

**Inclusion Practices for Students with Autism in the Music Classroom: A Survey of K-6
Music Educators' Perceptions, Training, and Strategies**

By

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Abstract

In 1990, the Individuals with Disabilities Education Act (IDEA), was amended to include students with autism into the music classroom with their typically developing peers (U.S. Department of Education, Office of Special Education and Rehabilitative Service, 2020). Music educators may be excluded from IEP planning and may not have access to essential information about special needs students. Additionally, it often takes additional planning time and effort for music educators to make curriculum adaptations and modifications for students with autism (Turnbull & Schulz, 1979). Therefore, some music educators have negative attitudes regarding the inclusion of students with autism in the music classroom (Darrow, 1999; Sideridis & Chandler, 1995). It is important to examine music educators' attitudes and strategies since the implementation of IDEA (Sideridis & Chandler, 1995).

The purpose of this descriptive, quantitative study was to survey K-6 music educators regarding their strategies, training, and perceptions when teaching students with autism in the music classroom. Specific research questions were:

1. What evidence-based strategies do K-6 music educators use to teach students with autism in the music classroom?
2. What extent of educational preparation exists among K-6 music educators when teaching students with autism?
3. What are K-6 music educators' familiarity with the Individualized Education Program (IEP)?
4. What are K-6 music educators' perceptions of students with autism in the music classroom?

5. Are there differences among K-6 music educators' perceptions based on years of teaching experience, degree, school classification, and school size?

Participants ($N = 148$) who identified as K-6 music educators affiliated with the National Association for Music Education (NAfME) were recruited for this survey. The survey items were related to (a) strategies, (b) music educator training, (c) Individualized Education Program (IEP), and (d) music educator perceptions regarding students with autism in the music classroom. I used crosstabulations to determine the relationship between music educators' perceptions and students with autism. Also, I used a non-parametric version of a MANOVA in *R Studio* to determine the differences of music educators' perceptions regarding students with autism.

Results indicated music educators use preferential seating, consistent routines, echoing, modeling procedures, and peer helpers as strategies to assist students with autism. Music educators indicated they do not use PECS, picture schedules, or visual task analysis on a regular basis to teach students with autism. Music educators also indicated they lack the appropriate resources, training, and skills to teach students with autism. Participants indicated they did not receive sufficient training during their undergraduate and graduate courses nor in their current school systems. Finally, there were no significant differences in music educators' perceptions based on number of years teaching, educational degree level, school classification, or school size regarding students with autism.

Recommendations for future research include surveying college professors to determine why autism strategies and resources are not being provided to future music educators. Research needs to be conducted in public school systems to determine the frequency and effectiveness of professional development current music teachers receive regarding students with autism.

Research needs to be conducted to determine if all teachers need to be involved in the IEP

process or if special educators are providing appropriate sections on the IEP to all teachers. The last recommendation is encouragement for music educators to seek additional professional development, locate resources, materials, and training to learn how to teach students with autism.

Dedication

To my husband, Tom Powell
None of this would have been possible without your love and support!

Acknowledgments

First, I thank God for helping me accomplish one of my life goals. “I can do all things through Christ which strengtheneth me” Philippians 4:13. Thank you to my husband, Tom, for loving, supporting, encouraging, and believing in me. I could not have completed this journey without him by my side. Thank you to my son, Andrew (17), who taught me how to think differently and to view the world from his perspective. Thank you to my son, Jacob (15), for your patience, love, and encouragement. Thank you to my parents, Hillard and Doris Comeens, for always encouraging me to follow my dreams. Thank you to Dr. Bobbie Glassco, Auburn Alumni, for your support and encouragement.

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Chapter 1

Introduction

Statistics indicate students who are diagnosed with autism have increased over the last several years. A recent U. S. Department of Education, Office of Special Education Programs (2020) report indicated an increase from 0.2% of students with autism in the 2000-2001 academic year to 1.5% of students with autism in the 2018-2019 academic year. In fact, the annual report to Congress from the U.S. Department of Education, Office of Special Education and Rehabilitative Service (2019) revealed that 10.8% of students ages three through five who were served under the IDEA, Part B, in 2017 in the United States were diagnosed with autism. Also, in 2017, only 10.1% of students ages six through 21 were served under the Individuals with Disabilities Education Act (IDEA), Part B in the United States. Furthermore, thirty-nine percent of students with autism, whom IDEA, Part B served, spent 80% or more of their school day in regular classrooms alongside their typically developing peers.

Following the passage of IDEA in 1990, students with autism are included in the music classroom with the exception that music educators create an environment that is conducive to all learners (Brown & Jellison, 2012; Cassidy, 1990; Colwell & Thompson, 2000; Darrow & Armstrong, 1999; Draper, 2020b; Gilbert, 2013; Hammel & Hourigan, 2011; Hammel & Hourigan, 2017; Jellison & Taylor, 2007; Mazur, 2004; Sideridis & Chandler, 1995). Music educators need to assess and apply the appropriate strategies or instructional supports to assist students with autism (Gilbert, 2013; Hammel & Hourigan, 2013; Vaiouli & Ogle, 2015; Walkup-Amos, 2020; Whipple & VanWeelden, 2012). However, music educators often face challenges when teaching students with autism due to feelings of inadequacy, helplessness, frustration, and lack of instructional planning (Altun & Eyüpoglu, 2018; Cassidy, 1990; Gilbert, 2013; Hammel,

2001; Hammel & Gerrity, 2012; Hess et al., 2007; Mazur, 2004; Salvador, 2010; Scott, 2016).

Music educators need specialized skills and training, which are critical to the successful inclusion of students with autism (Gilbert, 2013). Administrators need to examine music educators' attitudes and skills to ensure students with autism receive the best musical experience possible in the music classroom (Sideridis & Chandler, 1995).

Music educators sometimes have negative attitudes regarding students with autism in the music classroom. Some music educators may lack competence to teach students with autism, which often comes from not having enough undergraduate courses or professional development to teach students with autism. Also, music educators find themselves dealing with behavior issues due to a lack of skills or strategies needed to address behaviors in the music classroom. However, music educators' attitudes can change once they have the appropriate educational supports such as adequate instructional materials, assistive technology, evidence-based strategies, or visuals to teach students with autism (Atterbury, 1986; Darrow, 1999; Sideridis & Chandler, 1995).

Need for Study

Inclusion creates a diverse and healthy environment not only for students with autism but for all students in the music classroom. While there is considerable research on including students with autism in the regular education classroom, more research on including students with autism in the music classroom is needed (Colwell & Thompson, 2000; Darrow, 1999; Mazur, 2004). Music educators must know and implement strategies for students with autism (Hammel, 2004). Also, music educators need to be familiar with the Individualized Education Program (IEP), accommodations, modifications, and educational strategies to teach students with autism in the music classroom.

Music educators have a legal obligation to include students with autism in the music classroom. Music educators must ensure that all students have access to music regardless of their disabilities (Draper, 2019b). According to Hock et al. (1990), only 37% of music educators were trained to work with students with autism in the music classroom, which consists of only one or two workshops. Furthermore, music educators feel they do not have the appropriate skills or strategies to teach students with autism in the music classroom (Hammel & Gerrity, 2012).

Purpose

The purpose of this dissertation was to survey K-6 music educators regarding their perceptions, training, and strategies for teaching students with autism in the music classroom.

This study answered five research questions:

1. What evidence-based strategies do K-6 music educators use to teach students with autism in the music classroom?
2. What extent of educational preparation exists among K-6 music educators when teaching students with autism?
3. What are K-6 music educators' familiarity with the Individualized Education Program (IEP)?
4. What are K-6 music educators' perceptions of students with autism in the music classroom?
5. Are there differences among K-6 music educators' perceptions based on years of teaching experience, degree, school setting, and school size?

Assumptions

I made the following assumptions for this study: (a) music educators teach students with autism in their music classes, (b) all survey results were anonymous and confidential, (c)

participants answered all survey items honestly and truthfully, (d) the survey was voluntary, and (e) the participants could withdraw at any time.

Delimitations

This survey was restricted to K-6 music educators. While students with autism attend high school music classes, this survey focused on inclusion practices in the K-6 music classroom. Some results may generalize to other populations and some results may only be limited to elementary music classrooms. The participants were recruited through the K-6 music educator NAfME database.

Limitations

There were several limitations in this study. First, the online survey was hosted by Qualtrics to gather responses from K-6 music educators. Second, many music educators did not respond to the survey or open the email invitation. Third, distributing the survey during the COVID pandemic may have impacted the response rate. Finally, the survey was limited to K-6 music educators in the United States who were on the NAfME music educator database.

Definitions and Abbreviations

- Accommodations: “adaptations used when it is believed that a child can learn at the same level as the other students in the classroom” (Hammel & Hourigan, 2017, p.84)
- Assistive Technology: “designed to augment instruction and assessment for students with autism enabling them to increase participation in the classroom” (Swanson, 2019, p.12)
- Autism (ASD): “deficits in social communication and social interaction across multiple contexts, including deficits in social reciprocity, nonverbal communicative behaviors used for social interactions, and skills in developing, maintaining, and understanding relations. Also, the presence of restricted, repetitive patterns of behavior, interests, or activities” (Diagnostic and Statistical Manual of Mental Disorder (5th ed.; DSM-5; American Psychiatric Association, 2013, p.31)
- Established Interventions: “Sufficient evidence is available to confidently determine that an intervention produces favorable outcomes for individuals on the autism spectrum. The interventions are established as effective” (National Autism Center, 2015, p.9).
- Evidence-Based Practice (EBP): “instructional/intervention procedure or set of procedures for which researchers have provided an acceptable level of research that shows practice produces positive outcomes for children, youth, and/or adults with ASD”
<https://autismpdc.fpg.unc.edu/evidence-based-practices>
- Individuals with Disabilities Education Act (IDEA): “individuals have a right to free and appropriate education; students are entitled to a nondiscriminatory evaluation; education for students with disabilities must be appropriate; education for students with disabilities must be provided in the least restrictive environment; parents and students have the right to participate in the development, implementation, and decision-making process about the

student's education; set of guidelines and safeguards to protect students with disabilities from discriminatory, biased or unfair practices" (Adamek & Darrow, 2018, p.48).

- Individualized Education Program (IEP): "requirement of the law which assures the needs of each child have been considered and an appropriate individualized educational plan developed" (Alley, 1979, p.112)
- Least Restricted Environment (LRE): "students will be engaged with their same age typical developing peers in inclusive classrooms to the maximum extent as possible" Adamek & Darrow, 2018, p. 56).
- Mean (*M*): "the sum of all the values in a group, divided by the number of values in that group" (Salkind, 2017, p. 22)
- Median (*Mdn*): "midpoint in a set of scores, point at which one half (50%) fall above and one half (50%) fall below" (Salkind, 2017, p. 26)
- Mode (*Mo*): "value that occurs most frequently" (Salkind, 2017, p. 29)
- Modification: "used when a student is not able to complete the same assignment or participate in the same way as the other students in the classroom" (Adamek & Darrow, 2018, p. 116).
- Peer-Assisted Learning Strategies (PALS): "instruction that uses partner and small group tutoring" (Walkup-Amos, 2019, p.139)
- Picture Exchange Communication System (PECS): "pictures or icons with words to help students on the spectrum communicate" (Hourigan, R., & Hourigan, A., 2009, p.41).
- School Classification: According to the National Center for Education Statistics (NCES), "school classifications are based on urban (1,000 people per square mile), suburban (area outside principal city within urban area), and rural (less than 1,000 per square miles

outside principal city or urban area)”

https://nces.ed.gov/programs/edge/docs/EDGE_NCES_LOCALE.pdf

- Standard Deviation (*SD*): “represents that average amount of variability in a set of scores or it’s the average distance from the mean” (Salkind, 2017, p. 46)
- Task Analysis: “step by step support to facilitate a student’s independence in completing a task” (Meadan et a., 2011, p.32)
- Typically Developing (TD): a student who does not receive special education services
- Universal Design for Learning (UDL): “uses multiple means of representation or a variety of ways that students can acquire information and demonstrate understanding” (Darrow & Adamek, 2018, p.62)

Chapter 2

Literature Review

There is a substantial amount of research regarding inclusion practices of special needs students in the regular education classroom. However, little research exists on including students with autism in the music classroom, evidence-based strategies, teacher training, Individualized Education Program (IEP), and music educator perceptions. Review of literature addresses key aspects of inclusion in the music classroom including: (a) understanding autism, (b) collaboration with other professionals, (c) strategies to use with students with autism, (d) music educators' attitudes and training, (e) IEP, and (f) accommodations and modifications for students with autism. Therefore, resources in this literature review came from scholarly peer-reviewed journal articles, research studies, un-published theses and dissertations, and textbooks.

Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized by impairments in verbal and nonverbal communication, social interaction, repetitive actions, and severely limited activities and interests (Abduelkarem, et al. 2019; American Psychiatric Association, 2013; Darrow, 2009a; Darrow & Armstrong, 1999; Dempsey & Foreman, 2001; Draper, 2020a; Gilbert, 2013). According to the Centers for Disease Control and Prevention (2020), one in 54 children were identified with ASD based on health and special education records across the United States. In addition, males are four times more likely to have autism than females. Characteristics of autism may be present in a combination of behaviors and severity. Therefore, the range of abilities and degree of developmental delays are all individual differences that are unique to each child (Darrow, 2009a; Dempsey & Foreman, 1999).

Although there are several different characteristics of autism, not all students with autism have all characteristics. Students with ASD may have difficulty communicating and expressing their needs, repeating words or phrases, demonstrate resistance to change, display minimal eye contact, or have a hard time interacting with their peers (Darrow, 2009a). According to the National Autism Center's (2015) *Evidence-Based Practice and Autism in the Schools* (2nd ed), many students with autism lack empathy and have difficulty understanding nonverbal communication. In fact, students with autism may have conversations that are one-sided or may not understand how their behavior hurts others. Also, they may not participate in social games, isolate from others, or appear to oversee other students (National Autism Center, 2015). However, students with ASD can learn and make developmental gains when provided with the appropriate educational supports in the music classroom (Darrow, 2009a).

