

5-2021

IMPROVED WORD READING EXPERIENCES OF YOUNG CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD) WHO PARTICIPATED IN SINGING ACTIVITIES: A SYNTHESIS OF QUALITATIVE RESEARCH

Robin Rosezel Porter
California State University - San Bernardino

Follow this and additional works at: <https://scholarworks.lib.csusb.edu/etd>



Part of the [Special Education and Teaching Commons](#)

Recommended Citation

Porter, Robin Rosezel, "IMPROVED WORD READING EXPERIENCES OF YOUNG CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD) WHO PARTICIPATED IN SINGING ACTIVITIES: A SYNTHESIS OF QUALITATIVE RESEARCH" (2021). *Electronic Theses, Projects, and Dissertations*. 1244.
<https://scholarworks.lib.csusb.edu/etd/1244>

This Thesis is brought to you for free and open access by the Office of Graduate Studies at CSUSB ScholarWorks. It has been accepted for inclusion in Electronic Theses, Projects, and Dissertations by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

IMPROVED WORD READING EXPERIENCES OF YOUNG CHILDREN WITH
AUTISM SPECTRUM DISORDER (ASD) WHO PARTICIPATED IN SINGING
ACTIVITIES: A SYNTHESIS OF QUALITATIVE RESEARCH

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
in
Special Education

by
Robin Rosezel Porter

May 2021

IMPROVED WORD READING EXPERIENCES OF YOUNG CHILDREN WITH
AUTISM SPECTRUM DISORDER (ASD) WHO PARTICIPATED IN SINGING
ACTIVITIES: A SYNTHESIS OF QUALITATIVE RESEARCH

A Thesis
Presented to the
Faculty of
California State University,
San Bernardino

by

Robin Rosezel Porter

May 2021

Approved by:

First Reader, Dr. Gregory Richardson

Second Reader, Dr. Marc Fudge

© 2021 Robin Rosezel Porter

ABSTRACT

Research in special education has shown an increase in reading difficulties of children with Autism Spectrum Disorder (ASD) within the last ten years. Reading difficulties include challenges in word reading experiences, such as decoding, syllabication, and phonological awareness.

Several reading interventions help children with ASD improve reading difficulties. Such reading interventions include but are not limited to priming with visual supports (VS) and pre-teaching vocabulary. However, during the performance of reading interventions for children with Autism, behavioral support is an issue. Behavioral support has included significant prompting and redirecting.

Furthermore, children with ASD have not shown full engagement during the process of reading instruction. They have demonstrated improvement in reading ability but not the joy of reading.

Addressing difficulties in the early stages of reading for young children is essential for future success in more complex reading skills. One crucial reading skill is to read with understanding, known as reading comprehension.

The purpose of this research is to describe, through a meta-synthesis of qualitative research, how singing activities can assist the implementation of early literacy instruction for children with ASD.

The findings within this research are described from several case studies. This research shows the significant benefits of an alternative approach to

traditional reading interventions. Through implementing singing activities and reading instruction, the benefits have led to the considerable improvement of word reading experiences for young children with ASD.

Keywords: Autism, Autism Spectrum Disorder (ASD), Music Interventions, Music Therapy, Early Literacy, Word Reading

ACKNOWLEDGMENTS

I want to thank Dr. Richardson for his guidance and feedback while completing this thesis. His encouragement towards my writing in research has been a motivation to do my best work.

Also, I am inspired by the support Ms. Bradley has dispensed me during the challenging moments of this endeavor. Her tireless work as a liaison between the College of Education Special Education Department and myself has been incredible.

DEDICATION

To my mother for her support in my journey as a researcher. Her optimistic energy has carried me through the most challenging of days. I also want to thank my late great-grandparents, who inspired me to read and find answers to the difficult questions of education and life. Your light continues to shine. This research is to evoke thought in individuals who seek alternate approaches to literacy development for young children.

TABLE OF CONTENTS

| | |
|--|-----|
| ABSTRACT | iii |
| ACKNOWLEDGMENTS | v |
| LIST OF TABLES | ix |
| CHAPTER ONE: BACKGROUND | 1 |
| Introduction..... | 1 |
| Problem..... | 2 |
| Purpose..... | 3 |
| Research Question..... | 4 |
| Background Research..... | 4 |
| CHAPTER TWO: LITERARY REVIEW | 7 |
| Case Studies..... | 7 |
| Summary..... | 12 |
| CHAPTER THREE: METHODOLOGY | 14 |
| Research Design..... | 14 |
| Research Method..... | 15 |
| Criteria of Meta-Synthesis of Research | 15 |
| CHAPTER FOUR: FINDINGS | 17 |
| Introduction..... | 17 |
| Kehasuwan’s Study | 17 |
| Vaiouli’s and Friesen’s Study..... | 18 |
| Vaioluli’s and Ogle’s Study | 18 |

| | |
|--|----|
| Fong and Lee’s Study..... | 19 |
| Summary | 20 |
| CHAPTER FIVE: DISCUSSION | 23 |
| Introduction..... | 23 |
| Limitations | 25 |
| Recommendation for Future Research..... | 25 |
| Conclusion..... | 26 |
| APPENDIX A: CALIFORNIA SCHOOLS WITH MUSIC-BASED INTERVENTIONS FOR CHILDREN WITH ASD | 29 |
| APPENDIX B: INSTITUTIONAL REVIEW BOARD APPROVAL FORMS | 32 |
| REFERENCES..... | 34 |
| FOOTNOTES | 41 |

LIST OF TABLES

| | |
|--|----|
| Table 1. Qualitative Research Articles of Case Studies of Children with ASD..... | 21 |
| Table 2. Examples of 3 Institutions in California that Provide Music Interventions for Children with ASD..... | 24 |

CHAPTER ONE

BACKGROUND

Introduction

Autism Spectrum Disorder (ASD) or Autism refers to a neurodevelopment disorder characterized by social communication and social interaction difficulties. Also, characteristics of children with ASD include behaviors of restricted and repetitive patterns in personal interests and activities (CDC, 2020). Children with ASD may demonstrate symptoms associated with emotional and behavioral problems, such as anxiety, depression, hyperactivity, and inattention (Tsai et al., 2020).

