

The Effects of Music on Students' Ability to Recognize Letters

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Abstract

The purpose for this study was to determine whether music influences a student's ability to recognize letters. For this study there was a null hypothesis, that there would be no statistically significant difference in the average number of alphabet letters that students would recognize before and after treatment with songs. The subjects of the study were students in an Early Childhood Intervention classroom aged three to four years old. The data was derived through checklists of the students being able to identify capital letters from a field choice of two.

CHAPTER I

INTRODUCTION

Overview

The problem to be studied is the impact of student engagement by singing and/or listening to music lyrics with pictures that relate to the alphabet on the ability of three and four year olds who receive special education services to name/identify letters. The background for the problem comes from the researcher working within an early childhood intervention class and seeing the need to find ways for students to be engaged in learning their letters. This is a pervasive problem because within the early childhood intervention classroom the students are learning pre-academic skills such as letters. Many of these students have a range of developmental delays that affects their ability to engage in the curriculum. The researcher's interest was triggered in this problem with a past student. This student came into class with very little language in both English and Spanish. The student was able to learn best through songs, and the class then applied these concepts across the school day to help him learn letters, numbers, colors, and other pre-academic skills.

Statement of Problem

The point of this study is to determine the impact on student engagement of singing and/or listening to music lyrics with pictures that relate to the alphabet. The purpose is to determine whether these approaches affect students' ability to name/identify letters. All the students currently present with special needs and struggle with learning. These students are currently working on the skill of being able to name/identify letters.

Hypothesis

The null hypothesis is that there will be no statistically significant difference in the average

number of alphabet letters that students will recognize before and after treatment with songs.

Operational Definitions

For this study, the independent variable was songs delivered by computer. This is measured by the list of songs that the students listened to during the study. The dependent variable is students' scores on alphabetic assessments from pretest to posttest. This will be measured by each student's ability name/identify from a field of two capital letters for all 26 letters using a checklist.

The working definition for music therapy as it relates to the research study is the use of music through sitting and listening to songs to support students' engagement during academic tasks. The music will be used to support the work that the students will be doing to learn the letter names. Similar to music therapy sessions, the study will involve songs that the students know and that will be repeated over the course of the study. However, unlike typical music therapy, during this study, the music will not be live with the use of a piano, guitar, or drums. Instead, the computer with both downloaded and Youtube songs will be used. During the songs, there will be pictures and/or letters on the screen projected from the computer. This study will be conducted in a group setting and not on an individual basis because of all the students will be working on the ability to name the letters.

The working definition for alphabetic knowledge as it relates to the research study is the requirement of naming/identifying letters from a field choice of two capital letters by pointing, naming, and/or word approximation. This is the first step in alphabetic knowledge, and it then aids the students in their ability to identify and make the sounds.

CHAPTER II

REVIEW OF THE LITERATURE

This review of the literature relates to music therapy, special education within early childhood education, and alphabetic knowledge. Section one provides a definition of music therapy. Section two explains special education involving early childhood intervention.

Music Therapy

Definition of Music Therapy

According to researchers Krikeli, Michailidis, and Klavdianou (2010), music therapy is a “systematic process of intervention wherein the therapist helps the client to prompt health, using music experiences and the relationships developing through them as dynamic forces of change” (p. 1). Music therapy can be conducted in groups or one-on-one, depending on the individual needs of the clients. Music therapy is very different from the general music teaching that occurs in schools. Music therapy focuses more on using music to symbolize growth with an individual’s emotional and personal states instead of a skill that is to be learned and then practiced. Music therapy is designed to promote clients’ ability to communicate as well as their expression when communicating, and their relationships and learning to support their emotional, mental, social, physical, and cognitive needs. The overall reasons that families look into having their child in music therapy is to prompt communication and relationship with their child. Music therapy is a current intervention that is being used to support students with special needs.

History of Music Therapy

Music therapy has been around for several years. The concept of using music for therapy was put into place in the years following World War II. According to Rickson and McFerran (2007), work was done through health teams and in several different settings such as special

education, nursing homes, psychiatric hospitals, and then general hospitals. The actual discipline of music therapy emerged more in the 1960s. Following, in the 1970s in the United States, more music therapists were employed in education settings and used to provide services to more school-aged children with special needs. This push to incorporate music therapy within the schools led to an increase in the numbers of therapists needed which, in turn, led to an increase in the research on the practice and what the benefits of music therapy are for students within the last two decades. The term *music therapy* has not been around for a long time, but the concept of music being used as a therapy tool has been around for centuries although used more in the religious world and in other ceremonies than in education.