Development of Inclusion

Public Law 94 -142 passed in 1975, stated students with disabilities were to be educated in the least restricted environment (LRE) within a school setting (Atterbury, 1986; Gfeller et al., 1990; Mazur, 2004; Thompson, 1990). This law sparked movement toward mainstreaming in our schools that included special needs students in the regular classroom for one or more parts of the day (Mazur, 2004). The intent of mainstreaming was to provide a positive educational and social environment for students with disabilities (Atterbury, 1986). In 1990, Public Law 101- 476 was passed, the Individuals with Disabilities Education Act (IDEA), which added autism to the list of recognized disabilities. Therefore, IDEA made it possible for students with autism to be included into music classrooms with their typically developing peers (Jellison & Draper, 2015; Mazur, 2004; Whipple & VanWeelden, 2012).

Inclusion means all students attend regular music classes with their peers and cannot be denied access based on their disability. Darrow (1999) stated inclusion minimizes the effects of labeling students with disabilities in the school environment. Also, inclusion creates a diverse and healthy environment for students but can be frustrating for music educators (Hammel, 2004). Furthermore, music educators must collaborate and communicate with special educators, music therapists, and other related professionals to help students with autism feel included in the music classroom (Whipple & VanWeelden, 2012). Accordingly, music educators must also be familiar with IDEA to make inclusion successful in the music classroom.

IDEA outlines six principles that music educators need to be familiar with when teaching students with autism: (a) individuals with disabilities have the right to receive free and appropriate education, (b) students are entitled to nondiscriminatory evaluation, (c) education for students with disabilities must be appropriate, (d) must be provided in the LRE, (e) parents and students have the right to participate and be an equal partner in the development, and decision-making process, and (f) a set of procedural guidelines and safeguards to protect students with disabilities from biased or unfair practices (Darrow & Adamek, 2012; Draper, 2020b; Hammel & Hourigan, 2011). Therefore, music educators are required by law to (a) know the impact of the students' disability on their ability to participate and learn, (b) implement instructional accommodations and modifications, (c) evaluate students' progress, and (d) create opportunities for positive interactions between students with and without disabilities (Davis et al., 1999). In addition, music educators must ensure they follow federal laws regarding students with autism. Finally, students with autism must have equal access to all aspects of the music curriculum and program (Hammel & Hourigan, 2011).

Collaboration

Music educators need to collaborate with other professionals to gather information about the special needs and abilities of students with autism (Adamek & Darrow, 2018; Darrow, 2009b; Darrow & Adamek, 2018; Draper, 2019c; Draper, 2020b; Hammel, 2004; Hammel & Hourigan, 2011; Hock et al., 1990; Hourigan & Hourigan, 2009; Vaiouli & Ogle, 2015). First, music educators need to communicate with special education teachers to discuss the student's IEP, strengths and weaknesses, behavior and sensory issues, and the student's disability to determine the best approach to teach students with autism in the music classroom (Darrow, 2009b; Darrow & Adamek, 2018; Draper, 2019c; Hammel & Hourigan, 2011). Second, music educators need to collaborate with parents regularly to determine the interests, fears, strengths, hobbies, or concerns for students with autism in the music classroom (Draper, 2019b; Hourigan & Hourigan, 2009; Vaiouli & Ogle, 2015). Third, music educators need to collaborate with other professionals such as administration, regular education teacher, paraprofessionals, occupational therapist, speech therapist, behavior specialist, or music therapist to determine appropriate strategies to teach students with autism in the music classroom (Darrow, 2009b; Darrow & Adamek, 2018; Draper, 2019c; Draper, 2020b; Hammel, 2004; Hammel & Hourigan, 2011). Therefore, music educators must view collaboration as an ongoing process for music educators to effectively teach students with autism. Finally, collaboration helps determine the best methods or strategies to use within the music classroom (Adamek & Darrow, 2018; Whipple & VanWeelden, 2012).

Communication Strategies for Students with Autism

One of the characteristics of autism is persistent deficits in communication. Therefore, music educators need to be knowledgeable of the different types of communication strategies to

assist students with autism (Darrow, 2009a; Grossi-Kliss, 2006; Hess et al., 2008; Hourigan & Hourigan, 2009; Whipple & VanWeelden, 2012). First, music educators can use a Picture Exchange Communication System (PECS) to make pictures with words to help students with autism communicate. The PECS program has developed several music pictures for students with autism (Hourigan & Hourigan, 2009). Second, music educators can provide additional cues such as gesturing, pointing, facial expressions, or even sign language to help students with autism communicate more effectively (Darrow, 2009a; Grossi-Kliss, 2006; Whipple & VanWeelden, 2012). Also, music educators need to choose words carefully and limit the number of words that are spoken at one time. Next, some students with autism have limited verbal skills. Music educators need to break down or chunk words for students with autism to comprehend and communicate better (Hourigan & Hourigan, 2009). Music educators must implement communication strategies to decrease potential behavior issues and to teach students with autism more efficiently within the music classroom (Hammel & Hourigan, 2013; Hammel & Hourigan, 2017; Hourigan & Hourigan, 2009).

Behavior Strategies for Students with Autism

Music educators need to implement proactive strategies to control behavior issues for students with autism in the music classroom (Hourigan & Hourigan, 2009). First, students with autism need a well-prepared and structured classroom environment. Second, they need a music classroom that is predictable and consistent. Third, students with autism need structured interactions with peers without disabilities since those peers can provide a model of appropriate behavior to them (Darrow, 2009b; Hammel & Hourigan, 2017; Hourigan & Hourigan, 2009). Also, music educators need to know the possible “triggers” for students with autism to minimize behavior issues. Possible triggers may include loud noises, pain or discomfort, attention, or other

environmental conditions. Therefore, if music educators know the triggers for students with autism, they can prevent or control behavior issues in the music classroom (Hourigan & Hourigan, 2009).

Peer-Assisted Strategies for Students with Autism

Students with and without autism benefit academically and socially when interacting with each other (Jellison et al., 2017). Peer-Assisted Learning Strategies (PALS) is a form of instruction that uses a partner and small groups. Students are paired together to engage with each other and produce academic progress. First, a group of students write quarter and eighth notes using stick notation. Then, the students color code the quarter and eighth notes. Each group member can distinguish the quarter notes from the eighth notes by recognizing the color while learning the notes at the same time (Walkup-Amos, 2020). Another example would be to pair a student with autism with a student who does not have autism to learn recorder parts together (Darrow, 2009a; Draper, 2019a; Jellison et al., 2017). Additionally, research indicated that PALS provide positive academic outcomes and social benefits for students who are defined as vulnerable, such as students with autism (Jellison et al., 2017). Overall, peer interactions between students with autism and their typically developing peers in the music classroom are usually positive in nature (Walkup-Amos, 2020).

Instructional Strategies for Students with Autism

Music educators need to individualize music lessons for students with autism to meet their musical goals (Darrow, 1990; Mazur, 2004). Music educators can implement different strategies to help students with autism be successful. First, Velcro strips can help students with autism hold mallets or small instruments. Next, music educators can color code music or instruments to make reading easier for them. Additionally, music educators can provide written

rehearsal schedules, adapt lessons, or even modify lessons for students with autism (Draper, 2020a; Hammel, 2004; Whipple & VanWeelden, 2012).

Universal Design for Learning (UDL) is a strategy that calls for multiple means of instructional representation (Darrow & Adamek, 2018). First, music educators need to provide instruction by presenting visuals, manipulatives, and technology. Second, music educators need to implement a variety of writing, singing, playing, and composing in the music classroom. Next, music educators must engage students with autism in the learning process by playing instruments, assistive technology for communicating, interests, pictures, and so forth (Darrow & Adamek, 2018; Swanson, 2019). Therefore, music educators need to incorporate a variety of UDL strategies in each lesson to help all students be successful in the music classroom (Darrow & Adamek, 2012; Darrow & Adamek, 2018; Swanson, 2019).

Music educators can include evidence-based practices (EBP) interventions during instruction time in the music classroom (Abduelkarem et al., 2019; Swanson, 2019). According to the National Autism Center (2015), modeling and schedules are evidence-based practices that benefit students with autism in the music classroom. Through modeling, students with autism can see how to hold a bow or buzz into a mouthpiece (Hammel & Hourigan, 2013). Additionally, picture schedules allow students with autism to know when activities are beginning, changing, or finished in the music classroom (Abduelkarem et al., 2019; Meadan et al., 2011; Swanson, 2019; Wong et al., 2015). Therefore, music educators need to familiarize themselves with interventions and explore a variety of resources to ensure that students with autism are successful learners in the music classroom (National Autism Center, 2015).

Visual Supports for Students with Autism

Music educators must create a learning environment to meet the needs and abilities of students with autism by incorporating visual supports into their classrooms (Darrow, 1999; Meadan et al., 2011; Whipple & VanWeelden, 2012). Picture schedules help students with autism anticipate the order of events and activities that occur in the music classroom (Cohen & Sloan, 2007). Additionally, visual supports help students with autism gain a fundamental understanding of the material being taught in the classroom. Also, behavior problems are less likely to occur for students with autism if they know what to expect in the music classroom. Overall, visual supports aid students with autism in the music classroom (Meadan et al., 2011).

Several different types of visual supports have been effective for students with autism in the music classroom. First, visual schedules indicate activities currently taking place and future activities in the music classroom. Second, a visual task analysis can help students with autism complete a task in music (Meadan et al., 2011). Third, music educators can color code pitches, instrument parts, or listening activities to help students with autism have a visual representation of the material being taught in the music classroom (Whipple & VanWeelden, 2012). Therefore, students with autism gain a fundamental understanding of the organization, routines, and musical elements in the music classroom through visual supports (Meadan et al., 2011).

Music Educator Attitudes

Music educators' attitudes determine the quality of the environment they create in the classroom (Turnbull & Shultz, 1979). According to Darrow (1999), music educators often have negative attitudes when teaching students with autism in the classroom. Music educators state that students with autism demand an excessive amount of teacher time and impede the educational progress of other students (Darrow, 1999; Darrow, 2009b). However, Jellison and

Taylor (2007) found that music educators generally had positive attitudes toward students with autism but less than positive attitudes regarding resources, preparation, information, and time allowed for instruction. Music educators in small, urban schools state they do not have the resources, materials, and devices to use when teaching students with autism as well as less consultation with special education experts. Whereas music educators in high socioeconomic schools were provided with resources, materials, devices, and consultation they needed to teach students with autism (VanWeelden & Whipple, 2014).

Music Educator Training

Music educators must have adequate instructional training to teach students with autism (Gfeller et al., 1990; Salvador, 2010; Sideridis & Chandler, 1995). Salvador (2010) discovered out of 109 college institutions surveyed, only 29.6% required a course in teaching music to special populations such as students with autism. Additionally, Colwell and Thompson (2000) indicated only 74% out of 171 college institutions across the United States had at least one course in special education available for music majors. The remaining 26% of college institutions did not offer a course in special education for music majors. Therefore, music educator programs need to provide future music educators resources and strategies for teaching students with autism in the music classroom (Salvador, 2010).

Music Educator Professional Development

Music educators must have appropriate professional development to learn how to teach students with autism in the music classroom (Colwell & Thompson, 2000). According to Gfeller et al. (1990), only 15% of music educators had attended workshops and in-service training for special education students. VanWeelden and Whipple (2014) surveyed 1,128 music educators across the United States and only one-fourth of music educators had attended more than two

workshops in special education during their careers. Only 46% of music educators had attended in-service training related to students with disabilities. Finally, 73% of music educators from the survey revealed they had little or no involvement in the IEP process (VanWeelden & Whipple, 2014). As a result, music educators must attend professional development on teaching students with autism in the music classroom.

Individualized Education Program

Most students with disabilities including autism have an Individualized Education Program (IEP) (Cassidy, 1990; Draper, 2020; Hammel, 2004; Hock et al., 1990; Swanson, 2019). Music educators typically do not participate in IEP meetings due to time constraints, so they must become familiar with the IEP document to review behavior plans, accommodations, or modifications for students with autism (Draper, 2020b; Hammel, 2004). Additionally, it is important for music educators to look at the current goals of the IEP and implement the goals in the music classroom (Draper, 2020b; Roper, 2015; Swanson, 2019). Therefore, music educators must advocate for access to the IEP to assist students with autism in the music classroom (Hammel & Hourigan, 2011).

Accommodations for Students with Autism

The most important section in an IEP is the accommodations list of supports required for students with autism (Draper, 2020b). Accommodations are used when the teacher believes students with autism can achieve the same level of participation or accomplishment as others. Examples of accommodations include items such as formatting, setting, amount of time needed, or response to task in music (Adamek & Darrow, 2018). In addition, Hammel and Hourigan (2017) provided a list of possible accommodations that music educators can use in the classroom such as (a) provide copies of notes from the music lesson, (b) allow extended time to complete a

musical task, (c) preferential seating by the teacher, (d) written study guides, (e) provide hands-on activities, (f) allow extra time to learn the musical scale, or (g) allow students with autism to use a visual fingering chart when learning how to play the recorder. Therefore, music educators can use a variety of accommodations in the IEP to strengthen their request for increased services in the music classroom (Draper, 2020b).

Modifications for Students with Autism

The list of modifications in the IEP are also required for students with autism (Draper, 2020b). A modification is used when the student is not able to complete the same assignment or participate in the same way as other students in the music classroom (Adamek & Darrow, 2018). Hammel and Hourigan (2017) provided a list of possible modifications to be used for students with autism in the music classroom such as (a) match pitch on E-flat instead of having to sing a song in E-flat, (b) learn at least two musical terms in a piece of music instead of all the musical terms, or (c) improvise rhythmic patterns while playing an E-flat instead of improvising in the key of E-flat within the context given by the instructor. Therefore, music educators must know and implement the modifications in the IEP for students with autism in the music classroom (Adamek & Darrow, 2018; Darrow & Adamek, 2018; Draper, 2020b; Hammel & Hourigan, 2017).