Various symptoms of ASD appear early in a child's development and can affect daily functioning (CDC, 2020). For example, children with ASD are prone to difficulties in organization, memory, and time management. Also, transitioning to other events or environments that are less desirable or familiar can be difficult. As a result of daily functioning issues, these difficulties often contribute to learning challenges, such as writing and reading comprehension (Nation et al., 2006).

Reading comprehension involves the development of complex cognitive skills. Such complex skills include sustained focus, the ability to acquire background knowledge, application of standard vocabulary, and inference (Elleman & Oslund, 2019). Reading is essential in the early learning stages of young learners. It is the building block towards language, vocabulary, and writing

skills (Pang, 2003). Early literacy skills are a part of word reading experiences that predict reading comprehension success later in a child's education (Gersten et al., 2017).

Early literacy is the developmental process that begins at birth in which children acquire the foundation for reading, writing, verbal language, and communication skills (Goldstein, 2011). During this early period of reading development, as children participate in everyday life activities, they are exposed to sounds, vocabulary, and concepts of text or print within their environment (Goldstein, 2011; Whitehurst & Lonigan, 1998).

As a response to reading challenges, several interventions has been developed within the last 35 years to address the reading deficiencies of children with ASD (U.S. Department of Education, 2010). This has been particularly evident in early literacy curriculums. Early literacy curriculums has utilized effective strategies in reading interventions. Two strategies of significance has included priming with visual supports (VS) (Hume, 2013) and pre-teaching vocabulary (Gately, 2008). These strategies have helped in building background knowledge for students with ASD (Nguyen et al., 2021).

Problem

It is evident from research that challenges in reading for children with ASD have led to several effective reading interventions in the last 30 years (Stanberry, 2021). Yet, studies have shown that children with ASD have also required, in

most cases, the need for additional supports during reading interventions. Other supports have included behavioral intervention plans (BIP) to address behavioral issues, including inattention, lack of motivation, and lack of engagement during reading intervention activities (Kehasuwan, 2015).

Kehasuwan (2015) adds that as a consequence of behavioral challenges during reading interventions, children with ASD need significant prompting, redirecting, and motivation to participate in reading activities. Evidence reveals that children with ASD show these same behavioral challenges when transitioning from preferred activities, such as free play, to non-preferred activities, such as reading instruction (Vaiouli & Ogle, 2015).

Purpose

This research aims to show the significant benefits of implementing singing activities into early literacy development. Singing activities refer to singing songs or moving to songs while singing (Vaiouli & Ogle, 2015). Furthermore, this thesis aims to reveal how singing activities have improved word reading experiences for children with ASD.

The meta-synthesis of qualitative research within this thesis intends to evoke awareness in professionals who support children with ASD. These professionals include but are not limited to general and special education teachers, psychologists, researchers, and support staff that help children with learning disabilities in reading. Exceptional education professionals can decide

how to utilize the information from this meta-synthesis within their particular area of work or specialty. For example, general and special education teachers may design a reading curriculum that implements a music intervention. Music interventions include singing and other musical activities to support reading challenges for students with ASD (AMTA, 2021).

Research Question

There exist several problematic behaviors of children with ASD. Such challenges include transitioning to less preferred activities, which can interfere with reading skills development. Less preferred activities include word reading. Studies show basic word-reading is necessary for developing reading comprehension later in a child's education (Kehasuwan, 2015). The challenges encountered in early literacy by children with ASD render the question: How can singing activities, emphasizing reading skills development, support improving word reading of children with ASD?

Background Research

Research has shown that music positively affects reading and pre-reading skills in children (Standley, 2008). Several methods that use activities of singing prove effective in accessing reading challenges. Such interventions include

music instruction created from Kodaly and music therapy¹ that emphasizes reading (Kelly, 2021).

Kodaly's music instruction refers to a teaching method based on essential elements such as singing, solfege², and folk music (OAKE, 2021). The Kodaly Concept teaches literacy through the use of folk music (Dunbar & Cooper, 2020). Folk music, another form of music instruction, involves singing songs that teach valuable reading skills such as decoding. This "music message decoding" relates to how children decode in the written language (Choksy, 1999).

Singing is one musical therapy used to improve reading skills in children with various learning disabilities (Kelly, 2021). The research has shown that educators can use different pre-composed songs to promote early literacy skills that are engaging and joyful for children with ASD (Hallam, 2010).

The inclusion of music activities, like pre-composed songs and singing with an early literacy focus, can provide opportunities to address specific learning goals. Also, music activities can scaffold children into participating in learning and help children experience success within a child-centered and playful setting (Yopp & Yopp, 2009). As children become more familiar with the lyrics of different songs, their teacher can lay the foundation for introducing more complex reading concepts that are code-based and meaning-focused (Goldstein, 2011).

¹Music Therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a credentialed professional's therapeutic relationship (AMTA, 2021).

² Solfege refers to the study of singing and musicianship using solmization syllables (Oxford, 2021).

Children with learning needs can also learn complex reading concepts such as phonological awareness.

Phonological awareness (PA) is the foundation to learning to read that involves recognizing and working with sounds in spoken language. PA consists of choosing rhyming words and counting the number of syllables in a word by clapping them for early learners. When children identify the number of syllables in words through clapping, they can develop the skill to break words apart into single syllables by listening to them (Johnson, 2021).

