

Music and Emotional Expression in Students with Autism Spectrum Disorder

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Abstract

This correlational study is intended to determine how exposure and involvement in music (singing, listening to music or playing music) can affect the emotional expression of students with Autism Spectrum Disorder. Ten special education teachers and aides in the Conejo Valley Unified School District who work with elementary school and middle school students with Autism Spectrum Disorder were polled using an online survey. The survey asked the participants about their use of music in their classes when they have students with Autism Spectrum Disorder, as well as asking them to observe the amount of emotion expressed by those students with and without music. Among all the teachers surveyed, each one used music as a part of the class some time during the week. They also used music at different times during the day and various amounts of time during the week. All of the teachers had some difficulty understanding how their students with limited expressive language are feeling on a day to day basis. Most of the teachers discovered a difference in the amount of emotional expression that was shown by their students when singing, listening to, or playing music. All of the teachers who did see a difference saw that it was a significant increase in emotional expression in their students. Also, overall the special education teachers observed more emotional expression in their students with Autism Spectrum Disorder when they were singing, listening to, or playing music. This indicates that students with Autism Spectrum Disorder do show more emotion when exposed to music. This study is introducing how teachers have observed the correlation between exposure to music and emotional expression in their students in the classroom setting and why the teachers should use more music to specifically discover how their students are feeling on a day to day basis.

Introduction

Children with Autism Spectrum Disorder have often had trouble expressing how they feel to those around them. Autism Spectrum Disorder is a disorder that affects motor skills in the individuals affected by it. Although attempts have been made to help non-speaking or minimally speaking individuals with Autism Spectrum Disorder, such as using apps with text-to-speech capabilities, not much has been done to find ways to increase their level of emotional expression—how intensely they express how they are feeling—without using technology. While technology can be useful for helping individuals and children with Autism Spectrum Disorder express how they feel, some people may not have access to that. Music is known for helping people express how they are feeling and enhancing existing emotions. It has also shown that music can help children with Autism Spectrum Disorder with their communication skills and to recognize emotions. Many children with Autism Spectrum Disorder have also benefitted from music therapy in helping their communication skills.

This project was inspired by this past summer when I began to work at the Therapeutic Recreation Department of the Conejo Recreation and Park District. I had heard a lot about working with special needs kids since my mom has worked with special needs kids in schools, but I had never done it myself. Working summer camp was a handful at first, but as the weeks went on, I learned how to communicate with and understand minimally speaking campers. I learned how they express themselves and what different vocal inflections or hand gestures meant. But I noticed that certain things filled them with joy, such as watching Frozen and seeing Anna and Elsa dance around the screen, being pushed high in the swing, or singing/listening to music.

It never failed. Whether the campers were listening to Disney music or singing a simple camp song, they always expressed so much happiness and had a big smile on their faces. Throughout the rest of the summer, I observed to see if this was a continuous trend. And it was. Week after week, there was laughing and smiling and happiness whenever they sang or listened to music they knew.

It fascinated me that just singing/listening to music could increase their level of expressing joy or happiness. But I also noticed that if a camper was tired or grumpy, they would resist the singing, sometimes even more so than usual. They were sending the opposite message that they were not having a good day and didn't want to participate in the same morning circle song/activities they did every other day.

Just as music helps many people better express how they are feeling, I began to wonder if listening to different types of music could help the campers and other children with Autism Spectrum Disorder better express how they are feeling when they cannot verbally communicate it.

Music is often seen as a universal language. It can bring out emotions from all types of people who can feel the same thing from listening to a piece of music. But just as people use music to let others know how they feel, I began to wonder if children with Autism Spectrum Disorder, who often have trouble communicating how they are feeling to those around them, could likewise use music to better express themselves.

Prior research has shown that music and music therapy help children with Autism Spectrum Disorder in the areas of behavioral skills and emotional recognition. In her article "Music Therapy Shown to Help Children with Autism" Sima Ash writes that music therapy has

shown to reduce off task behaviors as well as vocal stereotypy, which is nonfunctional speech such as singing, babbling, repetitive grunts, and squeals. She also observes that the music used in therapy does not necessarily need to be classical music. It can be any kind of music that the child likes. She also notes that teaching children with Autism Spectrum Disorder to play an instrument, such as the piano, can help them process motor and sensory information. Music therapy has also shown to improve behavioral and communication skills as well as memory and learning ability.