Inclusion practices for students with autism include music educators' perceptions, training, IEP, and strategies for teaching students with autism in the music classroom. First, music educators lack competence when teaching students with autism due to a lack of training and professional development. Second, music educators need to be familiar with the Individualized Education Program (IEP). Third, music educators need to know instructional strategies to teach students with autism. Also, there is a need for more research on how to teach

students with autism in the music classroom (Colwell & Thompson, 2000; Darrow, 1999; Mazur, 2004). My dissertation addresses gaps in the literature about music educators' training, perceptions, knowledge of IEP, and instructional strategies. It also provides a resource for future music educators on how to teach students with autism in the music classroom.

Chapter 3

Methods and Procedures

The purpose of this descriptive, quantitative study was to survey K-6 music educators regarding their strategies, training, and perceptions when teaching students with autism in the music classroom. This chapter outlines the methodology, research design, data collection instrument, reliability and validity, procedures, and data analysis of the study. The following research questions pertain to inclusion practices of K-6 music educators including their strategies, training, and perceptions of students with autism in the music classroom. The following research questions were addressed:

1. What evidence-based strategies do K-6 music educators use to teach students with autism in the music classroom?
2. What extent of educational preparation exists among K-6 music educators when teaching students with autism?
3. What are K-6 music educators' familiarity with the Individualized Education Program (IEP)?
4. What are K-6 music educators' perceptions of students with autism in the music classroom?
5. Are there differences among K-6 music educators' perceptions based on years of teaching experience, degree, school classification, and school size?

Research Design

A descriptive quantitative survey research design was used to determine the trends, and attitudes of K-6 music educators (Creswell, 2014; Dillman, Smyth & Christian 2014). Survey was designed to collect information based on the literature. The online survey was conducted

through Qualtrics. Results were used to generalize or draw inferences from K-6 music educators regarding their strategies, training, and perceptions of students with autism in the music classroom.

There are several advantages to survey research. First, survey research can reach thousands of people in a short amount of time (Wright, 2017). Second, surveys produce data based on real-world observations. Third, surveys are more likely than other approaches to obtain data based on a representative sample and can be generalized to a population (Kelley et al., 2003). Finally, data analysis is less time consuming in comparison to some other methods as data collection can be completed in a relatively short time frame and statistical software can be used to analyze the results (Rahman, 2017).

There are some disadvantages to survey research. First, the data from the survey may lack details or depth on the topic being investigated. Second, securing a high response rate can be hard to control in survey research (Kelley et al., 2003). Third, survey research cannot control the environment where the participants provide the answers to the survey. Fourth, the results have limited outcomes due to closed type questions and structured format. Finally, the results only provide a snapshot of the phenomenon being surveyed (Matveev, 2002).

Participants

The participants were K-6 music educators from the United States, currently members of the National Association for Music Education (NAfME). NAfME is a professional organization that provides resources to music educators at all levels. They were invited to participate through NAfME state educator list. Music educators received an email invitation to complete the survey regarding their strategies, training, and perceptions of students with autism in the music classroom.

Data Collection Instrument

I designed a survey based on the literature. Survey items pertained to (a) strategies used with students with autism, (b) professional development the participants have taken regarding students with autism, (c) familiarity of the IEP, (d) music educators' perception of students with autism, and (e) demographics of the participants and their schools. (See [Appendix D.](#))

The first research question (*“What evidence-based strategies do K-6 music educators use to teach students with autism?”*) was developed to understand the types of strategies music educators use for students with autism in their classroom. The first three items in the survey relate to the first research question with a five-point Likert-type scale ranging from never to always. The items are divided into categories: (a) classroom management, (b) classroom singing activities, and (c) classroom instrument playing activities.

The second research question (*“What extent of educational preparation exists among K-6 music educators when teaching with students with autism?”*) was developed to determine how much training and professional development K-6 music educators have taken on teaching students with autism. Survey items four through nine on the survey asked the participants how many classes they have taken as an undergraduate or graduate student, amount of professional development, how they rate their training, and if they feel prepared to teach students with autism.

The third research question (*“What is K-6 music educators' familiarity with the Individualized Education Program (IEP)?”*) was developed to determine if K-6 music educators are familiar with Individualized Education Program (IEP) for students with autism. Survey item ten had a five-point Likert scale ranging from not familiar at all to very familiar based on different parts of the IEP. Survey item eleven asked music educators if they participate in IEP

meetings for students with autism by selecting a response of yes or no. Survey item twelve asked the participants if they receive any information pertaining to the IEP for students with autism.

The fourth research question (“*What is K-6 music educators’ perception of students with autism in the music classroom?*”) was developed to determine how K-6 music educators feel about students with autism being included in the music classroom. Survey items thirteen and fourteen consist of two five-point Likert scales ranging from strongly disagree to strongly agree that pertains to music educators’ perceptions.

The fifth research question (“*Are there differences among K-6 music educators’ perceptions based on years of teaching experience, degree, school classification, and school size?*”) was developed to determine if there were any differences among music educators’ perceptions of students with autism related to number of years teaching, educational degree, school classification, and school size.

Reliability and Validity

Validity can be difficult to establish with specific constructs in survey research. Survey items were based on a literature review addressing the aspects and components of students with autism. Content validity must represent all facets of a given construct. Therefore, the Delphi method was used to determine the content validity in this study (Eggers & Jones, 1998). I had three special educators review my survey items and provide feedback. After the expert analysis was given on the survey items, I made the necessary corrections to my survey items. Some of the corrections were misspelled words, changing autism-specific jargon to words for the reader to understand, and deleted words that did not belong in some of the survey items. The Delphi method helped my survey items become easier for the reader to understand and increased my content validity.

There are a few threats to internal validity that need to be recognized in this study. Internal validity threats are experimental procedures, treatments, or experiences of the participants that threaten my ability to determine correct inferences from the population being studied (Creswell, 2014). K-6 music educators could have had certain characteristics that require them to give certain answers due to their beliefs. They may have dropped out of the study at any time, which made their results unknown. The last threat to internal validity is that the participants may have communicated with each other during this study (Creswell, 2014).

There are also a few threats to external validity that need to be recognized in this survey. External validity threats occur when I draw incorrect inferences from the sample data to other persons, settings, or situations (Creswell, 2014). External validity threats occur due to the characteristics selected, the uniqueness of the survey, and the timing of the survey. External validity threats occur when generalizations are made to groups that are not related to the study. My low response rate is also a threat to external validity. I will only generalize the results to groups and populations represented by those responding to my survey to control external validity threats (Creswell, 2014).

Procedures

After Institutional Review Board (IRB) approval, a pilot study was distributed to 98 Alabama retired music educators to ensure the validity of the survey instrument with only 26 responses received. The participants also offered feedback through an open-ended textbox at the end of the survey. I also used the pilot data for trial runs of data analysis procedures. After completing the pilot study, I analyzed the data and adjusted the survey instrument. The survey adjustments were two spelling errors and correcting one survey item with two answer choices instead of one answer choice. The current survey has 27 items (See [Appendix D](#)).

I employed the NAFME *Research Assistance Program* to email the survey to the participants. Dillman et al. (2014) suggested the researcher needs to send multiple email reminders to increase the response rate of the survey. Therefore, the K-6 music educators received a total of two emails within a two-week time frame with a link to complete the survey. The invitation email included a letter, an estimated amount of time to complete the survey, and the survey link. (See [Appendix B](#)). An email reminder was sent to music educators seven days after the invitation email (See [Appendix C](#)). Music educators had two weeks to complete the survey after the first email reminder. All results were anonymous, and no compensation was given to the participants. No identifiable information was linked to the participants' responses.

Data Analysis

Survey responses were downloaded from Qualtrics and imported into the Statistical Package for Social Sciences (SPSS) data file. SPSS was used to analyze the data. Descriptive statistics were used to organize and describe the characteristics of the survey results (Salkind, 2017). A Kolmogorov-Smirnov test was conducted to determine the normality of the descriptive statistics. The significance level for each test was smaller than .05; therefore, the data were not normally distributed. Based on the results, I used a non-parametric test to analyze the data from the survey (Ross & Shannon, 2016). Data from the fifth research question were analyzed using R: A Language and Environment for Statistical Computing software program.

Data analysis procedures are listed by each research question below. The first research question determined the types of evidence-based strategies used for students with autism in the music classroom. The results from the first research question were analyzed by using mean, median, mode, and frequencies. The second research question addressed the extent of educational knowledge that exists among K-6 music educators when teaching students with

autism. Results from research question two were analyzed using descriptive statistics including mean, median, mode, and frequencies. The third research question determined the familiarity of K-6 music educators with the Individualized Education Program (IEP). Results from research question three were analyzed using mean, median, mode, and frequencies. The fourth research question determined K-6 music educators' perception of students with autism. Results from the fourth research question were analyzed using mean, median, mode, and frequencies. The fifth research question determined if there are differences among K-6 music educators' perceptions based on years of teaching experience, degree, school classification, and school size. Results from the fifth research question were analyzed by Chi-Square Test of Independence and a non-parametric version of a MANOVA. See Table 1 for a summary of the research questions, survey items, and data analysis procedures.

There were a few adjustments made in the analysis section. First, when I ran the non-parametric of a MANOVA, I grouped educators with more than 1001 students into one category since the sample size was small ($n = 8$). Next, the R studio program automatically adjusted for multiple comparisons within the program. My results were not statistically significant; therefore, there was no reason to worry about Type I errors. These results are inconclusive due to my response rate being low. Additional studies with a larger sample size are needed.

Table 1*Quantitative Analysis of Data*

Research Questions	Survey items	Data Analysis Procedure
1. What evidence-based strategies do K-6 music educators use to teach students with autism?	Questions 1-3 Three Likert type scales: never to always	Mean Median Mode Frequencies
2. What extent of educational preparation exists among K-6 music educators when teaching students with autism?	Questions 4-9 Two yes/no questions Three selection questions One Likert type scale-very poor to excellent	Mean Median Mode Frequencies
3. What are K-6 music educators' familiarity with the Individualized Education Program?	Questions 10-12 One Likert type scales: not familiar at all to very familiar Two yes and no questions	Mean Median Mode Frequencies
4. What are K-6 music educators' perceptions of students with autism in the music classroom?	Questions 13 & 14 Two Likert type scales: strongly disagree to strongly agree	Mean Median Mode Frequencies
5. Are there differences among K-6 music educators' perceptions based on years of teaching experience, degree, school classification, and school size?	Questions 15-20 Selection questions Years of experience Degree level School classification School size	Chi-Square Test of Independence Non-parametric of a MANOVA Mean, Standard Deviation

Chapter 4

Results

The purpose of this descriptive, quantitative study was to survey K-6 music educators regarding their strategies, training, and perceptions when teaching students with autism in the music classroom. I employed the NAFME *Research Assistance Program* to email the survey to K-6 music educators in the United States. Dillman et al. (2014) suggested the researcher needs to send multiple email reminders to increase the response rate of the survey. Therefore, the K-6 music educators received a total of two emails within a two-week time frame with a link to complete the survey. The participants had two weeks to complete the survey after they received the first email reminder. A total of 6,675 email invitations was sent and a total of 178 responses was received from both emails. Among the responses, 30 participants did not complete 50% or more of the entire survey. One hundred and forty-eight ($N = 148$) survey responses were usable for the current study (usable rate = 2.2%). All results were anonymous, and no compensation was given to the participants. No identifiable information was linked to the participants' responses. This chapter includes data analysis for each research question.

Participant Demographics

The NAFME *Research Assistance Program* was used to email the survey to K-6 music educators in the United States. There were 14 Likert-type scale items and four yes or no items. The second section contained six demographic items. The participants ($N = 148$) represented 44 out of 50 states and one participant from outside of the United States. See Table 2 for total number of participants by state.

Table 2

Participants by State

State	<i>n</i>	%
Alabama	6	4.1
Alaska	1	0.7
Arizona	2	1.4
Arkansas	8	5.4
California	2	1.4
Colorado	2	1.4
Connecticut	5	3.4
Delaware	2	1.4
Florida	7	4.7
Georgia	3	2.0
Hawaii	1	0.7
Idaho	2	1.4
Illinois	8	5.4
Indiana	2	1.4
Iowa	3	2.0
Kansas	4	2.7
Kentucky	2	1.4
Louisiana	1	0.7
Maine	2	1.4
Maryland	6	4.1
Massachusetts	3	2.0
Michigan	1	0.7
Minnesota	3	2.0
Mississippi	1	0.7
Missouri	4	2.7
Montana	1	0.7
Nebraska	3	2.0
New Jersey	5	3.4
New Mexico	3	2.0
New York	7	4.7
North Carolina	1	0.7
Ohio	7	4.7
Oklahoma	1	0.7
Oregon	3	2.0
Pennsylvania	9	6.1
Rhode Island	2	1.4
South Carolina	4	2.7
Tennessee	7	4.7
Vermont	1	0.7
Virginia	3	2.0
Washington	3	2.0
West Virginia	1	0.7
Wisconsin	2	1.4
Wyoming	3	2.0
Outside of United States	1	0.7

Participants ($N=148$) were asked about their K-6 school classification, including urban schools (16.2%), rural schools (33.1%), and suburban schools (50.7%). See Table 3 for total number of participants by school classification.

Table 3

Participants by School Classification

School Classification	<i>n</i>	%
Urban	24	16.2
Rural	49	33.1
Suburban	75	50.7

Music educators were asked about total enrollment of students in their K-6 school. Schools with less than 500 students were 54.7% ($n = 81$), schools with 501-1000 students were 39.9% ($n = 59$), schools with 1001-2000 students were 4.7% ($n = 7$), and schools with more than 2001 students were 0.7% ($n = 1$). See Table 4 for number of students.