Also, according to Johnson (2021), PA consists of several techniques. One technique, often developed in early literacy, is phonemic awareness. Phonemic awareness helps young children separate a word into sections of sounds and blend them into words.

Unfortunately, there has not been any current or significant research on music interventions used to improve reading skills and reduce off-task behaviors of children with ASD (Kehasuwan, 2015). Nonetheless, music interventions are used in various settings to support emotional regulation and mood that positively affect music listening. Listening to music affects physiological arousal, such as the heart rate and blood pressure, and psychological stress experiences related to restlessness, anxiety, and nervousness (de Witte et al., 2019). In a music intervention, musical activities include songwriting, playing a musical instrument, or creating a musical instrument using various materials and sound sources (Viouli & Friesen, 2016)

CHAPTER TWO

LITERARY REVIEW

Studies conducted within the last ten years show the benefits of singing, a tool found in music therapy², for children with ASD (AMTA, 2021). The studies within this thesis describe how singing activities improve early literacy skills, such as word reading, which are a predictor of reading comprehension later in children's education (Kehasuwan, 2015). The studies' descriptions include the characteristics and background of the main participants of focus. Participants, not of focus, are also relevant in the studies.

From the prominent participants in each case study within this thesis, several essential experiences are described and synthesized to show the similarities of outcomes when singing. Singing is often an element used within a music intervention or music therapy. The review shows how singing can be included with an early literacy skills curriculum.

Case Studies

Within this thesis, there are four case studies regarding the word reading experiences of children with ASD. Each case study is described and synthesized to show how singing is implemented into the participants' word reading experiences.

In case study #1 by Kehasuwan (2015), a 6-year-old boy of Tai heritage had significant reading challenges. The challenges were in producing phonics sounds, vowels, and blending of single-syllable words.

Given his parents' permission, the child participant was observed within an ABAB single case experimental and qualitative study design. An ABAB single-case experimental design is a style of research often prevalent in the fields of special education. This research style helps change, such as a learning behavior, an individual, or a small group of individuals. The changes are then documented (Fraenkel & Wallen, 2006).

The child also had challenges in transitioning to reading, which was not one of his preferred activities. Challenges in transitioning to non-preferred activities, such as reading, are typical behaviors, particularly, but not limited to, children with ASD (CDC, 2020). This form of behavior can hinder a child's progress in early literacy development and later stages of their reading skills development (Gersten et al., 2017).

Within a private room, the child was observed with a teacher/researcher as the two interacted in a learning session. The child was presented with a reading instruction or intervention without singing, known as phase (A), that included a 45-minute block within five consecutive days. A total of 6 reading activities were designed to address the same vowel sound. Furthermore, the reading instruction consisted of colorful alphabet letters and other engaging

learning materials like games, jigsaw puzzles, and word cards. The child was given a Word Reading Test (WRT) proceeding the reading activities.

The child's reading sessions were followed by music therapy sessions known as phase (B). The music therapy or music intervention sessions spanned over five consecutive days and lasted for 45 minutes each. Within these music therapy sessions, there were a total of 6 music activities that included live music with singing. The music therapy sessions also had the same reading instruction used in Phase (A), such as addressing the same vowel sound and utilizing colorful alphabet letters and word cards. Like in phase (A), a WRT was administered to the participant after the music therapy interventions. Phase (A) and Phase (B) were then repeated once more.

In a similar study, case study #2 (Vaiouli & Friesen, 2016), a young boy named Joshua, diagnosed with ASD, participated in various singing activities. The music activities took place within an inclusive classroom during early literacy instruction.

Joshua engaged in one particular singing activity during early literacy instruction. The teacher read a music storybook to the class. Joshua was already familiar with the music storybook titled *Risseldy Rosseldy* (Feierabend & Nguyen, 2005). As the teacher began singing the first page of the book, that involved tongue twisters, Joshua joined in by repeating the tongue twister along with his classmates. Joshua demonstrated his emerging code-based and early literacy abilities during the singing activity through Sound Matching (SM). SM refers to

identifying which word, out of a field of two other words, either begins or ends with the same sound as the target word shown on a word card (Carahaly, 2021). Sound matching is considered an early literacy skill that predicts a child's future success in reading comprehension (Kehasuwan, 2015).

Also, the study by Kehasuwan (2015) showed how Joshua smoothly transitioned from more preferred environments to less preferred settings when singing activities were included.

Case study #3, conducted by Vaiouli & Ogle (2015), demonstrated how singing was used to improve word reading for a young boy named Mark. Mark was approximately four years of age and diagnosed with ASD. Also, He had limited verbal, social, and communication skills. These limitations had prevented Mark from fully participating with the rest of his classmates during learning activities.

During an observation of Mark in a group activity, the young boy positively reacted to songs his teacher had incorporated into the lessons. For example, Mark's teacher presented the song "London Bridge" as a singing game during a group activity. Mark enjoyed the tune of this song and demonstrated his likeness towards the singing activity by participating in holding his head up with attention during the activity. Mark's teacher incorporated the tune of the song while teaching letter recognition. Letter recognition is a key element of word reading. (Vaiouli & Ogle, 2015).

The study continued describing reading skills instruction, in which Mark's teacher changed the lyrics of the tune of the song "London Bridge." Mark sang the words, "This is how I spell my name, spell my name, spell my name....my dear Brandon." Brandon, one of the normally developing children in Mark's class, enjoyed singing the song. Brandon stood up when he heard his name and then picked the correct letters from the magnet board while spelling his name aloud. According to Vaiouli and Ogle (2015), this form of word reading is an early literacy skill known as alphabet knowledge.