Current Uses of Music Therapy

One current use of music therapy is to promote communication skills and relationships among students with special needs, and it has been found to be an effective intervention in this regard. Geist, McCarthy, Rodgers-Smith, and Porter (2008) state that “musical activities stress nonverbal forms of communication and often surpass physical, cultural, intellectual, and emotional limitations” (p. 312). Music therapy gives these students another means of communicating with parents and teachers for when they lack skills in the areas of verbal language and being able to express themselves. The actual music during the sessions is used as a way to communicate between the therapists and the student. The therapy helps students build meaningful relationships within their worlds. This is done when students work on the shared skill of making music with the therapist. Students who receive music therapy gain a skill that supports them both within the classroom and outside the classroom.

Music therapy is specifically a nonthreatening activity to engage with the students, and it takes place somewhere that is emotionally safe for the student. This could mean different

locations for each client. During music therapy sessions, the therapist uses live music and pictures to support the engagement of students in the activities. Along with the music being live, it can also be any type of music to control the environment. This also offers older children the ability to build relationships based off their preferences. Some examples of types of music that are used include classical, jazz, rock, and folk. Students are involved during the session through singing, playing instruments, listening, moving, and creating new music during the sessions. The skills that are worked on during any session are specific to each student. The sessions follow a structure to help create a safe environment, though they do allow for spontaneous development of improvisational activities as they arise with the student. The sessions should include a sequence of activities and songs that repeat over the course of several sessions because this builds on students' ability to communicate the songs. The songs should be familiar when they are being used during a session. During the sessions, therapists can use different instruments to help support the live music such as the piano, drums, and guitars. To aid with building relationships, the students' activities used during the session should include turn taking activities which leads to sharing. This can happen in the group session with other students or in the one-on-one session with the therapist. The therapist needs to give the directions for the all the activities including listening ones in very short and clear instructions to support each student's ability to comprehend the directions and communicate with the therapists.

Domains that Music Therapy Supports

Music therapy helps students who lack the skills in the areas of motor skills, communication skills, socialization, and cognitive and musical response. As stated above, music therapy is used by therapists to build and support communication along with social skills to support students (Simpson & Keen, 2011). Rickson and McFerran (2007) report that music

therapists are able to take data during their session in the areas of motor skills, communication skills, socialization, cognitive skills, and musical response. All of this data that the therapists take during sessions can give a different picture of the student in the music therapy environment than in their other environments throughout the day. Rickson and McFerran found that students will show a higher level of responses during music therapy sessions than the kind of response that they would give during a classroom experience or speech session.

Music therapy helps to address psychological areas with students because during the session the therapist is able to work on emotions, leading to the students' "sense of identity, self-esteem, and expression of emotions such as frustration, anger, loss, and fear" (Rickson & McFerran, 2007, p. 41). Young children's emotions tend to lead into multiple areas of their development. Emotions can come out through behaviors during activities when therapists are working with students. It is important that clients have a good understanding of their identity, self-esteem, and ability to express their emotions which music gives the students ability to relate to this.

Special Education – Early Intervention

Definition of Early Intervention

Early intervention within special education includes services that are provided to children who are younger than school age. According to Darrow (2011) "Early intervention is the process of providing services, education, and support to young children who have disabilities or to children who are at risk of developing needs that may affect their physical, cognitive, or emotional development" (p. 1). The intervention is put in place to support the student in five areas of need: communication, and cognitive, social, emotional, physical, and adaptive skills. These are all areas in which young children can have delays that would require them to receive

support through early intervention. The early intervention model comes out of the Individuals with Disabilities Education Act (IDEA) and falls under Part C which deals with intervention programs for infants and toddlers with disabilities which was established in 1986. Specifically, early childhood special education is for three, four, and five-year olds who have disabilities that require special education services. The hope is that having these students receiving services at a young age will support their development in the learning domains. The other idea is to support the family and to assist children in gaining skills that they will need to rely on as they get older.