Table 4

Number of Students in K-6 Schools

School Enrollment	<i>n</i>	%
Less than 500	81	54.7
501-1000	59	39.9
1001-2000	7	4.7
More than 2001	1	0.7

Music educators were asked about the number of students who received free or reduced lunch. Approximately 10.1% ($n = 15$) of students received none or almost none, 27% ($n = 40.0$)

of their students received less than half, and 17.6% of their students ($n = 26$) received half of free or reduced lunch. Number of students who received more than half were 20.3% ($n = 30$), and students who received almost all or all were 25% ($n = 37$). See Table 5 for number of students who received free or reduced lunch.

Table 5

Students Who Receive Free or Reduced Lunch in K-6

Free or Reduced Lunch	<i>n</i>	%
None/Almost None	15	10.1
Less than Half	40	27.0
Half	26	17.6
More than half	30	20.3
Almost all/all	37	25.0

Next, participants were asked their current educational degree level. Music educators with a bachelor's degree 28.4% ($n = 42$), master's degrees 64.2% ($n = 95$), education specialist's degrees 3.4% ($n = 5$), doctoral degrees 2% ($n = 3$), and other degrees 2% ($n = 3$) were master's degree ($n = 1$) plus 30 graduate credits, adaptive music education degree ($n = 1$), and bachelor's degree with Orff Level Training ($n = 1$). See Table 6 for current educational degree levels.

Table 6

Participants Current Educational Degree Level

Educational Degree	<i>n</i>	%
Bachelor's	42	28.4
Master's	95	64.2
Education Specialist	5	3.4
Doctoral	3	2.0
Other	3	2.0

The final demographic question addressed the number of years of classroom music teaching experience. Participants with less than five years of teaching were 13.5% ($n = 20$), six

to 15 years of teaching 25% ($n = 37$), 16 to 25 years of teaching 42.6% ($n = 63$), 26 to 35 years of teaching 11.5% ($n = 17$), and 36 or more years of teaching 7.4% ($n = 11$). See Table 7 for number of years the participants have taught music in the classroom.

Table 7

Participants' Number of Years Taught in the Music Classroom

Years of Teaching Experience	n	%
Less than 5	20	13.5
6-15	37	25.0
16-25	63	42.6
26-35	17	11.5
36 or more	11	7.4

Research question 1: What evidence-based strategies do K-6 music educators use to teach students with autism?

Strategies for Classroom Management

Research question one asked: *What evidence-based strategies do K-6 music educators use to teach students with autism?* Survey items one through three addressed this research question. Music educators were asked to provide their agreement level with several statements regarding their strategies for classroom management for students with autism. Using a five-point Likert-type scale 1 (*Never*) to 5 (*Always*). I used descriptive statistics to analyze the responses. Most participants reported they always used preferential seating ($M = 4.24$; $Mdn = 4$; $Mo = 5$; $SD = 0.822$) and consistent routines ($M = 4.43$; $Mdn = 5$; $Mo = 5$; $SD = 0.661$) for students with autism. Almost half of the participants reported they sometimes used picture schedules ($M = 2.61$; $Mdn = 3$; $Mo = 3$; $SD = 1.243$) and Picture Exchange Communication System (PECS) ($M = 2.89$; $Mdn = 3$; $Mo = 3$; $SD = 1.181$) for students with autism. See Table 8 for descriptive

information regarding frequencies and percentages of the participants' responses for classroom management.

Table 8

Strategies for Classroom Management

	Never		Rarely		Sometimes		Often		Always	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Preferential Seating	1	0.7	4	2.7	18	12.2	60	40.5	65	43.9
Consistent Routine	0	0.0	1	0.7	11	7.4	60	40.5	76	51.4
Picture Schedule	37	25.0	30	20.3	48	32.4	20	13.5	13	8.8
PECS	25	16.9	25	16.9	52	35.1	34	23.0	12	8.1

Cronbach's alpha was used to estimate the reliability of the scale items. An alpha level that is close to one is very good, but numbers close to zero represent poor internal consistency (Cronk, 2020). I conducted internal reliability tests using Cronbach's alpha coefficient on each of the four items (preferential seating, consistent routine, picture schedules, and PECS) related to strategies for classroom management. Overall, Cronbach's alpha ($\alpha = 0.675$) indicated a low reliability. Cronbach alpha item statistics for classroom management were preferential seating ($M = 4.24$; $SD = 0.822$), consistent routine ($M = 4.43$; $SD = 0.661$), picture schedule ($M = 2.61$; $SD = 1.243$), and PECS ($M = 2.89$; $SD = 1.181$).

Strategies for Classroom Singing Activities

The majority of music educators reported (a) always model procedures on how to sing ($M = 4.43$; $Mdn = 5$; $Mo = 5$; $SD = 0.912$), (b) always use the echo strategy ($M = 4.45$; $Mdn = 4.5$; $Mo = 5$; $SD = 0.632$) (c) sometimes use PECS during singing activities ($M = 2.88$; $Mdn = 3$; $Mo = 3$; $SD = 1.239$) and (d) sometimes color coded pitches or rhythms ($M = 2.86$; $Mdn = 3$; $Mo = 3$; $SD = 1.292$) for students with autism.. See Table 9 for descriptive statistics for participants' responses for classroom singing activities.

Table 9*Strategies for Classroom Singing Activities*

	Never		Rarely		Sometimes		Often		Always	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
PECS	28	18.9	24	16.2	49	33.1	32	21.6	15	10.1
Model Procedures	5	3.4	0	0.0	13	8.8	38	25.7	92	62.2
Echoing	1	0.7	1	0.7	2	1.4	70	47.3	74	50.0
Color coded pitch or rhythm	29	19.6	30	20.3	38	25.7	34	23.0	17	11.5

Cronbach's alpha was used to estimate the reliability of the scale items. I conducted internal reliability tests using Cronbach's alpha coefficient on each of the four items (PECS, model procedures, echoing, and color code the pitches or rhythms) related to strategies for classroom singing activities. Overall, Cronbach's alpha ($\alpha = 0.608$) indicated a low reliability. Cronbach alpha item statistics for classroom singing activities were PECS ($M = 2.88$; $SD = 1.239$), model procedures on how to sing ($M = 4.43$; $SD = 0.912$), echoing ($M = 4.45$; $SD = 0.632$), and color coded the pitches or rhythms ($M = 2.86$; $SD = 1.292$).

Strategies for Classroom Instrument Playing Activities

Music educators reported a variety of responses to classroom instrument activities such as: (a) sometimes used PECS when playing instruments ($M = 2.93$; $Mdn = 3$; $Mo = 3$; $SD = 1.246$), (b) always modeled how to hold or play an instrument ($M = 4.69$; $Mdn = 5$; $Mo = 5$; $SD = 0.658$), (c) often used a peer helper while playing instruments ($M = 3.74$; $Mdn = 4$; $Mo = 4$; $SD = 0.860$), and (d) never used a visual task analysis when playing instruments ($M = 2.72$; $Mdn = 3$; $Mo = 1$; $SD = 1.335$) for students with autism. See Table 10 for descriptive statistics for participants' responses for classroom instrument playing activities.

Table 10*Strategies for Classroom Instrument Playing Activities*

	Never		Rarely		Sometimes		Often		Always	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
PECS	27	18.2	24	16.2	45	30.4	37	25.0	15	10.1
Model Procedures	1	0.7	3	2.0	1	0.7	31	20.9	112	75.7
Peer Helper	1	0.7	12	8.1	37	25.0	73	49.3	25	16.9
Visual Task Analysis	40	27.0	23	15.5	39	26.4	31	20.9	15	10.1

Cronbach’s alpha was used to estimate the reliability of the scale items. I conducted internal reliability tests using Cronbach’s alpha coefficient on each of the four items (PECS, model procedures on how to hold or play an instrument, peer helper, and visual task analysis) under the strategies for classroom instrument playing activities. Overall, Cronbach’s alpha ($\alpha = 0.552$) indicated a low reliability. Cronbach alpha item statistics for classroom instrument playing activities were PECS ($M = 2.93$; $SD = 1.246$), model procedures on how to hold or play an instrument ($M = 4.69$; $SD = 0.658$), peer helper ($M = 3.74$; $SD = 0.860$), and visual task analysis ($M = 2.72$; $SD = 1.335$).

Research question 2: What extent of educational preparation exists among K-6 music educators when teaching students with autism?

Six survey items addressed this research question. Survey item four asked participants if teaching students with autism was addressed in any of their undergraduate or graduate classes. The answer choices were yes or no. Over half the participants (56.8%) reported they did not receive any training ($M = 1.57$; $Mdn = 2$; $Mo = 2$; $SD = 0.497$) for students with autism during their undergraduate or graduate classes. See Table 11 for descriptive information regarding frequencies and percentages of the participants’ responses.

Table 11

Teaching Students with Autism Addressed During Undergraduate or Graduate Classes

Classes	<i>f</i>	%
Yes	64	43.2

No	84	56.8
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Survey item five asked music educators how many of their undergraduate classes included information about students with autism. Most music educators (62.2%) indicated they only had one to three classes as undergraduate students ($M = 1.97$; $Mdn = 1$; $Mo = 1$; $SD = 1.342$) that included information about students with autism. See Table 12 for descriptive statistics for participants' responses.

Table 12

Number of Undergraduate Classes Related to Teaching Students with Autism

Classes	<i>f</i>	%
1-3	92	62.2
4-6	12	8.1
7 or more	1	0.7
None at all	43	29.1

Survey item six asked participants how many of their graduate classes included information about teaching students with autism. Over half of the music educators (73.0%) reported they had one to three classes and no classes as graduate students ($M = 2.47$; $Mdn = 2$; $Mo = 1$; $SD = 1.448$) that included information about students with autism. See Table 13 for descriptive statistics for participants' responses.

Table 13

Number of Graduate Classes Related to Teaching Students with Autism

Classes	<i>f</i>	%
1-3	54	36.5
4-6	8	5.4
7 or more	2	1.4
None at all	54	36.5

Survey item seven asked music educators how many professional development trainings included information about teaching students with autism. Music educators' responses varied when asked about professional development trainings: (a) faculty meetings (48%), (b) district level meetings (36.5%), (c) local music conferences (29.1%), (d) state music conferences (45.3%), and (e) none of the above (30.4%). See Table 14 for descriptive statistics for participants' responses for classroom management.

Table 14

Professional Development Opportunities

Professional Development	<i>f</i>	%
Faculty meetings	71	48.0
District level meetings	54	36.5
Local music conferences	43	29.1
State music conferences	67	45.3
None of the above	45	30.4

Survey item eight asked music educators how well their trainings prepared them to meet the needs of students with autism. Most participants reported (a) faculty meetings were average ($M = 2.54$; $Mdn = 3$; $Mo = 3$; $SD = 1.087$), (b) district level meetings were average ($M = 2.73$; $Mdn = 3$; $Mo = 3$; $SD = 0.983$), (c) local music conferences were average ($M = 2.74$; $Mdn = 3$; $Mo = 3$; $SD = 0.970$), and (d) state music conferences were average ($M = 2.96$; $Mdn = 3$; $Mo = 3$; $SD = 1.118$) in preparing them to meet the needs of students with autism. Half of the participants (50%) reported undergraduate or graduate classes were very poor ($M = 2.18$; $Mdn = 2$; $Mo = 1$; $SD = 1.123$) in preparing them to meet the needs of students with autism. See Table 15 for descriptive statistics.

Table 15

Quality of Training Received

	Very Poor		Below Average		Average		Above Average		Excellent	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Faculty meetings	29	19.6	41	27.7	52	35.1	18	12.2	7	4.7
District level meetings	18	12.2	36	24.3	67	45.3	20	13.5	6	4.1
Local music conferences	19	12.8	33	22.3	66	44.6	27	18.2	3	2.0
State music conferences	19	12.8	28	18.9	51	34.5	40	27.0	10	6.8
Undergraduate/Graduate Classes	50	33.8	48	32.4	30	20.3	14	9.5	6	4.1

Cronbach’s alpha was conducted to estimate the reliability of the scale items. I conducted internal reliability tests using Cronbach’s alpha coefficient on each of the four items (faculty meetings, district level meetings, local music conferences, state music conferences, and ungraduated or graduate classes) under the quality of training received for students with autism. Overall, Cronbach’s alpha ($\alpha = 0.598$) indicated a low reliability. Cronbach alpha item statistics for faculty meetings ($M = 2.53$; $SD = 1.071$), district level meetings ($M = 2.73$; $SD = 0.986$), local music conferences ($M = 2.75$; $SD = 0.974$), state music conferences ($M = 2.96$; $SD = 1.120$) and undergraduate or graduate classes ($M = 2.18$; $SD = 1.131$).

Survey item nine asked participants if they felt adequately prepared to teach students with autism based on their training and professional development. Over half of the participants (52%) reported they do feel prepared ($M = 1.48$; $Mdn = 1$; $Mo = 1$; $SD = 0.501$) to teach students with autism based on their training and professional development. See Table 16 for descriptive statistics.

Table 16

Prepared to Teach Based on Trainings and Professional Development

Choices	<i>f</i>	%
Yes	77	52.0
No	71	48.0

Research question 3: What is K-6 music educators’ familiarity with the Individualized Education Program?

Survey items 10 through 12 addressed this research question. Participants ($N = 148$) were asked to provide their agreement level with several statements regarding their familiarity with the Individualized Education Program (IEP). The choices were a five-point Likert-type scale 1 (*Not familiar at all*) to 5 (*Very familiar*). Survey item 10 contained four statements about the IEP (student’s annual goals, student’s behavior goals, current skill level of the student, student’s accommodations or modifications, and student’s supplementary aids and services). The majority of music educators reported (a) very familiar with the student’s annual goals ($M = 3.82$; $Mdn = 4$; $Mo = 5$; $SD = 1.349$), (b) very familiar with the student’s behavior plan ($M = 4.01$; $Mdn = 5$; $Mo = 5$; $SD = 1.254$), (c) very familiar and familiar with the student’s current skill level ($M = 3.60$; $Mdn = 4$; $Mo = 4$; $SD = 1.271$), (d) very familiar with the student’s accommodations and modifications ($M = 4.14$; $Mdn = 5$; $Mo = 5$; $SD = 1.193$), and (e) familiar with the student’s supplementary aids and services ($M = 3.64$; $Mdn = 4$; $Mo = 4$; $SD = 1.257$). See Table 17 for descriptive statistics.