Brandon knew that the tune of "London Bridge" was one of Mark's favorites. When it was time to pick a friend to choose letters to spell a name, Brandon decided on Mark. Mark, who had been attentive throughout the song, stood up and chose letters to spell his name. Mark demonstrated how a singing activity could support building early literacy skills through teaching the Alphabetic Principle. Connecting letters with sounds to read and write is called the Alphabetic Principle (Baker et al., 2018).

In case study #4 by Fong and Lee (2012), a 6-year-old boy of Indian origin and identified as having Autism at the age of 18 months, recognized syllables through a singing activity that included learning the song titled OWISANA. Initially, the participant had challenges in identifying syllables within words. He could only imitate the sounds of syllables but not read them. For example, when the researcher wrote 'SA' on the board, from the word OWISANA, the participant could only read the syllable 'SA' after hearing a classmate say it. However, in the

following music lesson that involved singing the song OWISANA, the researcher wrote 'NA' on a whiteboard twice; 'NA' was written in the manner of 'SA-NANA' from the title of the song. As a consequence of the early literacy instructional strategy and singing, the participant could remember how to pronounce 'NA,' demonstrating the opportunity to enhance his reading of words through syllabication. Syllabication is the act, process, or method of forming or dividing words into syllables (Merriam-Webster, 2021).

Summary

Across the studies in the literature reviewed, the participants' experiences consisted of singing activities with reading instruction. Singing and moving to pre-composed songs were considered singing activities with several beneficial factors.

Baker (2009) generalized pre-composed songs as songs composed of musical tones with individual clients in separate sessions; lyrics would have been created before the clients composed the music. Pre-composed songs has been known as one of several preferences when working with people across various populations (Baker et al., 2009).

Vaiouli and Ogle (2015) showed the connection between singing activities and early literacy skills development. The researchers explained that when clapping to a rhythm and keeping a steady beat during a song, there were opportunities for auditory cues (Vaiouli and Ogle, 2015).

For clarification, Auditory cues are used within a process in which movement is synchronized to sound (Schaefer, 2014). For example, children can demonstrate their reaction to an auditory cue by clapping to rhythm within a song they hear. The Auditory cue would be the sound of the rhythm preceding the clapping in sync with the rhythm.

Auditory cues have led to early literacy skills. Three skills that auditory cues develop include the alphabetic principle, phonological awareness, and vocabulary development (Yopp & Yopp, 2009).

CHAPTER THREE

METHODOLOGY

Research Design

This thesis uses a research design based on a meta-synthesis of qualitative research taken from secondary sources. The sources include peer-reviewed/evidence-based articles and additional sources from institutions that utilize music interventions for children with ASD. Those institutions include schools that target individuals with ASD by using effective research-based treatments, academic interventions across the curriculum, and advocacy.

The design implemented in this thesis is a meta-synthesis of four qualitative studies. Case studies within the meta-synthesis have been reviewed to steer in building this thesis's framework. The qualitative research's literary reviews within the thesis show that the researchers have collected data through numerous observations, written notes, audio recordings, and video recordings of parents' and teachers' discussions. There is a direct interaction between the facilitator and the participants. Also, ongoing observations of the participants' experiences are synthesized into meaningful documentation of the phenomenon

The design within the four articles reviewed is qualitative-based. A fifth article was reviewed that encompassed a mixed methodology of a qualitative and quantitative approach. The information in the fifth article was used primarily to emphasize its close relation and significant relevance to this meta-synthesized

thesis. However, the information used from the fifth article was solely from qualitative methods.

The purpose of using a case study research design within this thesis is to place focus on exploration and description rather than on a generalized or universal truth.

Research Method

Within this thesis, the research method is based on descriptive research from four case studies. The descriptions of the research reviewed involve collecting and presenting information that focuses on a particular participant or small group; typically, there are accounts of the subject's experiences(s) themselves. The research within this thesis concludes the experiences of individuals and about the particular field of study that the research encompasses (Baker et al., 2009)

Criteria of Meta-Synthesis of Research

The meta-synthesis presents significant reading challenges of children with ASD between the ages of 3-6 years. The children are of either male or female gender and represent various ethnic groups such as, but not limited to, Thai and Indian origin. The disabilities of the children range from mild to moderate and include those who have more than one disability.

The meta-synthesis of the literature reviewed within this thesis consists of musical singing activities. The activities can be deemed a music intervention to address challenges in children's reading development with ASD (Kehasuwan,

2015). Also, reading interventions are emphasized during the singing activities. Singing activities consist of singing, moving, or responding to pre-composed songs or songs composed ahead of time. As a reminder, when speaking of reading interventions, it is understood that this support is related to the improvement of word reading, decoding skills, word rate, word speed, and reading comprehension (Gersten et al., 2017).

The reading interventions described within the literature review include singing activities found in an early literacy curriculum. Also, the singing activities are accomplished in inclusive environments and are associated with music interventions within music therapy guidelines (AMTA, 2021). According to AMTA (2021), Music Therapy is a clinically and evidence-based music intervention to support individuals in completing goals. The relationship occurs between the individual and a credentialed music therapist.

CHAPTER FOUR

FINDINGS

Introduction

Within this thesis, the meta-synthesis of qualitative research consists of several case studies from the literature reviewed. Each case study describes the word experiences of young children with ASD who participated in singing activities. The outcomes, as a consequence of those experiences, are also described.

Kehasuwan's Study

Kehasuwan (2015) indicated that the participant in the study showed improvement in word reading scores. The reading scores increased in both music therapy interventions and non-music therapy interventions given to the participant. However, the word reading test scores were significantly higher when a music therapy intervention, using singing, was introduced to children with ASD.

