use to their advantage. Leaning into this musical trait can bridge the gap in communication by starting with musical tasks that the students are immediately successful at and building them into communicative skills. Music can be used as the initial form of communication and then used concurrently with verbal and nonverbal communication. Those skills then can be applied into non-musical environments. This works because music participation helps develop neuropathways and strengthen already existing communicative connections, as suggested by the Sharda et. al.’s research.

Saloman-Gimmon & Elfant’s study suggests that music intervention can influence the number of communication attempts and the quality of the communication of those on the spectrum. By using musical instruments and rhythmic tasks teachers can practice skills needed for communication. Teachers and therapists can use whistles to prompt proper breath support for speaking. Additionally, they can use drums as a kinesthetic aid to break up words to the syllabic level. By practicing in this way students with autism can learn words and phrases that can then be transferred into their daily life. Giving students with autism the confidence to make communication attempts is the gateway to further meaningful communication and socialization.

By bridging the gap in communication skills, music teachers and therapists can begin to work on other social-emotional needs with students on the autism spectrum. Music participation can become a therapeutic outlet as well as emotional support. As suggested by Kopec, Hillier, and Frye, music interventionists can help those with autism to better identify and comprehend emotions. By teaching emotional understanding through music, teachers and therapists are giving people with autism the tools to help navigate difficult emotions and providing the opportunity of emotional independence. Once an individual is confident in their ability to self-regulate and advocate for their emotional or sensory needs, they will have the cognitive space to focus on other things such as school, work, speech, recreation or other broader goals like independence, life-skills, friendships, or relationships. Essentially, participation in music education has the potential to provide people with autism the regulatory skills that will open them up to other life opportunities.

Music participation, especially musical improvisation, gives those with autism an opportunity to express and communicate, which they might not be able to do otherwise. Music itself can become a communication tool. Interventionists can form a connection by following the lead of a person with autism and their musical desires. Once they establish foundational communication, teachers or therapists can model verbalizations, eye contact, or body language that the students can mimic and bring into other social opportunities. Music is a way to create that base level connectedness between the student, peers, and teacher.

Bakan et. al.’s research suggests a few ways to begin musical interaction with those on the spectrum. Among the most important are, “recognizing each child as inherently good and whole…let the children direct the course and flow of play, without judgement of its musical value or quality… accept and nurture the children’s expression and creativity” (Baken et al., 2008, p. 10). Their goal is to give students with autism the freedom to “say something” by providing a communal music experience; speech is not needed to have a musical experience. They conclude their report by suggesting there is always a connection to be made. At times educators or therapists must investigate the sound and silence of these children to, “hear what is being said and strike up a conversation”. These students can communicate; educators and therapists must decode the child’s attempts to communicate to initiate music and communication learning. Then, build off that communication into verbal and nonverbal communication skills.

**Conclusion**

Music is a “uniquely effective tool for treating neurological impairment because it recruits nearly every region of the brain” (Thompson & Schlaug, 2015, p. 34). Because of this, music is an effective therapy that is accessible to most everyone. Music is a physical, emotional, and engaging outlet. It enhances social atmospheres and helps students to synchronize and synthesis new information. Music is persuasive and personal. Everyone can benefit from music training since it can be highly personalized to fit any persons needs and capability. Using music as an educational or therapeutic tool has many possibilities for those on the autism spectrum. Communication benefits are not the only benefits. According to Clements-Cortes and Yip, music practice can benefit the overall scope of an individual, including “physical, emotional, cognitive, and sensory development” (Clements-Cortes & Yip, 2017, p.37). As said by Hansen and Bernstorf (2014), “Music reaches children at different levels, [and] thus it can promote a range of skills such as social and communicative interactions, motor skills, and self-expression”. In that way, music has the potential to be universally helpful, especially in the lives of people with disabilities.

**Recommendations for Further Research.**

Further research might consider looking into performance-based music classes, inclusivity, and the effect of music education in those settings on students with autism. There is very little research concerning secondary music and autism, and certainly less regarding performance-oriented classes. Additionally, research could focus of the social-emotional impact of music education on those with autism and their peers. Research could extend into the peer’s perception and feelings regarding inclusion in the arts or core subjects. Other research might focus on siblings of autism, their likelihood to use the arts as a creative outlet, and their perception of inclusion.

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