Table 17

Familiarity of the Student’s IEP

	Not familiar at all		Slightly familiar		Somewhat familiar		Familiar		Very familiar	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Annual goals	15	10.1	12	8.1	23	15.1	32	21.6	66	44.6
Behavior plan	7	4.7	18	12.2	19	12.8	27	18.2	77	52.0
Current skill level	14	9.5	15	10.1	31	20.9	44	29.7	44	29.7
Accommodations and Modifications	7	4.7	13	8.8	15	10.1	31	20.9	82	55.4
Supplementary aids and services	13	8.8	16	10.8	27	18.2	48	32.4	44	29.7

Cronbach's alpha was used to estimate the reliability of the scale items. I conducted internal reliability tests using Cronbach's alpha coefficient on each of the five items (student's annual goals, student's behavior plan, current skill level of the student, student's accommodations or modifications, and student's supplementary aids and services) under the familiarity of the IEP for students with autism. Overall, Cronbach's alpha ($\alpha = 0.954$) indicated a high reliability. Cronbach alpha item statistics for the familiarity of the student's annual goals were ($M = 3.82$; $SD = 1.349$), student's behavior plan ($M = 4.01$; $SD = 1.254$), current skill level of the student ($M = 3.60$; $SD = 1.271$), student's accommodations and modifications ($M = 4.14$; $SD = 1.193$) and student's supplementary aids and services ($M = 3.64$; $SD = 1.257$).

Survey item 11 asked participants if they were included in IEP meetings for students with autism. The majority of the participants (80.4%) reported they were not included in IEP meetings ($M = 1.81$; $Mdn = 2$; $Mo = 2$; $SD = 0.394$) for students with autism. See Table 18 for descriptive statistics.

Table 18

Included in IEP Meetings

Choices	<i>f</i>	%
Yes	28	18.9
No	119	80.4

Survey item 12 asked the participants if they receive any information pertaining to the IEP for students with autism. Over half of the participants (54.7%) reported they do receive information ($M = 1.87$; $Mdn = 1$; $Mo = 1$; $SD = 1.045$) regarding the IEP for students with autism. A few participants chose other (6.8%), and their responses were when requested, discussions with teachers and assistants, yearly IEP form, and no information regarding students with autism is ever received to me as their music teacher. See Table 19 for descriptive statistics.

Table 19*IEP Information for Students with Autism*

Choices	<i>f</i>	%
Yes	81	54.7
No	15	10.1
Occasionally	42	28.4
Other	10	6.8

Research question 4: What is K-6 music educators’ perceptions of students with autism in the music classroom?

Survey items 13 and 14 addressed this research question. Survey item 13 asked music educators ($N = 148$) to rate their agreement level to four statements about students with autism. The choices were a five-point Likert-type scale 1 (*strongly disagree*) to 5 (*strongly agree*). I used descriptive statistics to analyze the responses. Most music educators reported (a) strongly agreed that students with autism should have the choice to attend music classes ($M = 3.49$; $Mdn = 4$; $Mo = 5$; $SD = 1.426$), (b) disagreed that students with autism hinder the learning of other students in the music classroom ($M = 2.09$; $Mdn = 2$; $Mo = 2$; $SD = 0.947$). (c) disagreed that students with autism should meet the same goals as all other students ($M = 2.53$; $Mdn = 2$; $Mo = 2$; $SD = 0.972$), and (d) agreed students with autism frequently need accommodations and modifications in music class ($M = 3.88$; $Mdn = 4$; $Mo = 4$; $SD = 0.888$). See Table 20 for descriptive statistics.

Table 20*Educators’ Perceptions on Students with Autism*

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Choice to attend music	17	11.5	27	18.2	24	16.2	27	18.2	53	35.8
Hinder learning of other students	47	31.8	52	35.1	40	27.0	7	4.7	2	1.4
Meet the same goals as others	16	10.8	68	45.9	39	26.4	20	13.5	5	3.4

Needs accommodations and modifications	3	2.0	7	4.7	29	19.6	75	50.7	34	23.0
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Cronbach’s alpha was conducted to estimate the reliability of the scale items. I conducted internal reliability tests using Cronbach’s alpha coefficient on each of the four items regarding (should have the choice to attend music class, hinder the learning of other students, should meet the same goals as all other students, and frequently need accommodations and modifications) educator perceptions on students with autism in the music classroom. Overall, Cronbach’s alpha ($\alpha = 0.123$) indicated a low reliability. Cronbach alpha item statistics for music educator perceptions for students should have a choice to attend ($M = 3.49$; $SD = 1.426$), hinder the learning of other students ($M = 2.09$; $SD = 0.947$), meet the same goals as all other students ($M = 2.53$; $SD = 0.972$), and frequently needs accommodations and modifications ($M = 3.88$; $SD = 0.888$).

Survey item 14 asked music educators to rate their agreement level to three statements pertaining to the ability to effectively teach students with autism. The choices were a five-point Likert-type scale 1 (*strongly disagree*) to 5 (*strongly agree*). Many music educators reported (a) disagreed about having the appropriate resources to teach students with autism ($M = 2.74$; $Mdn = 3$; $Mo = 2$; $SD = 1.138$), (b) neutral about having the skills to manage the behavior of students with autism in the classroom ($M = 3.01$; $Mdn = 3$; $Mo = 3$; $SD = 1.088$), and (c) disagreed about having the appropriate training to teach students with autism ($M = 2.34$; $Mdn = 2$; $Mo = 2$; $SD = 1.086$). See Table 21 for descriptive statistics.

Table 21

Appropriate Resources to Teach Students with Autism

	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Appropriate resources	18	12.2	55	37.2	32	21.6	33	22.3	10	6.8
Skills to manage behavior	13	8.8	36	24.3	46	31.1	42	28.4	11	7.4
Appropriate training	33	22.3	63	42.6	25	16.9	22	14.9	5	3.4

I also conducted Cronbach's alpha to estimate the reliability of the scale items. I conducted internal reliability tests using Cronbach's alpha coefficient on each of the three items regarding (appropriate resources to teach, skills to manage behavior, and appropriate training) educator perceptions to effectively teach students with autism. Overall, Cronbach's alpha ($\alpha = 0.829$) indicated a high reliability. Cronbach alpha item statistics for music educators' perceptions on having the appropriate resources were ($M = 2.74$; $SD = 1.138$), skills to manage behavior ($M = 3.01$; $SD = 1.088$), and appropriate training ($M = 2.34$; $SD = 1.086$).

Research question 5: Are there differences among K-6 music educators' perceptions based on years of teaching experience, school classification, and school size?

Survey items 15 through 20 addressed this research question. Items related to the demographics of the participants, which have been discussed earlier in this chapter. I ran a Chi-Square Test of Independence to determine how the participants answered survey items 15 through 20 based on their demographic information. Survey item 16 was compared with the first statement on item 13 on the survey (students with autism should have the choice to attend music classes). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (8) = 8.332, p > .05$). The responses were independent. Several music educators reported (a) suburban ($f = 28$), (b) rural ($f = 17$), and (c) urban ($f = 8$) they strongly agreed regarding students with autism should have a choice to attend music class. See Table 22 for music educators' perceptions based on their school classification.

Table 22*Choice to Attend Music Class Related to School Classification*

School Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Urban	5	3	4	4	8
Rural	4	6	9	13	17
Suburban	8	18	11	10	28

Survey item 16 was compared with the second statement on item 13 on the survey (students with autism hinder the learning of other students in the music classroom). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (8) = 8.170, p > .05$). The responses were independent. Most music educators reported (a) suburban ($f = 28$), (b) rural ($f = 16$), and (c) urban ($f = 11$) they strongly disagreed or disagreed regarding students with autism hinder the learning of others in the music classroom. See Table 23 for music educators' perceptions based on their school classification.

Table 23*Hinder the Learning of Others Related to School Classification*

School Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Urban	11	8	5	0	0
Rural	13	16	15	3	2
Suburban	23	28	20	4	0

Survey item 16 was compared with the third statement on item 13 on the survey (students with autism should meet the same goals as all other students). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship

was found ($\chi^2 (8) = 4.580, p > .05$). The responses appear to be independent. Most music educators reported (a) suburban ($f = 36$), (b) rural ($f = 19$), and (c) urban ($f = 13$) they disagreed to students with autism meeting the same goals as other students. See Table 24 for music educators' perceptions based on their school classification.

Table 24

Meet the Same Goals as Others Related to School Classification

School Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Urban	2	13	6	3	0
Rural	6	19	14	9	1
Suburban	8	36	19	8	4

Survey item 16 was compared with the fourth statement on item 13 (students with autism frequently need accommodations and modifications in music class). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (8) = 6.719, p > .05$). The responses were independent. The majority of music educators reported (a) suburban ($f = 38$), (b) rural ($f = 23$), and (c) urban ($f = 14$) they agreed to students with autism frequently needing accommodations and modifications in music class. See Table 25 for music educators' perceptions on accommodations and modifications based on their school classification.

Table 25

Frequently Need Accommodations & Modifications Related to School Classification

School Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Urban	0	1	2	14	7
Rural	1	1	14	23	10
Suburban	2	5	13	38	17

Survey item 16 was compared with the first statement on item 14 (music teachers have the appropriate resources to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (8) = 3.880, p > .05$). The responses appear to be independent. Many music educators reported (a) suburban ($f = 26$), (b) rural ($f = 20$), and (c) urban ($f = 9$) they disagreed with music teachers having the appropriate resources to teach students with autism. See Table 26 for music educators' perceptions based on their school classification.

Table 26

Appropriate Resources Related to School Classification

School Classification	Strongly Disagree <i>f</i>	Disagree <i>f</i>	Neutral <i>f</i>	Agree <i>f</i>	Strongly Agree <i>f</i>
Urban	3	9	6	5	1
Rural	3	20	12	10	4
Suburban	12	26	14	18	5

Survey item 16 was compared with the second statement on item 14 on the survey (music teachers have the skills to manage behavior of students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (8) = 2.003, p > .05$). The responses were independent. Music educators reported mixed responses (a) suburban were neutral ($f = 25$), (b) rural agreed ($f = 16$), and (c) urban disagreed or were neutral ($f = 12$) regarding skills to manage the behavior of students with autism. See Table 27 for music educators' perceptions based on their school classification.

Table 27

Skills to Manage Behavior Related to School Classification

School Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Urban	3	6	6	7	2
Rural	3	11	15	16	4
Suburban	7	19	25	19	5

Survey item 16 was compared with the third statement on item 14 on the survey (music teachers have the appropriate training to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(8) = 10.411, p > .05$). The responses were independent. Music educators reported mixed responses (a) suburban disagreed ($f = 32$), (b) rural disagreed ($f = 24$), and (c) urban agreed ($f = 10$) regarding the appropriate training to teach students with autism. See Table 28 for music educators' perceptions based on their school classification.

Table 28

Appropriate Training Related to School Classification

School Classification	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Urban	10	7	3	3	1
Rural	11	24	8	4	2
Suburban	12	32	14	15	2

Survey item 17 was compared with the first statement on item 13 (students should have the choice to attend music class). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(12) = 8.970, p > .05$). The responses were independent. Several music educators reported (a) less than 500 students ($f = 27$), (b) 501-1000 students ($f = 23$), and (c) 1001-2000 students they strongly agreed

to students with autism having a choice to attend music class. See Table 29 for music educators' perceptions based on the number of students in their K-6 school.

Table 29

Choice to Attend Music Class Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	11	14	14	15	27
501-1000	5	13	8	10	23
1001-2000	1	0	1	2	3
2001+	0	0	1	0	0

Survey item 17 was compared to the second statement on item 13 (students with autism hinder the learning of other students in the music classroom). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(12) = 6.022, p > .05$). The responses were independent. Most music educators reported (a) less than 500 students in their school ($f = 28$), (b) 501-1000 students ($f = 21$), (c) 1001-2000 students ($f = 3$), they disagreed regarding students with autism hindering the learning of other students in the music classroom. See Table 30 for music educators' perceptions based on number of students in their K-6 school.

Table 30

Hinder the Learning of Others Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	24	28	22	6	1
501-1000	19	21	17	1	1
1001-2000	3	3	1	0	0
2001+	1	0	0	0	0

Survey item 17 was compared to the third statement on item 13 (students with autism should meet the same goals as all other students). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (12) = 15.619, p > .05$). The responses were independent. The majority of music educators reported (a) less than 500 students ($f = 33$), (b) 501-1000 students ($f = 31$), and (c) 1001-2000 students ($f = 4$) they disagreed regarding students with autism meeting the same goals as all other students. See Table 31 for music educators' perceptions based on number of students in their K-6 school.

Table 31

Same Goals as Others Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	10	33	25	13	0
501-1000	6	31	11	7	4
1001-2000	0	4	2	0	1
2001+	0	0	1	0	0

Survey item 17 was compared to the fourth statement on item 13 (students with autism frequently need accommodations and modification in music class). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (12) = 11.948, p > .05$). The responses were independent. Many music educators reported (a) less than 500 students ($f = 39$), (b) 501-1000 students ($f = 33$), and (c) 10001-2000 students ($f = 3$) they agreed regarding students with autism frequently need accommodations and modifications. See Table 32 for music educators' perceptions based on number of students in their K-6 school.

Table 32

Frequently Need Accommodations & Modifications Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	2	4	17	39	19
501-1000	0	3	10	33	13
1001-2000	1	0	1	3	2
2001+	0	0	1	0	0

Survey item 17 was compared to the first statement on item 14 (music teachers have the appropriate resources to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(12) = 12.043, p > .05$). The responses were independent. Most music educators reported (a) less than 500 students ($f = 32$), (b) 501-1000 students ($f = 20$), and (c) 1001-2000 students ($f = 3$) they disagreed regarding music teachers have the appropriate resources to teach students with autism. See Table 33 for music educators' perceptions based on number of students in their K-6 school.