Also, there were other findings in Kehasuwan's study that revealed the participant's attention span. The participant demonstrated off-task behavior 50% of the time when singing was absent during a reading task. In contrast, when singing was present with a reading task, the participant's off-task behaviors decreased dramatically. Staying on task is an executive function necessary for early literacy skills development in young children (Girard, 2017).

Vaiouli's and Friesen's Study

The study of Vaiouli and Friesen (2016) demonstrated that when a child participant with ASD was presented with pre-composed songs that were familiar and engaging, the child was more motivated to engage in reading activities. Furthermore, the findings revealed that when participating with peers in singing, emphasizing early literacy skills, the participant's attention to the reading tasks increased significantly.

Vaiouli & Friesen's (2016) study demonstrated that when children can participate with their peers during engaging instruction time, such as instruction involving singing activities, they are more likely to increase learning.

Vaioluli's and Ogle's Study

In a study conducted by Vaioluli and Ogle (2015), the child participant known as Mark responded well when presented with pre-composed songs during his academic learning associated with early literacy development. Mark, approximately 3 1/2 years in age, enjoyed singing familiar songs. The songs were a form of motivation that encouraged Mark to participate with his classmates. During his participation, Mark was able to identify letters of his name and spell his name aloud. Mark demonstrated this action when his name was called melodically by his teacher during the song of "London Bridge."

Additional findings in the same study showed other benefits that Mark gained by singing during early literacy development. Those additional findings consisted of Mark showing improvement in transitioning from preferred activities

to non-preferred activities. For example, Mark and his peers moved to the class circle area; Mark showed distress in the process and sobbed in displeasure after free-time play.

To counteract Mark's poor mood, the teacher played a favorite tune on the cd player that most of the children, including Mark, favored. When Mark heard the favorite song, his head immediately raised along with a smile on his face, as he was successfully directed to join the other children in a hopping activity.

The singing activity helped Mark to self-regulate during transitioning. Self-regulation refers to a skill that allows individuals to manage their emotions, behavior, and body movement when faced with a challenging event (Morin, 2021).

Fong and Lee's Study

In the Fong and Lee study (2012), the participant was a young boy of four years of age diagnosed with ASD. He was also of Indian heritage. The child showed improvement in reading syllables of words during a singing activity in his inclusive classroom. The study confirmed that reading nonsense lyrics increased the participant's ability to remember concepts related to early literacy development, such as syllabication. Also, the study showed that the participant gained other early literacy skills by participating in singing activities; those skills included improvement in his unique learning style.

The findings revealed the participant's unique learning style while learning the song "Layang-Layang Ku Sayang." While learning the song, the young child

showed pre-mature responses ahead of his teacher instead of imitating the teacher's words from the song. For example, instead of imitating the words "Layang-Layang Ku Sanang" that the teacher sang, the child would pronounce the proceeding syllable 'Ku' in advance, leaving out other words of the song. The child was not able to follow the pace of learning. However, when the teacher/researcher paused after the word "Ku," the participant finished the sentence by singing "Sayang." The child demonstrated his knowledge of the correct word while also showing an appropriate learning pace.

Pacing is an essential reading skill required for reading fluency or smooth reading of words. Appropriate pacing of words is a good predictor of successful reading skills, such as reading comprehension, later in a child's education (Liben & Paige, 2016).

Summary

The researchers, across the qualitative studies exhibited in Table 1, show commonalities in ideologies. All studies in Table 1 proceeding represent a common idea that music brings significant benefits to children with Autism. Those benefits include engagement and improvement in academics, such as reading skills, cognition, and vocabulary. Also, the researchers' findings similarly revealed benefits in the advancement of social interaction, group participation, and verbal communication.

Table 1. Qualitative Research Articles of Case Studies of Children with ASD

| Article | Methodology | Measurement | Intervention | Findings |
|---|-----------------------------------|--|---|--|
| “The Use of Music Therapy Interventions to Improve Pre-Reading Skills and Reduce Off Task Behaviors During Reading Tasks of a Child with Autism.” (Kehasuwan, 2015.)_ | Qualitative/ Single Case Study | Observation | Singing/ Learning Nursery Songs During Early Literacy Instruction | Suggests that singing supports early literacy development |
| The Magic of Music: Engaging Young Children... (Vaiouli et al., 2016) | Qualitative/ Single Case Study | Word Reader Test (WRT) | Singing Pre-Composed Songs During Reading | Higher gains in reading scores compared to a non-music intervention |
| Music Strategies to Promote Engagement... (Vaiouli & Ogle, 2015) | Qualitative/ Single Case Study | Data are shown in Figures, Tables, & Graphs. | Singing to Nursery Songs, Moving to Songs During Word Reading | Improved word reading through building phonemic and phonological awareness |
| Communication Responses of an Indian Student with Autism to Music...(Fong & Lee, 2012) | Qualitative/ Single Case Study | Observation notes | Learning words of songs, singing songs during reading instruction | Improved syllabification of words |

The researchers across the literature showed similarities in ideals. The common idea is that children with ASD may exhibit behavioral challenges when transitioning to new environments and events. This was evident when the participants of focus transitioned from more desirable activities to settings less desirable. Therefore, the researchers commonly agreed that understanding factors, such as mood and repetitive movements associated with ASD, can allow teachers to find alternative strategies for children transitioning between events, activities, and environments. The researchers revealed that music interventions, such as singing activities and reading instruction, were effective alternative strategies for children with ASD with reading challenges.

However, Fong and Lee (2012) emphasize that even though music brings many benefits to children with ASD, teachers are encouraged to improvise their instructional delivery when providing musical experiences for their students. For example, changing words in songs with alternate pacing ahead of the children's pace may support individuals who find it difficult to control their pace of learning words.