Inclusion for Special Education

The term inclusion has been around since the mid-1980s. The concept means that all students are included with same-age peers within general education settings (Scott, 2016). Inclusion is thought of to be a placement within a school; however, it is more integration within the classroom to meet the student's needs within the general education classroom. In the state of Maryland within the early childhood special education world, this means that many students receive their services within their preschool settings so that they are with their same-age peers. Many students are seen within small groups at a center for a short period of time, and sometimes these groups will include same-age peers who do not have disabilities. Another group within the population because of their significant needs may be placed into a specific early intervention class, and their access to same-age peers may be limited. Nonetheless, some do get to spend time with same-aged peers through having peer partners and having a Pre-K class at the school where the children can spend some time or see these peers throughout the day.

Music Therapy within the Early Childhood Setting

Implementing music therapy within early childhood education settings is a very simple. So many early childhood settings sing songs, and students repeat the songs over the course of a

day or a week. It is a simple fact that music gives teachers and therapists an opportunity for children to have repetitive practice that is done in a more natural way than doing any other activity repeatedly. Within the early childhood setting occurs the teaching of many pre-academic concepts such as shapes, colors, numbers, spatial relations, and temporal relationships. According to Darrow (2011) educators can teach and reinforce all of these preschool concepts through activities that involve music and, additionally, by the songs themselves. Music can be a great motivator for students to learn concepts. When music is used within the classroom, it can also have an effect to “induce mood change and relaxation in young children who are anxious or upset” (Darrow, 2011, p. 29). Darrow makes another point about music within the early childhood setting, arguing that music is so important when teaching young children and “especially young children with disabilities who may have limited opportunities for socializing with others, have a greater need for repetition and motivation, and have increased options for learning.” (p. 30). It is imperative that music be incorporated into the early childhood setting for any student but even more importantly for the classrooms that include students with special needs.

Specific Disabilities that Music Therapy Helps

There are several specific disabilities that music therapy can help with. Those disabilities are autism, communication disorder, developmental disorders, developmental dyslexia, Down syndrome, intellectual disabilities, and Rett syndrome.

Autism. Hourigan and Hourigan (2009) define autism as a “complex developmental disability that typically appears during the first three years of life and is the result of a neurological disorder that affects the normal functioning of the brain” (p. 40). Autism is a spectrum disorder, and it is one of five under the umbrella of pervasive developmental disorders.

The five disorders are autism disorder, Asperger's disorder, childhood disintegrative disorder, Rhett's disorder, and pervasive developmental disorder not otherwise specified (PDD-NOS). It is a disability that affects young children, and they will start to show signs around 18 months of age. It affects both male and females. Students with autism disorder usually have delays and difficulties in the areas of communication, will be unable to respond to verbal cues, will have sensory concerns, may not make eye contact, do not like change, and will be self-motivated. They also have different types of repetitive play, such as lining toys up, and they also repeat words and phrases that they hear from shows or other people. Students who have an autism disorder are eligible to special education services. It is a growing disability with more children being diagnosed every year. The diagnosis has increased significantly in the last ten years.

It has been found that early intervention can help students with autism. According to Rickson and McFerran (2007) "Music therapy is frequently used with children diagnosed with Autism Spectrum Disorder (ASD) and has been the focus of many quantitative investigations continuing into the current century" (p. 43). The therapy helps students with autism build upon their communication skills. Music therapy can also be helpful because of the repetitive nature of the therapy which helps students with autism because they are so routine-based. Visuals aids support students who have autism because that allows them to pair words with pictures.

Communication disorders. Some children present with communication disorder, an impairment in the ability to receive, send, process, and comprehend concepts. This difficulty can be verbally, nonverbal, and with symbols. It can involve hearing, language, and/or speech. Students who have communication disorders can present with one or any combination.

Developmental disorders. Developmental disorders can range and include several different disorders. A developmental disorder diagnosis is given to a young child who shows

delays in development in multiple areas. It can be comprised of language, learning, fine or gross motor, and even autism spectrum disorders. Developmental disorders present when the child is younger. As most children get older, their delays will improve, and they could possibly need fewer services. Developmental disorders can also continue through adulthood.