Table 33

Appropriate Resources Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	13	32	13	18	5
501-1000	5	20	15	14	4
1001-2000	0	3	3	0	1
2001+	0	0	0	1	0

Survey item 17 was compared to the second statement on item 14 (music teachers have the skills to manage the behavior of students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(12) = 6.506, p > .05$). The responses were independent. Music educators reported

mixed responses (a) less than 500 students were neutral ($f = 26$), (b) 501-1000 students agreed ($f = 19$), (c) 1001-2000 students disagreed or were neutral ($f = 6$), and (d) 2001 plus students agreed ($f = 1$) about having skills to manage behavior of students with autism. See Table 34 for music educators' perceptions based on number of students in their K-6 school.

Table 34

Skills to Manage Behavior Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	7	20	26	21	7
501-1000	6	13	17	19	4
1001-2000	0	3	3	1	0
2001+	0	0	0	1	0

Survey item 17 was compared to the third statement on item 14 (music teachers have the appropriate training to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(12) = 8.325, p > .05$). The responses were independent. Most music educators reported (a) less than 500 students ($f = 34$), (b) 501-1000 students ($f = 24$), and (c) 1001-2000 students ($f = 5$) they disagreed with music teachers having the appropriate training to teach students with autism. See Table 35 for music educators' perceptions based on number of students in their K-6 school.

Table 35

Appropriate Training Related to Number of Students

Number of Students	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 500	19	34	12	13	3
501-1000	13	24	11	9	2

1001-2000	1	5	1	0	0
2001+	0	0	1	0	0

Survey item 19 was compared to the first statement on item 13 (students with autism should have the choice to attend music class). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 13.202, p > .05$). The responses were independent. Most music educators reported (a) bachelor's degree ($f = 15$), (b) master's degree ($f = 34$), and (c) other degrees ($f = 2$) they strongly agreed regarding students with autism having a choice to attend music class. See Table 36 for music educator perceptions based on current education degree level.

Table 36

Choice to Attend Class Related to Educators' Degree Level

Educational Degree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Bachelor's	4	9	6	8	15
Master's	10	16	17	18	34
Education Specialist	2	2	0	0	1
Doctoral	1	0	1	0	1
Other	0	0	0	1	2

Survey item 19 was compared to the second statement on item 13 (students with autism hinder the learning of other students in the music classroom). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 17.638, p > .05$). The responses were independent. Music educators reported mixed responses (a) bachelor's degree disagreed or were neutral ($f = 26$), (b) master's degree disagreed ($f = 37$), and (c) education specialist ($f = 4$) strongly disagreed about students with autism hindering the learning of other students in the music classroom. See Table 37 for music educator perceptions based on current education degree level.

Table 37*Hinder the Learning of Others Related to Educators' Degree Level*

Educational Degree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Bachelor's	12	13	13	4	0
Master's	29	37	25	2	2
Education Specialist	4	1	0	0	0
Doctoral	1	1	1	0	0
Other	1	0	1	1	0

Survey item 19 was compared to the third statement on item 13 (students with autism should meet the same goals as all other students). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 15.684, p > .05$). The responses were independent. Most music educators reported (a) bachelor's degree ($f = 18$), (b) master's degree ($f = 45$), and (c) educational specialist ($f = 4$) they disagreed regarding students with autism meeting the same goals as all other students. See Table 38 for music educator perceptions based on current education degree level.

Table 38*Meet the Same Goals as Others Related to Educators' Degree Level*

Educational Degree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Bachelor's	6	18	12	5	1
Master's	9	45	24	14	3
Education Specialist	0	4	0	0	1
Doctoral	0	1	1	1	0
Other	1	0	2	0	0

Survey item 19 was compared to the fourth statement on item 13 (students with autism frequently need accommodations and modifications in music class). A chi-square test of

independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (16) = 6.634, p > .05$). The responses were independent. The majority of music educators reported (a) bachelor's degree ($f = 22$), (b) master's degree ($f = 46$), (c) education specialist ($f = 2$), (d) doctoral degree ($f = 3$), and (e) other degrees ($f = 2$) they agreed regarding students with autism frequently need accommodations and modifications in music class. See Table 39 for music educator perceptions based on current education degree level.

Table 39

Frequently Need Accommodations & Modifications Related to Educators' Degree Level

Educational Degree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Bachelor's	1	2	10	22	7
Master's	2	5	18	46	24
Education Specialist	0	0	1	2	2
Doctoral	0	0	0	3	0
Other	0	0	0	2	1

Survey item 19 was compared to the first statement on item 14 (music teachers have the appropriate resources to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (16) = 16.794, p > .05$). The responses were independent. Most music educators reported (a) bachelor's degree ($f = 17$), (b) master's degree ($f = 34$), and (c) education specialist ($f = 2$) having the appropriate resources to teach students with autism. See Table 40 for music educator perceptions based on current education degree level.

Table 40

Appropriate Resources Related to Educators' Degree Level

Educational Degree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Bachelor's	2	17	10	8	5
Master's	13	34	21	24	3
Education Specialist	1	2	0	1	1
Doctoral	1	1	1	0	0
Other	1	1	0	0	1

Survey item 19 was compared to the second statement on item 14 (music teachers have the skills to manage behavior of students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 17.819, p > .05$). The responses were independent. Several music educators with a bachelor's degree ($f = 14$) and master's degree ($f = 30$) reported they were neutral while educational specialist ($f = 3$) agreed about having the skills to manage the behavior of students with autism. See Table 41 for music educator perceptions based on current education degree level.

Table 41

Skills to Manage Behavior Related to Educators' Degree Level

Educational Degree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Bachelor's	2	11	14	11	4
Master's	8	24	30	28	5
Education Specialist	1	0	0	3	1
Doctoral	1	1	1	0	0
Other	1	0	1	0	1

Survey item 19 was compared to the third statement on item 14 (music teachers have the appropriate training to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was

found ($X^2(16) = 20.266, p > .05$). The responses were independent. Most music educators with a bachelor's degree ($f = 20$) and master's degree ($f = 40$) reported they disagreed while doctoral degrees ($f = 2$) strongly disagreed about having the appropriate training to teach students with autism. See Table 42 for music educator perceptions based on current education degree level.

Table 42

Appropriate Training Related to Educators' Degree Level

Educational Degree	Strongly Disagree <i>f</i>	Disagree <i>f</i>	Neutral <i>f</i>	Agree <i>f</i>	Strongly Agree <i>f</i>
Bachelor's	7	20	9	5	1
Master's	22	40	15	16	2
Education Specialist	1	1	1	1	1
Doctoral	2	1	0	0	0
Other	1	1	0	0	1

Survey item 20 was compared to the first statement on item 13 (students with autism should have the choice to attend music classes). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 12.643, p > .05$). The responses were independent. Music educators reported mixed responses (a) less than 5 years strongly agreed ($f = 8$), (b) 6-15 years disagreed ($f = 12$), (c) 16-25 years strongly agreed ($f = 26$), (d) 26-35 years strongly agreed ($f = 7$), and (e) 36 plus years ($f = 3$) strongly agreed regarding students with autism should have the choice to attend music class. See Table 43 for music educator perceptions based on number of years teaching.

Table 43

Choice to Attend Music Class Related to Educators' Years of Teaching

Years of Teaching	Strongly Disagree <i>f</i>	Disagree <i>f</i>	Neutral <i>f</i>	Agree <i>f</i>	Strongly Agree <i>f</i>
Less than 5 years	2	2	2	6	8

6-15	4	12	5	7	9
16-25	7	10	11	9	26
26-35	2	1	4	3	7
36 +	2	2	2	2	3

Survey item 20 was compared to the second statement on item 13 (students with autism hinder the learning of other students in the music classroom). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (16) = 19.109, p > .05$). The responses were independent. Music educators reported mixed responses (a) less than 5 years strongly disagreed ($f = 9$), (b) 6-15 years disagreed ($f = 18$), (c) 16-25 years disagreed ($f = 22$), (d) 26-35 years disagreed or were neutral ($f = 12$), and (e) 36 plus years disagreed or were neutral ($f = 6$) regarding students with autism hinder the learning of other students in the music classroom. See Table 44 for music educator perceptions based on number of years teaching.

Table 44

Hinder the Learning of Others Related to Educators' Years of Teaching

Years of Teaching	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 5 years	9	3	7	1	0
6-15	10	18	8	1	0
16-25	21	22	16	3	1
26-35	5	6	6	0	0
36 +	2	3	3	2	1

Survey item 20 was compared to the third statement on item 13 (students with autism should meet the same goals as all other students). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (16) = 10.268, p > .05$). The responses were independent. The majority of music

educators reported (a) less than 5 years ($f = 8$), (b) 6-15 years ($f = 20$), (c) 16-25 years ($f = 29$), (d) 26-35 years ($f = 6$), and (e) 36 plus years ($f = 5$) they disagreed regarding students with autism should meet the same goals as all other students. See Table 45 for music educator perceptions based on number of years teaching.

Table 45

Meet the Same Goals as Others Compared to Educators' Years of Teaching

Years of Teaching	Strongly Disagree <i>f</i>	Disagree <i>f</i>	Neutral <i>f</i>	Agree <i>f</i>	Strongly Agree <i>f</i>
Less than 5 years	3	8	5	4	0
6-15	3	20	8	5	1
16-25	6	29	20	5	3
26-35	2	6	5	3	1
36 +	2	5	1	3	0

Survey item 20 was compared to the fourth statement on item 13 (students with autism frequently need accommodations and modifications in music class). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($\chi^2 (16) = 5.359, p > .05$). The responses were independent. Most music educators reported (a) less than 5 years ($f = 11$), (b) 6-15 years ($f = 17$), (c) 16-25 years ($f = 34$), (d) 26-35 years ($f = 8$), and (e) 36 plus years ($f = 5$) they agreed regarding students with autism frequently need accommodations and modifications in music class. See Table 46 for music educator perceptions based on number of years teaching.

Table 46

Frequently Need Accommodations & Modifications Related to Educators' Years of Teaching

Years of Teaching	Strongly Disagree <i>f</i>	Disagree <i>f</i>	Neutral <i>f</i>	Agree <i>f</i>	Strongly Agree <i>f</i>
Less than 5 years	1	0	4	11	4

6-15	1	3	8	17	8
16-25	1	2	12	34	14
26-35	0	1	3	8	5
36 +	0	1	2	5	3

Survey item 20 was compared to the first statement on item 14 (music teachers have the appropriate resources to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 18.250, p > .05$). The responses were independent. Most music educators reported (a) less than 5 years ($f = 7$), (b) 6-15 years ($f = 17$), (c) 16-25 years ($f = 22$) they disagreed about having the appropriate resources to teach students with others. However, music educators with 26-35 years reported they disagreed or agreed ($f = 12$) while others with 36 years plus of teaching ($f = 6$) disagreed or were neutral about having the appropriate resources to teach students with autism. See Table 47 for music educator perceptions based on number of years teaching.

Table 47

Appropriate Resources Related to Educators' Years of Teaching

Years of Teaching	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 5 years	0	7	3	6	4
6-15	5	17	8	5	2
16-25	10	22	15	14	2
26-35	2	6	3	6	0
36 +	1	3	3	2	2

Survey item 20 was compared to the second statement on item 14 (music teachers have the skills to manage the behavior of students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 13.548, p > .05$). The responses were independent. Music educators reported

mixed responses (a) less than 5 years agreed ($f= 8$), (b) 6-15 years were neutral ($f= 16$), (c) 16-25 years disagreed ($f= 19$), (d) 26-35 years agreed or were neutral ($f= 12$), and (e) 36 plus years were neutral ($f= 4$) about having the skills to manage the behavior of students with autism. See Table 48 for music educator perceptions based on number of years teaching.

Table 48

Skills to Manage Behavior Related to Educators' Years of Teaching

Years of Teaching	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 5 years	0	6	3	8	3
6-15	3	6	16	9	3
16-25	8	19	17	16	3
26-35	1	3	6	6	1
36 +	1	2	4	3	1

Survey item 20 was compared to the third statement on item 14 (music teachers have the appropriate training to teach students with autism). A chi-square test of independence was calculated to determine the relationship between the variables. No significant relationship was found ($X^2(16) = 21.190, p > .05$). The responses were independent. Most music educators reported (a) less than 5 years ($f= 6$), (b) 6-15 years ($f= 17$), (c) 16-25 years ($f= 28$), (d) 26-35 years ($f= 7$), and (e) 36 plus years ($f= 5$) they disagreed regarding music teachers having the appropriate training to teach students with autism. See Table 49 for music educator perceptions based on number of years teaching.

Table 49

Appropriate Training Related to Educators' Years of Teaching

Years of Teaching	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>	<i>f</i>
Less than 5 years	4	6	5	5	0

6-15	8	17	9	0	3
16-25	16	28	6	12	1
26-35	4	7	2	4	0
36 +	1	5	3	1	1

A non-parametric version of a MANOVA was conducted to determine if there was a difference among the K-6 music educators' perceptions. I conducted four separate non-parametric MANOVAS: (a) teaching experience, (b) educational degree level, (c) school classification, and (d) school size.

First, the results of the non-parametric MANOVA for years of teaching experience indicated no significant difference between years of teaching experience on any of the dependent variables, $F(17.809, 429.6991) = .780, p = .723$. The dependent variables were: (a) students with autism should have a choice to attend music class, (b) students with autism hinder the learning of other students in the music classroom, (c) students with autism should meet the same goals as all other students, (d) students with autism frequently need accommodations and modifications in music class, (e) music teachers have the appropriate resources to teach students with autism, (f) music teachers have the appropriate skills to manage the behavior of students with autism, and (g) music teachers have the appropriate training to teach students with autism. See Table 50 for the mean and standard deviation of each dependent variable based on music educators' years of teaching.