CHAPTER FIVE

DISCUSSION

Introduction

The synthesis of research within this Thesis describes how singing activities and emphasis on reading development can make reading more meaningful, engaging, and motivating for children with ASD (Vaiouli & Friesen, 2016). Through the descriptive accounts of each study, the synthesis demonstrates how interfering behaviors of children with ASD, such as inattentiveness and lack of engagement, can slow down early literacy development.

Singing activities can be compared to music interventions. Music interventions or music therapy help young children increase attention span, regulate emotions, and engage fully during reading activities. ASD (AMTA, 2021)

Professionals in special education, who support the unique needs of children with ASD, can gain insight from this research. Such professionals include Psychologists, Education Specialists/Special Education Teachers, General Education Teachers, Music Therapists, and Special Education Leaders. Often professionals who support the various needs of children with Autism are affiliated with institutions (Table 2) designed to serve children and adults with unique needs.

Table 2. Examples of 3 Institutions in California that Provide Music Interventions for Children with ASD.

| Institution | City | Provides | Music Interventions |
|---------------------------------------|---------------|--|--|
| Coast Music Therapy | San Diego, CA | <ul style="list-style-type: none"> • Service for more than 25 San Diego School Districts • Board Certified Music Therapists • In line with IEP goals, CA Common Core Standards, Pre-school Learning Foundations | <ul style="list-style-type: none"> • Research-based • Utilizes ABA • Neurologic based |
| Music Therapy Wellness Clinic at CSUN | Northridge | <ul style="list-style-type: none"> • Individualized designed music activities • Life skills development • Supports the development of academic fundamentals | <ul style="list-style-type: none"> • Creative-based • Address Self-Awareness to address self-esteem |
| Oak Hill School | Mill Valley | <ul style="list-style-type: none"> • strong therapeutic relationships • Individualized academic & behavioral instruction • Medical insight | <ul style="list-style-type: none"> • 3:1 student to teacher ratio • Emphasis on Self-regulation • Focus on Creativity |

Limitations

A mini meta-synthesis design, used to guide this research, was mainly due to the limited availability and current peer-reviewed studies conducted within the last ten years in special education. Therefore, it was necessary to use what peer-reviewed articles were available that touched upon the benefits of singing activities within early literacy curriculums. The literary review was based on the best and most recent research made accessible.

Also, in most of the case studies, the participants were observed in inclusive classroom settings. However, in one literary review (Kehasuwan, 2015), the participant was isolated from his typically developing peers. The child participant was instead observed in a separate room with a teacher/researcher's instruction. Therefore, it should be understood that outcomes in the word test scores, of the isolated participant, could have granted other or additional findings if he were in an environment with normally developing peers.

Conclusion

Children with ASD often exhibit characteristics that are a result of their disability. Those characteristics include complex disorders that affect communication, social skills, verbalization, and repetitive or restrictive behaviors (CDC, 2020). As an outcome of these deficiencies, decoding, syllabication, and phonological awareness have increased. Reading challenges in children with

ASD can range from not reading to reading accurately but without reading comprehension (Nation et al., 2006;).

The studies conducted by researchers reviewed within this thesis were synthesized into conclusive accounts of the participants' word reading experiences. As a product of the accounts, the findings revealed important benefits that singing activities bring into reading acquisition of children with ASD.

Also, singing activities has been identified to support emotional regulation, engagement, participation with peers, and smooth transitioning between various environments and events (Vaiouli & Ogle, 2015). Successful word reading experiences are strong predictors of acquiring more complex reading skills, such as inference and reading comprehension (Kehasuwan, 2015).

The researchers (Fong & Lee, 2016; Kehasuwan, 2015; Vaiouli & Ogle, 2015) who conducted the case studies reviewed within this thesis imply that alternative interventions can build literacy for early readers. Alternative interventions, such as singing activities found in music interventions, can improve word reading in children with ASD.

Furthermore, the research indicates that music interventions can predict future success for children of various abilities, including individuals with ASD, to acquire more complex reading skills. Those skills include creating pre-composed songs, contributing ideas and narratives, and comprehending contextual information and stories.

Within the literary review of this thesis, a common ideology was evident across case studies conducted by the researchers (Fong & Lee, 2016; Kehasuwan, 2015; Vaiouli & Ogle, 2015). The commonality occurred in the outcomes of singing activities, which manifested as a motivator for strengthening young children's reading skills with ASD. All the case studies confirmed how singing activities contributed to making events, such as reading skills activities, more meaningful, engaging, and joyful (Kehasuwan, 2015).

This thesis concludes that promoting solid readers for the future is an achievable goal. Understanding the various resources available can support the development of solid readers. Such resources include music interventions.

Recommendation for Future Research

The knowledge gained from the case studies substantiates that singing can improve word-reading experiences for children with ASD. This knowledge has led to additional questions. Can a state and federally recognized music intervention be created for early literacy curriculums that are effective? Furthermore, what key components would an effective music intervention include for an early literacy curriculum program in California or across the United States?

As a consequence of the findings of a qualitative meta-synthesis within this thesis, future research towards answering or addressing questions regarding effective music interventions is recommended. The premise of the recommendation is that researchers be encouraged to study and recognize the

significance of including music interventions, such as singing activities, into the building blocks of reading skills for young readers.

Institutions (Appendix A), namely school districts, private schools, and schools for children with special needs, may consider creating a curriculum that inhabits both reading and music to address the reading challenges of children with ASD.

APPENDIX A
CALIFORNIA SCHOOLS WITH MUSIC-BASED INTERVENTIONS FOR
CHILDREN WITH ASD

CALIFORNIA SCHOOLS WITH MUSIC-BASED INTERVENTIONS FOR CHILDREN WITH ASD

Coast Music Therapy San Diego, CA.