Dyslexia. Dyslexia is a reading disorder that affects children and adults. People who have dyslexia have normal intelligence but have trouble with reading. There are three forms that dyslexia that affect people: developmental, primary, and trauma. Students who are included in inclusion classes have a form of dyslexia that is typically developmental. Developmental dyslexia is a learning disorder, and, given the proper supports, students are able to function within an inclusion class. Trauma and primary dyslexia are caused by trauma to the brain, and the person has lost the ability to read. Dyslexia is diagnosed when students are in the upper elementary years or older. Within the early childhood grades, most students are not diagnosed as having dyslexia. They might show signs, but as a whole, everyone in those grades is learning to read.

Down syndrome. Down syndrome is a genetic disorder that affects individuals. They have an extra copy of chromosome 21. Down syndrome is able to be detected during pregnancy through screening. It is also able to be identified after birth by direct observation and genetic testing. It can occur in children of parents of any age, but there is a higher chance of having a child with Down syndrome the older the mother is. According to Pienaar (2012), Down syndrome causes intellectual disabilities that can be mild to moderate. Individuals with Down syndrome have difficulties with learning and language skills. Their abilities can differ from individual to individual. Individuals who have Down syndrome can have other health concerns. Children who are diagnosed with Down syndrome often start receiving services at a very young

age. Most start receiving services as an infant and continue services through school. Because of the varying levels of their skills, some students with Down syndrome are able to be included in inclusion classes whereas others need more support by being in separate classes for parts of the school day.

Specific Areas that Music Therapy Helps

Attention. Music therapy helps to support students in the area of attention. Schwartzberg and Silverman (2016) found that when books were introduced with music that children included in the experimental group were able to maintain a higher level of attention during the song than those in the control group. These students were maintaining attention through eye contact and participation. Joint attention is a skill that students on the autism spectrum are lacking in, and this affects their social skills. Joint attention involves all verbal and non-verbal social skills such as eye gazing and facial expressions. There are two different levels of joint attention. Low joint attention involves acts such as eye contact. High joint attention involves behaviors from the student such as pointing. Music has been shown to be effective in increasing students' ability to maintain joint attention and helping to move their attention from a lower level to a higher level.

Auditory short-term memory. Auditory short-term memory can be aided by music therapy given to students with Down syndrome and students with Autism Spectrum Disorder (ASD). Students who have Down syndrome have poor auditory short-term memory skills, and music can help these students retain their memories and build their language development. Schwartzberg and Silverman (2016) state that comprehension and memory are both cognitive skills, though they are two separate types but also related to one other. Music has been found to help build students' memory skills and also provide students with a better understanding in order to comprehend what is being read.

Behavioral issues. Students who have music therapy are able to gain skills in the behaviors, as well. Music therapy can work on socialization skills. The therapy is used as a motivation to engage the students to support positive behaviors because children who are more engaged and motivated are less likely to demonstrate problems within school. There have been several studies that looked at how music used as a therapy or an intervention helps to “develop socialization skills in children with autism” (Simpson & Keen, 2011, p. 1510). Therapists use music to help regulate students’ behaviors. Through the use of songs, students will sometimes have a decrease in inappropriate behaviors, or they will start to have a more appropriate behavior that replaces the inappropriate behavior.

Cognitive ability. Music activities such as music therapy are able to support students’ cognitive ability. “Music can be used as a carrier of information, or as a reinforcement, for learning academic materials” (Darrow, 2011, p. 28). In the early childhood setting, music is able to be incorporated into circle time and work on preschool academic concepts. These concepts can include colors, numbers, letters, shapes, and others basic preschool concepts. These concepts are all considered rote concepts but lead into many other academic areas as the students get older.

Communication skills and speech and language. Many students who are receiving early childhood special education supports lack skills in the area of communication, either involving speech or language skills. With music therapy, they are able to work on those communication skills and build on their level of communication. They are able to build language development and also social communication skills. The use of music makes it easier for students to join in on the communication. When students have delays in the area of communication, they can benefit from the use of visual aids, such as Picture Exchange

Communication System (PECS) or core vocabulary. According to Geist et al. (2008), “speech – language pathologists (SLPs) and music therapists (MTs) are diligently working to improve techniques to address the varied and sometimes complex communication and educational needs of children with disabilities” (p. 311). This is to include the use of visual aids, Picture Exchange Communication System (PECS) or core vocabulary. Both have a word and picture on the card to support the student. Core vocabulary is a small set of simple words that can be used across the school day for any activity. PECS have a larger library of picture and helps students to communicate through the pictures. PECS can also be used with a first/ then board or a schedule to support the student during music therapy so they know what will be happening next. Both core vocabulary and PECS can be used during music therapy to support the songs that are being used during the therapy. Music therapy supports communication skills across the board and can lead to students being supported in other areas of need.