Table 50

Non-Parametric of MANOVA-Music Educators' Years of Teaching

DV	< 5 years		6-15 years		16-25 years		26-35 years		36 + years	
	M	SD	M	SD	M	SD	M	SD	M	SD
Choice to attend music class	3.80	1.361	3.14	1.398	3.59	1.444	3.71	1.404	3.18	1.537
Hinder the learning	2.00	1.026	2.00	.782	2.06	.965	2.06	.827	2.73	1.272

of others											
Same goals as others	2.50	1.000	2.49	.932	2.52	.948	2.71	1.105	2.45	1.128	
Need accommodations and modifications	3.85	.933	3.76	.983	3.92	.829	4.00	.866	3.91	.944	
Appropriate resources	3.35	1.182	2.51	1.070	2.62	1.099	2.76	1.091	3.09	1.300	
Appropriate skills	3.40	1.095	3.08	1.038	2.79	1.109	3.19	1.015	3.09	1.136	
Appropriate training	2.55	1.099	2.27	1.071	2.27	1.096	2.35	1.115	2.64	1.120	

Second, the results of the non-parametric MANOVA for music educator’s educational degree level indicated no significant difference between degree level on any of the dependent variables, $F(10.252, 49.8609) = .875, p = .585$. The dependent variables were: (a) students with autism should have a choice to attend music class, (b) students with autism hinder the learning of other students in the music classroom, (c) students with autism should meet the same goals as all other students, (d) students with autism frequently need accommodations and modifications in music class, (e) music teachers have the appropriate resources to teach students with autism, (f) music teachers have the appropriate skills to manage the behavior of students with autism, and (g) music teachers have the appropriate training to teach students with autism. See Table 51 for the mean and standard deviation of each dependent variable based on music educators’ education degree level.

Table 51

Non-Parametric of MANOVA-Music Educators’ Educational Degree Level

DV	Bachelor’s		Master’s		Education Specialist		Doctoral		Other	
	M	SD	M	SD	M	SD	M	SD	M	SD
Choice to attend music class	3.50	1.419	3.53	1.398	2.20	1.643	3.00	2.000	4.67	.577
Hinder learning of others	2.21	.976	2.06	.920	1.20	.447	2.00	1.000	2.67	1.528
Same goals as others	2.45	.968	2.55	.965	2.60	1.342	3.00	1.000	2.33	1.155

Need accommodations and modifications	3.76	.878	3.89	.916	4.20	.837	4.00	.000	4.33	.577
Appropriate resources	2.93	1.135	2.68	1.094	2.80	1.643	2.00	1.000	2.67	2.082
Appropriate skills	3.10	1.055	2.98	1.052	3.60	1.517	2.00	1.000	3.00	2.000
Appropriate training	2.36	.983	2.33	1.076	3.00	1.581	1.33	.577	2.67	2.082

Third, the results of the non-parametric MANOVA for music educators' school classification indicated no significant difference between urban, rural, or suburban on any of the dependent variables, $F(10.004, 578.4681) = 1.138, p = .331$. The dependent variables were: (a) students with autism should have a choice to attend music class, (b) students with autism hinder the learning of other students in the music classroom, (c) students with autism should meet the same goals as all other students, (d) students with autism frequently need accommodations and modifications in music class, (e) music teachers have the appropriate resources to teach students with autism, (f) music teachers have the appropriate skills to manage the behavior of students with autism, and (g) music teachers have the appropriate training to teach students with autism. See Table 52 for the mean and standard deviation of each dependent variable based on music educators' school classification.

Table 52

Non-Parametric of MANOVA-Music Educators' School Classification

DV	Urban		Rural		Suburban	
	M	SD	M	SD	M	SD
Choice to attend music class	3.29	1.574	3.67	1.297	3.18	1.537
Hinder the learning of others	1.75	.794	2.29	1.061	2.73	1.272
Should meet the same goals as others	2.42	.830	2.59	.998	2.45	1.128
Need accommodations and modifications	4.13	.741	3.82	.858	3.91	.944
Appropriate resources	2.67	1.090	2.84	1.087	3.09	1.300
Appropriate skills to manage behavior	2.96	1.197	3.14	1.061	3.09	1.136
Appropriate training	2.08	1.213	2.22	1.026	2.64	1.120

Fourth, the results of the non-parametric MANOVA for music educators' school size indicated no significant difference between school size on any of the dependent variables, $F(7.922, 206.5354) = .544, p = .803$. The dependent variables were: (a) students with autism should have a choice to attend music class, (b) students with autism hinder the learning of other students in the music classroom, (c) students with autism should meet the same goals as all other students, (d) students with autism frequently need accommodations and modifications in music class, (e) music teachers have the appropriate resources to teach students with autism, (f) music teachers have the appropriate skills to manage the behavior of students with autism, and (g) music teachers have the appropriate training to teach students with autism. See Table 53 for the mean and standard deviation of each dependent variable based on music educators' school size.

Table 53

Non-Parametric of MANOVA-Music Educators' School Size

DV	< 500		201-1000		1001+	
	M	SD	M	SD	M	SD
Choice to attend music class	3.41	1.447	3.56	1.418	3.75	1.389
Hinder the learning of others	2.16	.981	2.05	.918	1.63	.744
Should meet the same goals as others	2.51	.910	2.53	1.056	2.75	1.035
Need accommodations and modifications	3.85	.923	3.95	.774	3.63	1.302
Appropriate resources to teach	2.63	1.177	2.86	1.090	3.00	1.069
Appropriate skills to manage behavior	3.01	1.101	3.03	1.114	2.88	.835
Appropriate training	2.35	1.120	2.37	1.097	2.13	.641

Summary

Results of this study indicated music educators need more professional development for students with autism. Music educators lack use of strategies such as PECS, color coding pitches or rhythms, picture schedules, and visual task analysis. Participants indicated they only received one to three classes during undergraduate and graduate programs that pertained to students with autism. Less than half of the participants (45.3%) indicated they did not receive information

pertaining to the IEP for students with autism on a regular basis. All Chi Square procedures are not conclusive. The sample size was too small due to survey being conducting during the COVID pandemic. Finally, no significant difference occurred between number of years taught, educational degree level, school classification, and school size based on the music educators' perceptions of students with autism.

Chapter 5

Discussion

While there is considerable research on including students with autism in the regular education classroom, more research on including students with autism in the music classroom is needed (Colwell & Thompson, 2000; Darrow, 1999; Mazur, 2004). Music educators must know and implement strategies for students with autism (Hammel, 2004). Also, music educators need to be familiar with the Individualized Education Program (IEP), accommodations, modifications, and educational strategies to teach students with autism in the music classroom. Music educators must ensure that all students have access to music regardless of their disabilities (Draper, 2019b). According to Hock et al. (1990), only 37% of music educators are trained to work with students with autism in the music classroom, which typically consists of only one or two workshops. Music educators often feel they do not have the appropriate skills or strategies to teach students with autism in the music classroom (Hammel & Gerrity, 2012).

The goal of this descriptive, quantitative study was to survey K-6 music educators regarding their strategies, training, and perceptions when teaching students with autism in the music classroom. In this chapter, I discuss implications and practical applications of results presented in the previous chapter. Also, I will present conclusions and suggestions for music educators who teach students with autism, recommendations for music teacher education, and recommendations for future research.

The five guiding research questions were:

1. What evidence-based strategies do K-6 music educators use to teach students with autism in the music classroom?

2. What extent of educational preparation exists among K-6 music educators when teaching students with autism?
3. What are K-6 music educators' familiarity with the Individualized Education Program (IEP)?
4. What are K-6 music educators' perceptions of students with autism in the music classroom?
5. Are there differences among K-6 music educators' perceptions based on years of teaching experience, degree, school setting, and school size?

Participants ($N=148$) completed an online, anonymous survey consisting of seven Likert-type scale items, three multiple choice items, three yes or no items, and six demographics items. The survey was divided into seven sections: (a) strategies for classroom management, (b) strategies for classroom singing activities, (c) strategies for classroom instrument playing activities, (d) classes and professional development, (e) Individualized Education Program (IEP), (f) teacher perceptions of students with autism, and (g) demographics section. Due to the low response rate, results of this study are not conclusive. While these results should not be generalized to the population of all K-6 music teachers, implications for music teachers, music teacher education, and future research should be considered.

Strategies for Classroom Management

Survey items addressing evidence-based strategies for classroom management for students with autism yielded similar responses from music educators. Most music educators reported they always use preferential seating and consistent routines in their classrooms. Students with autism sometimes have sensory issues and seating them away from lights, windows, or doors help them to learn more effectively. As music educators, we must use

consistent routines in our class to help all learners know what to expect when they are in the music room. Preferential seating and consistent practices facilitate good behavior (Draper, 2020a; Hagedorn 2004; Hammel 2004; Hourigan & Hourigan, 2009).

Most participants reported they sometimes use picture schedules or PECS, while less than 25% of music educators reported they always or often use them in the classroom. More emphasis needs to be on incorporating picture schedules or Picture Exchange Communication System (PECS) into elementary music classroom. Picture schedules are a way to illustrate what activity takes place, specifies what activity is about to occur, and helps identify any changes that might happen in the regular schedule (Meadan et al., 2011). All learners, including English Language Learners (ELL), will benefit from having a visual representation of the music activities; therefore, music educators need to utilize picture schedules on a daily basis. Picture schedules and PECS help with speech development and is an excellent tool for communicating activities to students with autism (Abduelkarem, 2019; Cassidy, 1990; Darrow, 2009; Draper, 2020a; Hourigan & Hourigan, 2009; Swanson, 2019; Whipple & VanWeelden, 2012).

Strategies for Classroom Singing Activities

Most music educators reported they use evidence-based strategies for classroom singing activities. Several music educators reported they always use modeling (62.2%), and the echo strategy (50.0%) while singing in the classroom. Modeling and echoing are great strategies to use and should be used daily within the music classroom. Music teachers can model correct vowel formation or solfege hand signals to help students learn correct pitches. Modeling demonstrates a targeted behavior that increases communication skills for students with autism (Swanson, 2019). All students will benefit by using the echo strategy in the music classroom. Echoing is a very effective strategy for students with autism (Whipple & VanWeelden, 2012).

Music educators reported they sometimes use color coding and PECS as strategies in the music classroom. It should be a priority for music educators to color code the music for students with autism to learn different rhythms or pitches. For example, music teachers can highlight the soprano part a certain color and highlight the alto part in another color to help students distinguish the difference in singing parts. Music teachers can highlight all quarter notes one color and all eighth notes a different color to differentiate the types of rhythmic notation. Finally, if students have trouble communicating or not understanding a music task, music teachers can include PECS to represent different pitch or rhythm notations. Color coding and PECS are essential aids to help students with autism read notes more efficiently (Hourigan & Hourigan, 2009; Swanson, 2019; Walkup-Amos, 2020; Whipple & VanWeelden, 2012).

Strategies for Classroom Instrument Playing Activities

The majority of participants reported using modeling as a strategy during instrument playing activities. Music teachers need to model how to hold an instrument the correct way or where to place your fingers on an instrument. Music teachers can also model a particular melody on the flute for students to hear the correct sound of the instrument. Modeling demonstrates a targeted behavior, increases communication skills, and is an excellent way for students with autism to comprehend the technique (Swanson, 2019).

Notably, only 31.0% of music educators reported they often or always use a visual task analysis when playing instruments. I believe most educators do not utilize visual task analysis simply because they do not know how or understand the concept of a task analysis. For example, music teachers can make a step-by-step visual guide of how to hold the recorder and correct finger positions for each note to a particular song. Students would be able to visually follow each step to play the song correctly. Music educators must take the initiative to develop a visual task

analysis for students with autism while planning lessons. By using a visual task analysis, students with autism will learn how to play instruments correctly. A visual task analysis allows target skills to be broken down into smaller tasks (Meadan et al., 2011; Swanson, 2019). It is vital for music teachers to take extra time to ensure students with autism learn how to play instruments to the best of their ability.

Classes and Professional Development

Music educators reported their perceptions regarding previous music classes taken related to students with autism. Over half the participants (56.8%) indicated students with autism were not discussed in their undergraduate or graduate classes. Due to the rising number of students with autism (one in 54 children), Centers for Disease Control and Prevention (2020), university classes must include information and provide evidence-based strategies in their curriculum to future music educators. It is essential to include information about students with autism in college method courses (Hammel & Hourigan, 2011). Is there lack of knowledge about autism in the university setting? Are there too many requirements in college method courses to include information about autism? How can college professors prioritize their curriculum to include autism? Professors need to include a few evidence-based strategies into a variety of college method courses. College professors could include a picture schedule in one lesson, briefly describe the benefits of pictures schedules for students with autism and continue with the curriculum. Future music educators would be receiving evidence-based strategies to use for students with autism by including chunks of information throughout several college method courses. At least they would be receiving more information regarding autism than they are currently receiving. However, a complete college course dedicated to autism and special needs

would be the overall goal to ensure future music educators are receiving the appropriate strategies and resources to teach students with autism.

Music educators reported their perceptions regarding professional development related to students with autism. Less than half of the music educators (48%) reported they received information on autism during faculty meetings. More emphasis on autism must be given in faculty meetings and district level meetings. Administrators need to include information regarding autism throughout several meetings. For example, administrators could model how to use a visual task analysis during one meeting and model how to use picture schedules in another meeting. All educators would learn evidence-based strategies by administrators modeling in faculty or district level meetings. Administrators do not have to devote an entire meeting to learn strategies, unless preferred, instead provide chunks of information regarding autism throughout several meetings to ensure teachers have appropriate strategies to teach students with autism. All teachers need to know evidence-based strategies to students with autism. Music educators must implement strategies for students with autism in the music classroom (Hourigan & Hourigan, 2009)

Individualized Education Program (IEP)

Participants generally indicated some familiarity with items about the Individualized Education Program (IEP) for students with autism. Several music educators reported they were familiar (a) annual goals (44.6%), (b) student's behavior plan (52%), (c) current skill level (29.7%), (d) accommodations and modifications (55.4%), and (e) student's supplementary aids and services (32.4%) with different sections of the IEP. As literature indicates, music educators need to be familiar with the different sections of the IEP for students with autism (Cassidy, 1990; Draper, 2020; Gilbert, 2013; Scott et al., 2007). How can music educators not be 100%

knowledgeable of the IEP? Do music educators not understand the law requires them to know the information and are responsible for following the IEP? Are special educators responsible for giving the IEP information to music educators? Notably, only 54.7% of music educators reported they receive IEP information on students with autism. Roper (2015) indicated only 45.4% of music educators received IEP information. It amazes me how music educators are not given information regarding the IEP of the students they teach in our classroom. All teachers, including music teachers, should receive IEP information about the students they teach in their classroom. Music educators are required by law to know the impact of each student's disability and to implement instructional accommodations and modifications (Cassidy, 1990; Davis et al., 1999; Draper 2020; Gilbert, 2013; Hammel & Hourigan, 2011; Scott et al., 2007). If music educators are not familiar with the IEP, act immediately, locate your special educator, and become familiar with the student's IEP.