<http://www.coastmusictherapy.com/our-services/in-school-programs/>

- Services more than 25 San Diego County School Districts
- Provide Board Certified Music Therapists
- Utilize research-based interventions drawing from the fields of Neurologic Music Therapy and Applied Behavior Analysis
- In line with IEP goals and educational standards such as Common Core Standards and Preschool Learning Foundations

Music Therapy Wellness Clinic at CSUN Northridge, CA.

<https://www.csun.edu/mike-curb-arts-media-communication/music/music-therapy-clinic-information>

- Provides individualized designed music activities for children and adults with special needs, including autism.
- It is a healing art based on scientific principles and grounded in research.
- Support clients in acquiring life skills through creative and engaging mediums of music.
- Internationally recognized music therapists with a host of techniques and areas of expertise
- Gives participants opportunities to express their true creative essence while gaining needed skills and enhancing self-esteem.
- Supports the improvement of acquisition and application of academic fundamentals.

Oak Hill School Mill Valley, CA

<https://www.theoakhillschool.org/>

- Provide solid therapeutic relationships between therapist and participants.
- Provide individualized academic and behavioral instruction with medical oversight for students.
- 3:1 student to teacher ratio
- Students are taught to self-regulate and identify with their creativity.

Pacific Autism Center for Education Santa Clara, CA

<https://www.pacificautism.org/programs/pace-school/>

- Non-profit and non-public schools certified by the California Department of Education with a Western Association Accreditation of Schools and Colleges
- Serves children and adult students with moderate to severe Autism, particularly with challenges in behavioral, communication, and verbal disorders.
- Provides a multi-disciplinary approach.

- Maintains the goal of supporting students to self-regulate, relate, and communicate.
- Provides services based on each student's learning style.
- Program is based on socio-emotional and student-centered philosophy.

APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL FORMS

The IRB categorized this graduate thesis as 'exempt' from needing an Institutional Review. The IRB's decision was based on how the research was obtained for this thesis. The research collected for this thesis was obtained from secondary sources. There were no live participants involved during the collection of research for and the writing of this thesis.

REFERENCES

- American Music Therapy Association (AMTA). (2021). *What is Music Therapy?*
<https://www.musictherapy.org/about/quotes/>
- Baker, F., Wigram, T., Stott, D., & McFerran, K. (2009). Therapeutic songwriting
In music therapy, Part II: Comparing the literature with practice across
diverse clinical populations. *Nordic Journal of Music Therapy*, 18(1), 32–
56.
<https://www.tandfonline.com/doi/abs/10.1080/08098130802496373>
- Baker, S.K., Santiago, R.T., Masser, J., Nelson, N.J., & Turtura, J. (2018).
*The Alphabetic Principle: From Phonological Awareness to Reading
Words*. Washington, DC: U.S. Department of Education, Office of
Elementary and Secondary Education, Office of Special Education
Programs, National Center on Improving Literacy.
[https://improvingliteracy.org/brief/alphabetic-principle-phonological-
awareness-reading-words](https://improvingliteracy.org/brief/alphabetic-principle-phonological-awareness-reading-words)
- Carahaly, L. *Sound Matching (SM)*. (2021).
The Speech-EZ Apraxia Program.
<https://speech-ez.com/sound-matching.html>
- Centers for Disease Control and Prevention (CDC). (2020). *Diagnostic Criteria
for 299.00 Autism Spectrum Disorder*.
<https://www.cdc.gov/ncbddd/autism/hcp-dsm.html>
- Choksy, L. (1999). *The Kodály Method I: Comprehensive Music*

Education (pp. 29-41). Prentice-Hall.

de Witte, M., Spruit, A., Hooren, S. V., Moonen, X, & Stams, G. (2019). Effects of music interventions on stress-related outcomes: a systematic review and two meta-analyses. *Health Psychology Review, 14*(2).

<https://www.tandfonline.com/doi/full/10.1080/17437199.2019.1627897>

Dunbar, L., & Cooper, S. (2020) How the Kodaly concept teaches literacy.

Sage Journals, 34(1), 14-20.

<https://journals.sagepub.com/doi/full/10.1177/1048371320909804>

Elleman, A. & Oslund, E. (2019). Reading comprehension research: Implications for practice and policy. *Sage Journals, 6*(1), 3-11.

<https://journals.sagepub.com/doi/full/10.1177/2372732218816339>

Feirabend, J. M. (2012). *Risseldy, Rosseldy* (pp. 1-32). GIA.

Fong, C.E. & Lee, C. S. (2012). Communication responses of an Indian student with autism to music education. *Procedia-Social and Behavioral Sciences, 65*(2012), 808-814.

<https://doi.org/10.1016/j.sbspro.2012.11.203>

Fraenkel, J. R., & Wallen, N. E. (2006). *How to Design and Evaluate Research in Education* (6th ed., pp.1-32). McGraw Hill.

Gately, S. (2008). Facilitating Reading Comprehension for Students on Autism Spectrum. *Teaching Exceptional Children, 40*(3), 40-45.

<https://journals.sagepub.com/doi/10.1177/004005990804000304>

Gersten, R., Gonchar, R. N, Haymond, S.K., & Dimino, J. (2017). *What is the*

the evidence base to support reading interventions for improving student outcomes in grades 1–3? What's Known.

<https://files.eric.ed.gov/fulltext/ED573686.pdf>

Girard, K. (2017). *The Importance of Executive Functioning in Early Development*. U-Gro Learning Centers.