Motivation. Music can act as a great motivator for all learners even if they do not have special needs. Many people listen to music to calm themselves and to support them when they are completing work. That same concept applies to students of all ages. During music therapy, students can be introduced to instruments and songs that they like to help support their motivation to complete the therapy. Just like with cognitive ability, music therapy enables an instructor to incorporate songs that the student likes that work on pre-academic concepts. Music therapy is “widely used in the treatment of children with autism, is gaining growing recognition as an effective intervention addressing fundamental levels of spontaneous self – expressions, emotional communication and social engagement for individuals with a wide range of developmental disorders” (Kim, Wigram, & Gold, 2009, p. 390). The social engagement allows the students to be motivated to communicate with the music therapist. Many of these songs, such

as “Head, Shoulders, Knees, and Toes” lend themselves to adding in motions that support students’ sensory system. All of this varied instruction gives students more motivation to participate during the song because they are able to move more. Music therapy is a structured activity, but it brings in a motivational element while students are working on academic tasks.

Motor and sensory-motor issues. Music therapy can be used to support students’ motor and sensory-motor development. During therapy, students are asked to actually perform movements with the songs that are to be done together as a group. Music can help students relax during the songs. Similarly, music can distract students who otherwise might be in pain because of motor movements that are being asked of them. During music therapy, students may move during songs whereas in other parts of the day they may be more inclined to sit still. It could also mean that some students who do not fully stand on their own are more willing to stand longer and/or pull themselves up to standing so that they can dance with their peers to the music. When students are asked to sing a song and do motions to the song, this involves a lot of motor planning on their part to be involved and to participate in the song.

Self-regulation skills and social-emotional skills. Through music therapy, instructors are able to support students’ emotional growth. With songs that talk about emotions and go through the different emotions, teachers can involve the student in making the facial expressions. When working on self-regulation and social-emotional skills with children, music therapy can support the development of socialization skills. According to Vist, (2011) “music can be seen “as a way of capturing feelings, knowledge about feelings, or knowledge about the form of feeling” (p. 278). Self-regulation skills lead to students being able to attend more and have improved behavior during activities within the school day. When they are properly taught, students will be able to self calm through the use of music.

Conclusion

Within the world of music therapy there are several considerations that need to be included when thinking and planning on how to incorporate it into the classroom. Music therapy has evolved over the years as the need changes. The current use of music therapy is with special education students. The disabilities that music therapy can support include autism communication, developmental delay, and Down syndrome. Music therapy supports students in the areas of attention, self-regulation, motivation, motor, behavior, cognition, communication, and auditory short-term memory. Music therapy can be used within the early childhood intervention classroom to help students learn pre-academic concepts.

CHAPTER III

METHODS

Design

This project used a quasi-experimental design. The students were given a pretest and then presented with daily treatment each week. The students then had a check-in point that was given on the first day of each week. The students were then given the posttest at the end of the study. The study was run from September 10th – October 8th. The independent variable for this study is student engagement in songs, and the dependent variable is students' ability to name/identity letters from a field choice of two of the 26 capital letters of the alphabet. One constraint is some students' motivation to complete academic work.

Participants

The participants of this research study were all in an afternoon Early Childhood Intervention class during the 2018 – 2019 school year. There were eight students selected for the study out of a possible 11 students. All students who were selected started school from the first day, September 7th, during the 2018 – 2019 school year. Within the group, there were seven males and one female. Six out of the eight students attend school five days a week. The other two students attend school three days a week. Seven out of the eight students are Caucasian, and the other student is African American. The age of the students ranges from three to four, with four students being four years old, two students being three years old, and two students turning four years old during the middle of the study. All students in the group have a disability. Six of the students have the disability code of Developmental Delay, and two students have the disability code of Autism.