In her article “Music Therapy May Help Children with Autism” Marcela De Vivo establishes that both children and adults with Autism Spectrum Disorder respond well to music and have benefitted from music in increasing social, emotional, and cognitive development. She first writes that music encourages social engagement. This is seen through a cited study where it was shown that children with Autism Spectrum Disorder showed more social engagement and emotional expression in music therapy session as opposed to therapy sessions without music. Music therapy can also help these kids learn to interact with other kids that may be in the session by encouraging the act of sharing. She also writes that music can improve behavior, as seen in a 2012 study that found that music therapy session improved overall behavior of children with Autism Spectrum Disorder, specifically in inattentive behaviors, such as restlessness and aggression. De Vivo also states that music can improve communication in the up to thirty percent of nonverbal children with Autism Spectrum Disorder. Finally it is written that music can reduce anxiety in children with Autism Spectrum Disorder. This is thought to be due to the predictability of the beat, especially in classical music.

In “Your Brain on Music Part 2: Autism, Music and the Brain,” Leslie writes about how music helps with learning and memorization because music involves the whole brain, which is why we do things like sing the ABCs to memorize them. Also, music stimulates the cingulate cortex and prefrontal cortex, both of which are involved with the processing of emotions. It also explains how music can aid learning and memory, musical training can help in restructuring the brain and communication, and music accesses the emotional centers of the brain.

In “Autism Disorder Research and Its Implications for Music Teachers,” Derek Polischuk writes about the different challenges that come along with teaching to a student with autism and how many teachers are not prepared for these challenges. He also provides methods of teaching such as the TEACCH method or the Wings Mentor program to assist teaching kids with Autism Spectrum Disorder. He also writes about the Behaviorist Theory and the importance of establish personal relationships as well as learning what pleases the student.

Julie Guy, in her article “Music Therapy and Autism Spectrum Disorders,” first gives an overview of what Autism Spectrum Disorder is, how many people are affected by Autism Spectrum Disorder, and the characteristics and needs of individuals with Autism Spectrum Disorder in the areas of cognitive skills, speech and communication, motor skills/sensory, and social/behavioral skills. She then elaborates on how music therapy addresses the cognitive skills, speech, motor skills, and social behaviors in children with Autism Spectrum Disorder and the positive impact music has on each of those categories.

In his 2011 study, Gustavo Gattino analyzed two groups of boys with Autism Spectrum Disorder or Asperger’s, one of which received music therapy for 16 weeks and one who did not, to see their verbal, nonverbal, and social communication. He used improvisational music

therapy and use activities such as singing, composing, improvisation, and musical games. The group that was given music therapy was shown to have better communication skills overall compared to the group that received no music therapy. They received a better score in the areas of verbal communication, nonverbal communication, and social communication.

As seen above, music has helped children with Autism Spectrum Disorder improve cognitive, social, and motor skills, as well as communication skills. But just as music has helped them better those skills, it can also help them better express their emotions. This study is to specifically analyze how much the level of emotional expression is increased when children with Autism Spectrum Disorder are exposed to different types of music. By discovering just how much of an effect music has on how much children with Autism Spectrum Disorder are able to express how they are feeling, we can use certain types of music to better understand how they are feeling. This can help teachers, parents, and others around children with Autism Spectrum Disorder have another way to better understand how they are really feeling although they may not be able to verbally express it.

Specifically in a school setting, teachers may be able to use music to have a better understanding of how their nonverbal or minimally speaking students are feeling. This will help them gauge how their students are feeling and how to appropriately respond during the day. For example, if a teacher discovers that a student is particularly having a bad day, due to a reluctance of usual joy, he or she can know how to better act towards that student for the rest of the school day.

Hypothesis

It is hypothesized that when students with Autism Spectrum Disorder are exposed to music in a classroom setting, they will begin to show more emotional expression. For example, when students are listening to upbeat, energetic music or music they like, they will begin to show more positive emotions, such as happiness and excitement.

Methods

Participants

For this study, a ten-question survey was created to collect data from teachers who work with students with Autism Spectrum Disorder (Autism Spectrum Disorder). The survey is aimed at evaluating the use of music in the classroom and how it correlates with the emotional expression of students with Autism Spectrum Disorder. Special education teachers, aides, and paraprofessionals from elementary and middle schools in Conejo Valley Unified School District and Pleasant Valley School Districts took the survey.