<https://www.u-gro.com/2019/09/executive-functioning/>

Goldstein, H. (2011). Knowing what to teach provides a roadmap for early literacy intervention. *Journal of Early Intervention*, 33(4), 268-280.

<https://journals.sagepub.com/doi/10.1177/1053815111429464>

Hallam, S. (2010). The power of music: Its impact on the intellectual, social, and personal development of children and young people. *International Journal of Music Education*, 28(3), 269-289.

<https://journals.sagepub.com/doi/10.1177/0255761410370658>

Hume, K. (2013). *Visual supports (vs) fact sheet*. Chapel Hill: the University of North Carolina, Frank Porter Graham Child Development Institute. The National Professional Development Center on Autism Spectrum Disorders.

https://autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/Visual_Supports_factsheet.pdf

Johnson, k. (2014). *What is phonemic awareness? Understood.*

<https://www.understood.org/en/learning-thinking-differences/child-learning-disabilities/reading-issues/phonological-awareness-what-it-is-and-how-it-works>

Kehasuwan, W. (2015). *The use of music therapy interventions to improve pre-reading skills and reduce off-task behaviors during reading tasks of a child with autism spectrum disorders*. College of Music, Mahidol University.

Kelly, k. (2021). *Faqs about dyslexia and learning music*. Understood.

<https://www.understood.org/en/learning-thinking-differences/child-learning-disabilities/dyslexia/dyslexia-and-music>

Liben, D. & Paige, D. (2016). *What is Reading Fluency?* Aligned.

<https://achievethecore.org/aligned/what-is-reading-fluency/>

Lonigan, C. J., & Whitehurst, G. J. (1998). Relative efficacy of parent and teacher involvement in a shared-reading intervention for preschool children from low-income backgrounds. *Early childhood research quarterly*, 13(2), 263-290.

[https://doi.org/10.1016/s0885-2006\(99\)80038-6](https://doi.org/10.1016/s0885-2006(99)80038-6)

Merriam-Webster Dictionary. (2021). Syllabication. <https://www.merriam-webster.com/dictionary/syllabication>

Morin, A. (2021). *Trouble with self-regulation: what you need to know*.

Understood.

<https://www.understood.org/en/learning-thinking-differences/child-learning-disabilities/sensory-processing-issues/trouble-with-self-regulation-what-you-need-to-know>

Nation, K., Clarke, P., Wright, B., & Williams, G. (2006). Patterns of reading ability in children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 36(7), 911-919.

<https://doi.org/10.1007/s10803-006-0130-1>

Nguyen, N. N., Levtham, P. Whitby, P. S., & Gelfer, J. I. (2021). *Reading Comprehension and Autism in the Primary General Education Classroom*. Reading Rockets.

<https://www.readingrockets.org/article/reading-comprehension-and-autism-primary-general-education-classroom>

Organization of American Kodaly Educators (OAKE). 2021. *The Kodaly Concept*. <https://www.oake.org/about-us/the-kodaly-concept/>

Oxford Dictionary (2021). Solfege. <https://www.lexico.com/en/definition/solfege>

Pang, E. S., Muaka, A., Bernhardt, E. B., & Kamil, M. L. (2003). *Teaching Reading. Educational Practices Series*. ERIC.

<https://eric.ed.gov/?id=ED481186>

Schaefer, R. S. (2014). Auditory rhythmic cueing in movement rehabilitation: findings and possible mechanisms. *Philosophical Transactions of the Royal Society B*, 369(1658), 1

<https://royalsocietypublishing.org/doi/10.1098/rstb.2013.0402>

- Stanberry, K. (2009). *Effective Reading Interventions for Kids with Learning Disabilities*. Reading Rockets.
<https://www.readingrockets.org/article/effective-reading-interventions-kids-learning-disabilities>
- Standley, J. Does music instruction help children learn to read? Evidence of a meta-analysis. Update: applications of research in music education. (2008). *Sage Journals*, 27(1), 17-32.
<https://journals.sagepub.com/doi/10.1177/8755123308322270>
- Tsai, C.H., Chen, K. L., Li, H. J., Chen, K. H., Hsu, C. W., Lu, C. H., Hsieh, K.Y., & Huang, C. Y. The symptoms of autism, including social communication deficits and repetitive and restricted behaviors, are associated with different emotional, behavioral problems. (2020). *Scientific reports*, 10(20509). <https://doi.org/10.1038/s41598-020-76292-y>
- United States Department of Education. (2010). *Thirty-Five Years of Progress in Educating Children with Disabilities Through IDEA*. IDEA.
<https://www2.ed.gov/about/offices/list/osers/idea35/history/idea-35-history.pdf>
- Vaiouli, P. & Friesen, A. (2016). The magic of music: engaging young children with autism spectrum disorders in early literacy activities with their peers. *Childhood education*, 92(2), 126-133.
<https://doi.org/10.1080/00094056.2016.1150745>
- Vaiouli, P., Ogle, I. (2015). Music strategies to promote engagement and

academic growth in children with asd in the inclusive classroom. *Young exceptional children*, 18(2), 22-24.

<https://doi.org/10.1177/1096250614523968>

Whitehurst, G. J., & Lonigan, C. J. (1998). Child development and emergent literacy. *Child development*, 69(3), 848-872.

<https://pubmed.ncbi.nlm.nih.gov/9680688/>

Yopp, H. K., & Yopp, R. H. (2009). *Phonological awareness is child's play!* Beyond the Journal. Young children.

<https://www.azed.gov/sites/default/files/media/PhonologicalAwareness.pdf>

FOOTNOTES

1 Music therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a credentialed professional's therapeutic relationship (AMTA, 2021).

2 Solfege refers to the study of singing and musicianship using solmization syllables (Oxford, 2021).