Instrument

The instrument used during the study consisted of a computer for access to Youtube and downloaded songs from Youtube. The checklist data sheet was created to allow for a check mark to be placed by each letter. The students were shown cards during the data collection that had two capital letters per card and then students were asked to point to a certain letter. This test has not been normed but has been used within the classroom to keep track of the letters that each student knew.

Procedure

The students were given the pretest on September 10, 2018. They were given weekly check-ins on September 17, September 24, and October 1. They were given a posttest on October 8, 2018. During daily circle time, the students watch songs through downloads and Youtube. The students watch songs from Pancake Manor, Super Simple Songs, Kids TV, Have Fun Teaching, and Sesame Street. The titles of the songs that they watch ranged from the whole alphabet songs to specific letters that were a part of the curriculum for each week. The students were instructed to listen to and sing along with the songs. During the pretest, weekly check-ins, and the posttest, the students were shown cards with two letters on each and were told to point to/touch a certain letter (Ex. "Identify letter X." The two letters are X and Y. The directions ask for students to point to or touch X.). The students were in a large group during circle time and then pulled individually during centers or table time to complete the pretest, check-ins, and posttest.

CHAPTER IV
RESULTS

The purpose of this study was to investigate how music can impact early childhood intervention students' ability to learn letters of the alphabet. The independent variable was songs delivered by computer. The dependent variable was students' score changes on alphabetic assessments from pretest to posttest. After four weeks of music intervention, the null hypothesis was supported even though the mean alphabetic assessment score improved from 21 to 24 with $p=0.06$ (Table 2). Figure 1 shows the weekly score changes for each student who received music intervention, and Table 1 shows the score changes from pretest to posttest. All but one student who did not scored 25 or above on pretest had improvements from pretest to posttest..