Procedure

The survey began by asking respondents if they use music in their classrooms and if so, how often—1-2 times a week, 3-4 times a week, every day, or other. This was used to see how often participants currently use music and how that may correlate to the amount of emotional expression they notice in their students with Autism Spectrum Disorder.

The second question asked if the participants used music, what time of day they did—morning, middle of the day, or afternoon. This question was used to gain insight into what time of the day was most common for teachers to use music in the classroom, if they use it at all.

This was used to find out if there is a connection with the emotional expression teachers are observing and the time of day music is played.

The following question, directed at teachers who do not normally use music in their classes with students with Autism Spectrum Disorder, asked how they seek to understand how their students with limited expressive language are feeling. This question was used to gain insight on other ways teachers understand how their students are feeling.

The next question asked if teachers have trouble understanding how their students with Autism Spectrum Disorder, who have limited expressive language skills, are feeling. This question was used to see if teachers initially have trouble understanding how their students are feeling on a daily basis. How students are feeling may influence their participation and ability to learn.

The next question asked teachers if they have noticed their students with Autism Spectrum Disorder showing more emotion while listening to music, playing music, or singing in an environment such as a music class. This question was used to see if teachers have noticed a difference in how much their students with Autism Spectrum Disorder express how they are feeling in a setting with music through actions, facial expression and/or vocally.

That question was followed by asking how much of a difference in emotional expression teachers had noticed in their students with Autism Spectrum Disorder during class, if they had noticed a difference. This question aimed to measure how much of an increase in emotional expression teachers have noticed in their students, if they have noticed any, during music classes.

The following question asked what kind of music the participants usually played during class for their students. This question was designed to gather data on what kind of music was

played to see if there is a connection between the type of music played and how much emotion students express.

The next question asked participants to describe how much emotion the majority of their students show without music, using a scale based on the amount of verbal, facial, and physical expression students with Autism Spectrum Disorder show on a regular basis. This question was meant to create a basis of emotional expression that the results of the following question can be compared to.

This was followed by asking how much emotion the majority of the participants' students show while singing, playing, and/or listening to music during class, using the same scale as the previous question. This was used to make the comparison of the amount of emotion expressed with and without exposure to music.

The final question in the survey asked in what type of activities the teachers usually play music. This was to see if there were similarities in activities where music is used during the school day and how students with Autism Spectrum Disorder respond to those activities.

Results

Based on the results, all the participants that responded to the survey used music in their class. While the majority (40%) used music everyday, the other 60% is evenly divided between 1-2 times a week and 3-4 times a week. The majority (50%) used music as a part of their morning, 40% used music sometime in the middle of the day, and only 10% used it at various times.

On a 1-5 scale of how often teachers have trouble understanding how their students with limited expressive language skills are feeling, 50% answered 3 and 50% answered 4. This shows

that teachers are having trouble understanding how these students are feeling, which could lead to miscommunication between the teacher and student.

Other ways that teachers have tried to understand how these students are feeling is through visual charts, hand signals, pictures, asking questions, and nonverbal cues.

Out of the teachers I surveyed, 70% saw their students with Autism Spectrum Disorder showing more emotions when listening to/playing music/singing, such as in music class.

On a 1-5 scale, 100% of teachers who did see more emotional expression in their students with Autism Spectrum Disorder said that it was a 4 out of 5.

On a 1-10 scale, as shown on the screen, teachers were asked how much emotion the majority of their students show on an everyday basis. 30% said 4, 40% said 5, and 30% said 10, showing that the majority of students with Autism Spectrum Disorder aren't able to fully communicate how they are feeling.

Using the same scale as the prior question, when teachers were asked how much emotion do the majority of your students show when singing/listening to/playing music, 10% answered 4, 20% answered 5, 50% answered 7, 10% answered 8, and 10% answered 10, showing that there is a difference in the amount of emotion expressed with and without music. More of the numbers were on the higher end of the scale (7,8,10) as opposed to the majority being on the lower end (4,5) in the previous question indicating that more emotion was expressed.

Also, teachers noted that most of their students respond best to children's music, calming music like that used in yoga, upbeat music, or *Disney*. They use them during activities such as reading, studying, or working independently.