Figure 1

Weekly Score Changes for Each Student

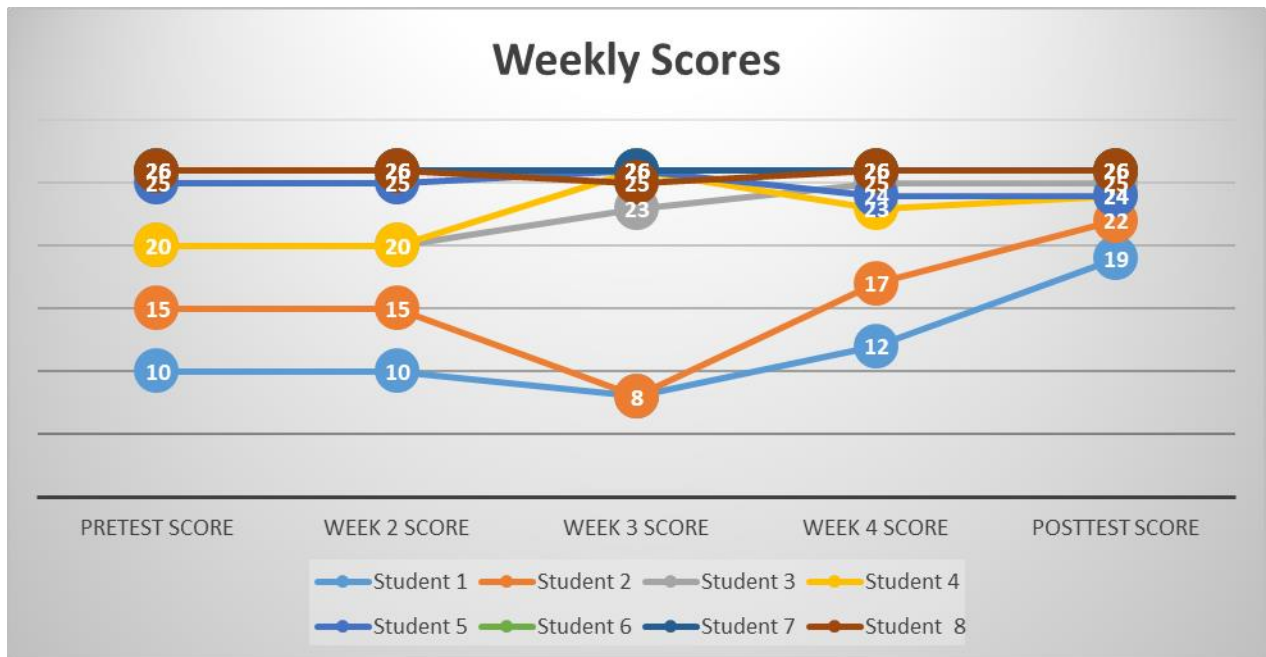


Table 1

Pretest and Posttest Score for Each Student

Participants	Pretest Score	Posttest Score	Growth
Student 1	10	19	9
Student 2	15	22	7
Student 3	20	25	5
Student 4	20	24	4
Student 5	25	24	-1
Student 6	26	26	0
Student 7	26	26	0
Student 8	26	26	0
All Students	21	24	3

Table 2

Comparing Average Pretest and Posttest Scores

Paired Samples Test					
Posttest Score – Pretest Score	Mean difference between Pretest and posttest Scores	Std. Deviation	t	df	p value
	3	3.78	2.245	7	0.060

The average posttest score is higher than the average score of the pretest. However, since $p=0.06$, the difference is not statistically significant at 0.05 level.

CHAPTER V

DISCUSSION

The purpose of this study was to determine whether the incorporation of music would increase early childhood intervention students' ability to learn letters of the alphabet. The study utilized a quasi-experimental design, which consisted of a pretest to determine a baseline for students' recognitions of alphabetical letters, a weekly test to check students' improvement, and a posttest to evaluate students' growth at the end of musical treatment.

The null hypothesis was that there would be no statistically significant difference in the average number of alphabetical letters that students could recognize before and after the treatment. The null hypothesis was supported using the pre/post-score comparison.

Implications of Results

The results of the study indicate that music therapy using a computer approach may result in improvement in early childhood intervention students' ability to recognize and accurately read letters. For the four students who scored less than 25 out of 26 on the pretest, the lower their beginning scores were, the higher the gains that students received. For the student who scored 25 out of 26 on the pretest, the posttest score was one point below his pretest score which can be due to his inattention and lack of engagement in the posttest. For the three students who scored 26 out of 26 on the pretest, their posttest scored remain high at 26 out of 26.

Threats to Validity

There are many variables other than the beginning level that many influenced the results. Potential factors include school attendance, family involvement, time the tests were taken, students' behavior, and past school experiences. All of the students in the afternoon class have good attendance records.

The time the tests were taken was during highly preferred activities that the students would miss for a couple of minutes due to testing. The tests were taken during table time and centers/small group time during the afternoon. Table time is the first activity when the students come in and centers/small group is right before snack, so this could affect their mood if they are hungry. All these students like the free play that happens during this time of day. This could affect their behavior if they are unmotivated and less willing to complete the test.

Another factor is that five out of the eight students have attended an Early Childhood Intervention class for the complete 2017 – 2018 school year. One of these students attended the program at another school with a different teacher and the other four within the study classroom. The last student in the group of eight joined the class during October 2017. Two of the other students out of the eight joined the class during January 2018. This would mean that they could possibly have had less prior exposure to the alphabet.

Relationship to Previous Literature

Music therapy helps students who lack the skills in the areas of motor skills, communication skills, socialization, cognitive, and musical response. Rickson and McFerran (2007) reported that music therapists are able to take data during their session in the following areas of motor skills, communication skills, socialization, cognitive skills, and musical response. All of this data that the therapists take during sessions can give a different picture of the student in the music therapy environment than in their other environments throughout the day. It has been found that students will show a higher level of responses during music therapy sessions than the kind of response that they would give during a classroom experience or speech session.

Implications for Future Research

There was not much research on the topic of the incorporation of music for early childhood intervention students with special needs. There was information on how music could support students with special needs but not at this young age. Findings from this study suggest further research on larger population samplings over a longer period will help us to better understand the impact of music on students' learning. The study could have included other forms of delivery of music therapy such as live music with the use of drums, piano, and guitars. This extended time with more students will offer more in-depth research findings.

Conclusion

Although not statistically significant at 0.05 level, the results show that incorporating songs can help early childhood intervention students to learn letters. Students express their learning and process information very differently. More studies should be conducted with young learners to help teachers determine how best to use various music therapies based on their students' learning styles. Besides academic influences, studying the impacts of music on students' behavior is also recommended.

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