Discussion

This study's original goal was to just find out if there was a difference in emotional expression in kids with Autism Spectrum Disorder, but it evolved into discovering if music could be used in a school setting for teachers to discover how their students with Autism Spectrum Disorder are feeling on a day to day basis. Through this research, many different things have been discovered about the correlation between exposure to music and emotional expression in students with Autism Spectrum Disorder and how teachers can use music in their classrooms to further understand how their students with limited expression abilities are feeling every day.

Through the literature that was read while researching this project, it was discovered that in an everyday setting with children with Autism Spectrum Disorder, music does in fact help to increase things like social interaction, cognitive function, and emotional recognition. Music was also proven to diminish the amount of off task behaviors and vocal stereotypy in children with Autism Spectrum Disorder.

This specific study was meant to focus on how music and exposure to music can be used in schools and classroom settings to give teachers a different way to better understand how their students with Autism Spectrum Disorder, or just students who have limited expression abilities, are daily feeling so they can adjust their teaching methods and attitudes towards those students accordingly.

First, through the questions on the survey the special education teachers took that asked about how much emotional expression students with Autism Spectrum Disorder show with and without music, it is shown that the students did in fact show more emotional expression when they were singing, listening to, or playing music. This is proof that music does bring out more emotion and that it can be used to find out how other people are feeling.

The majority of teachers have already noticed a difference in the emotional expression in their students with Autism Spectrum Disorder. And the majority of noticed differences were an increase in the amount of emotion expressed in those students. This further proves the claim seen in my literature that music is a useful method to better understand how students with Autism Spectrum Disorder are feeling.

Another aim of this study is to show teachers how they can implement music in their classrooms with students with Autism Spectrum Disorder. Through the survey used in this study and from prior literature written, it is shown that teachers can use music in various activities such as a part of their lessons, in a time such as morning or afternoon circle, or in the background during studying or independent reading time during the day. This is meant to encourage special education teachers to start using music in their classes with students with Autism Spectrum Disorder to try to better understand how their students are feeling on a day to day basis.

One limitation in this project was that it had a change in method very late into the research process. The original method was to conduct a music class with children with Autism Spectrum Disorder and first hand observe their emotional expression before the class and without music and compare that to the emotional expression during the class while the children were singing, listening to, and/or playing music. Due to not being able to get in contact with families who would allow their child to be apart of the study, the method of research was changed to conducting a survey with special education teachers and their aides. This also focused this project more specifically on emotional expression in children and students with Autism Spectrum Disorder in a school setting.

Due to a late method change in this project, only ten special education teachers in the Conejo Valley Unified School District were able to answer the survey. The results may have been more diversified and provided a wider scope of responses if there had been more teachers and a wider variety of teachers (elementary school, middle school, and high school) that responded to the survey. Also, changing the method to a survey added the factor of relying on the observations of that other special education teachers had of their students with Autism Spectrum Disorder instead of gathering that data and observing the students that have limited expression skills first hand.

Another limitation in this project is that certain types of music were not tested to see the individual effects on emotional expression, but rather just music in general was used. This project could have been more detailed if I had gotten more specific results of different types of music used to test the increase of emotional expression. That way special education teachers would have a better idea of what the best types of music to use would be to try to better understand how their students with limited expression skills are feeling. If this project were to be continued further, special education teachers would be asked to observe their students' emotional expression using different types of music.

In addition to using specific types of music to test the different emotional expressions in students with Autism Spectrum Disorder, if this project was to be continued, more special education teachers would be surveyed from various levels of education (elementary, middle, and/or high school) in order to see if that factor would have an impact of varying the results that were received. Also, a way the scope of this project could be broadened is by discovering other

ways teachers can seek to better understand how their students with limited expression skills are feeling.

The results seen in this study should prompt special education teachers to start using, or for those currently using music, to use more music in their classes with their students who have limited expression skills. It has been proven that music leads to increased emotional expression in individuals with Autism Spectrum Disorder, therefore special education teachers should utilize this knowledge to try to have a better understanding of how these students may be feeling and how to approach students individually based on the emotion(s) they are showing in class.

This project is significant because it gives special education teachers a way to discover how their students with Autism Spectrum Disorder are daily feeling. Being able to understand students and work with them are some of the most important things that come with being a teacher and being able to build relationships with your students. If special education teachers are provided with a way to better understand their students with limited expression skills, this could result in the teacher knowing how to approach teaching those specific students, which may vary on the individual, and that may lead to the students learning more and higher achievement as well as test scores.

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