Teacher Perceptions Related to Students with Autism

Music educators reported their perceptions about students with autism. Almost half of the music educators reported not having appropriate resources, training, or skills to manage the behavior students with autism. Music educators often lack the knowledge, educational supports, and lack of teaching resources to effectively teach students with autism (Darrow, 1999; Darrow, 2009b; VanWeelden & Whipple 2014; Whipple & VanWeelden, 2012). The lack of appropriate resources or skills could derive from music educators not asking for help or guidance on how to teach students with autism. It could be music educators are so focused on students who can learn, they do not take time to focus on students with autism. Are administrators providing any support or resources to music educators related to students with autism? Music educators must take the initiative to locate adaptive materials, devices, evidence-based strategies, or anything else they

need to teach students with autism effectively. Special education teachers must provide information regarding the IEP to music teachers. Also, special educators must include all teachers in the IEP process for students with autism. Music educators need to collaborate with special education teachers on a regular basis regarding students with autism. I recommend searching online for autism conferences or webinars regarding autism. It is vital to teach all students regardless of disability, even if we have to use our personal time or money to learn how to meet the needs of students with autism in our classroom.

Differences Among K-6 Educators' Perceptions Based on School Classification

Crosstabulations were used to examine any differences in music educators' perceptions based on school classification. Suburban music teachers often rated the responses higher than urban music teachers. VanWeelden and Whipple (2014) indicated teachers in suburban schools have appropriate resources while urban schools lack appropriate resources. Why do suburban schools have more resources than urban schools? Is the government not providing enough funding for urban schools? Does the community provide any resources for urban schools? Urban music teachers must ask the community, local businesses, and other stakeholders to invest in their music program. Urban schools are just as important as rural and suburban. All music educators need to advocate to ensure they have all the necessary supplies for students with autism.

Differences Among K-6 Educators' Perceptions Based on Number of Students

Crosstabulations were used to examine any differences in music educators' perceptions based on the number of students in their school. Results did not yield a variety of responses. Most music educators reported students with autism frequently need accommodations or modifications. Literature indicates accommodations or modifications may be needed for students

with autism to meet those goals (Adamer, 2001; Darrow & Adamek, 2018; Draper, 2019c; Hammel & Hourigan, 2017). However, most music educators reported they do not have the appropriate resources, skills, or training to teach students with autism. How can current music educators receive training regarding autism? More information should be included in faculty meetings and district level meetings on evidence-based strategies, assistive technology, and resources related to autism. Music educators must have appropriate training to teach students with autism (Gfeller et al., 1990; Salvador, 2010; Sideridis & Chandler, 1995).

Differences Among K-6 Educators' Perceptions Based on Current Degree Level

Crosstabulations were used to examine any differences in music educators' perceptions based on their current education degree level. Music educators with a master's degree occasionally ranked items higher than bachelor's degree teachers. For example, master's degree ($n=46$) and bachelor's degree ($n = 22$) teachers reported they agreed to students with autism needing accommodations and modifications. Notably, bachelor's and master's degree educators reported they were neutral about having the skills to manage students with autism. It was interesting to see their responses reported as neutral. Results lead me to conclude they did not receive enough training in college or in their current school system. Most participants only had one to three classes related autism. Hock et al. (1990) indicated only 37% of music educators were trained to work with students with autism in the music classroom. Colleges and school systems must do a better job teaching educators about autism.

Differences Among K-6 Educators' Perceptions Based on Years of Teaching

Crosstabulations were used to determine music educators' perceptions based on their number of years teaching music. Music educators with less than five years of teaching ($n = 8$) reported they had the skills to manage the behavior of students with autism. Most of the

remaining teachers reported they did not have skills to manage the behavior of students with autism. It may be possible those educators have not taught students with autism yet. Also, those teachers may have attended professional development or other training that related to autism. Several music educators feel they do not have the proper skills or strategies to teach students with autism in the music classroom (Hammel & Gerrity, 2012). Our job as music educators is to locate resources, professional development, online resources, or workshops to further our knowledge relating to autism.

After the crosstabulations, I ran a non-parametric version of a MANOVA using R Studio software to determine if any differences exists among music educators' perceptions of students with autism. According to Ellis et al. (2017), a non-parametric MANOVA in the R Studio program provides a nonparametric approach, no assumptions, and supplements the global test with a comprehensive procedure that identifies significant response variables and factory levels while at the same time controlling the error rate. The results of the music educators' perceptions based on the number of years teaching, educational degree level, school classification, and school size indicated no significant differences.

Conclusions and Recommendations

Results regarding the strategies used in the music classroom for students with autism were generally consistent with the literature. Most music educators responding to this survey used preferential seating, consistent routines, modeled procedures, echoing, and peer helpers as strategies to assist students with autism. Results also indicated that music educators generally lack strategies such as PECS, color coding pitches or rhythms, picture schedules, and visual task analysis. Music educators need more training and professional development on evidence-based strategies for students with autism. Music educators need to familiarize themselves with

interventions and explore various resources to ensure students with autism are successful learners in the music classroom (National Autism Center, 2015).

Results of this study found only 62.2% of music educators received one to three classes as undergraduate students with information regarding students with autism. Most music educators were not even informed about students with autism in college; therefore, they lack professional training regarding students with autism in the music classroom. Also, results indicated only 36.5% of music educators received only one to three classes as graduate students with information regarding students with autism. Music educators do not have the knowledge to look for triggers to manage the behavior of students with autism. Music educator programs need to provide future music educators resources and strategies for teaching students with autism in the music classroom (Salvador, 2010).

The majority of music educators do not receive appropriate professional development opportunities from their school system related to students with autism. Results from this study indicated only 48% of the participants received information at faculty meetings and only 36.5% received information at district-level meetings regarding students with autism. Music educators must have appropriate professional development to teach students with autism in the music classroom (Colwell & Thompson, 2000). School systems must provide training to music educators on how to teach students with autism through in-service trainings or other professional development opportunities.

Music educators must receive information pertaining to IEP for students with autism. Results indicate 54.7% of the music educators received IEP information regarding students with autism; however, 45.3% of the participants did not receive information regarding the IEP regularly. As IDEA indicates, music educators are required by law to know the impact of the

students' disabilities. It is essential for music educators to look at current goals of the IEP and implement the goals in the music classroom (Draper, 2020b; Swanson, 2019). Music educators must advocate for students with autism by requesting information regarding the IEP so students with autism can learn to their fullest potential in the music classroom.

The majority of music educators reported students with autism do not hinder the learning of other students in the classroom. According to Darrow (1999), music educators often have negative attitudes when teaching students with autism in the classroom. Music educators reported students with autism demand an excessive amount of teacher time and impede the educational progress of other students (Darrow, 1999; Darrow, 2009b). Music educators must teach all students regardless of their disability and not let personal opinions affect their teaching.

There is no one-size-fits-all curriculum when teaching students with autism. Each student with autism is unique. Music educators must equip themselves with various strategies, resources, training, and professional development so students with autism will be able to learn music to their fullest potential. Music educators must request access to the IEP to learn the skill level, accommodations and modifications, annual goals, and behavior plan for students with autism. Music educators must plan and adapt lessons to meet the abilities of students with autism in the music classroom (Mazur, 2004).

Future Research Implications

Further research recommendations include studying a larger sample size of music educators to determine their use of evidence-based instructional strategies for students with autism. Do K-6 music educators use different evidence-based strategies based on regions such as the North, South, East, or West regions of the United States? Do K-6 music educators' perceptions of students with autism vary by region, district, state, etc.? Other recommendations

include replicating this study to include all music educators in grades K-12 to include band, orchestra, choir, etc., to determine their use of evidence-based strategies.

Future research needs to focus on professional development for current music educators. How can current music educators receive more training related to students with autism? Can local school systems provide more training? Can more training be provided at the state or national level? What can music educators do to advocate more for students with autism in their classrooms? What steps do K-12 administrators need to take to ensure all teachers know how to teach students with autism? More training also needs to be provided at local and state music conferences. Some participants indicated they received training, but all music educators need to have training regarding autism at local and state music conferences.

Future research also needs to focus on college music major's knowledge of autism. Do college music majors receive any training on autism? If so, to what extent and duration is the training? Have college professors had any training on autism? Are college professors familiar with autism?

My survey was conducted during the COVID pandemic, which likely affected my response rate. I recommend replicating this study to obtain a more extensive response rate. Music educators need to be surveyed on evidence-based practices when there is not a COVID pandemic occurring.

Another area that needs to be studied is the IEP for students with autism. Do special educators and administrators make sure all teachers, including music, receive access to the student's IEP goals, accommodations and modifications, and skill level for students with autism? How often are music educators informed about changes to the student's IEP throughout the school year? Music educators must know the student's strengths and weaknesses to teach

students with autism more efficiently. The law requires music educators to teach all students regardless of their disability.

Closing

Music educators have a legal and ethical obligation to include students with autism in the music classroom. However, results of this study indicated that many music educators do not have the appropriate resources, skills, and training to teach students with autism. Due to the lack of college courses and professional development, music educators must take the initiative to locate resources themselves. Music educators must ask for professional development from local and district school systems or attend conferences where autism is the conference's primary focus.

The purpose of this dissertation was to learn about K-6 music educators regarding their strategies, training, and perceptions when teaching students with autism in the music classroom. This study indicated music educators use preferential seating, consistent routines, echoing, model procedures, and peer helpers as strategies to assist students with autism. Music educators indicated they do not use PECS, picture schedules, and visual task analysis regularly to teach students with autism. Music educators also indicated they lack the appropriate resources, training, and skills to assist students with autism. Participants also indicated they did not receive sufficient training during their undergraduate and graduate courses or in their current school systems.

Our job as music educators is to teach students, regardless of disability, to the best of our ability in the music classroom. Music educators must collaborate with special educators to ensure students with autism receive appropriate accommodations or modifications in the music classroom. Music educators must be knowledgeable of the IEP for students with autism. Music educators must seek professional development, resources, and evidence-based strategies for

students with autism to be successful in the music classroom. Students with autism can learn and make developmental gains when provided with appropriate educational supports in the music classroom (Darrow, 2009a).

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Appendix A

Auburn University Human Research Protection Program

EXEMPTION REVIEW APPLICATION

For information or help completing this form, contact: **THE OFFICE OF RESEARCH COMPLIANCE**
Phone: 334-844-5966 Email: IRBAdmin@auburn.edu

Submit completed application and supporting material as one attachment to IRBsubmit@auburn.edu.

1. PROJECT IDENTIFICATION

Today's Date 3/6/2021

a. **Project Title** Inclusion Practices for Students with Autism in the Music Classroom: A Survey of K-6 Music Educators' Perceptions, Training, and Strategies

b. **Principal Investigator** Lisa Powell Degree(s) PhD Candidate-Music Education
Rank/Title Graduate Student Department/School Curriculum and Teaching/ College of Education
Phone Number 423-653-2427 AU Email lzp0027@auburn.edu

Faculty Principal Investigator (required if PI is a student) Dr. Nancy Barry
Title Professor Department/School Curriculum and Teaching/ College of Education
Phone Number 334-844-6787 AU Email nhb0002@auburn.edu

Dept Head Dr. Marilyn Strutchens Department/School Curriculum and Teaching/ College of Education
Phone Number 334-844-6838 AU Email strutme@auburn.edu

c. **Project Personnel** (other PI) – Identify all individuals who will be involved with the conduct of the research and include their role on the project. Role may include design, recruitment, consent process, data collection, data analysis, and reporting. Attach a table if needed for additional personnel.

Personnel Name Lisa Powell Degree (s) PhD Candidate - Auburn University
Rank/Title Graduate Student Department/School Curriculum and Teaching/ College of Education
Role Principal investigator; research design, data collection, data analysis, reporting
AU affiliated? YES NO If no, name of home institution _____
Plan for IRB approval for non-AU affiliated personnel? _____

Personnel Name Dr. Nancy Barry Degree (s) PhD in Music Education
Rank/Title Professor Department/School Curriculum and Teaching/College of Education
Role _____
Faculty Advisor

AU affiliated? YES NO If no, name of home institution _____
Plan for IRB approval for non-AU affiliated personnel? _____

Personnel Name _____ Degree (s) _____
Rank/Title _____ Department/School _____
Role _____

AU affiliated? YES NO If no, name of home institution _____
Plan for IRB approval for non-AU affiliated personnel? _____

d. **Training** – Have all Key Personnel completed CITI human subjects training (including elective modules related to this research) within the last 3 years? YES NO

The Auburn University Institutional Review Board has approved this Document for use from 02/18/2021 to _____ Protocol # 21-087 EX 2102

e. Funding source – Is this project funded by the investigator(s)? YES NO
 Is this project funded by AU? YES NO If YES, identify source _____
 Is this project funded by an external sponsor? YES No If YES, provide the name of the sponsor, type of sponsor (governmental, non-profit, corporate, other), and an identification number for the award.
 Name _____ Type _____ Grant # _____

f. List other AU IRB-approved research studies and/or IRB approvals from other institutions that are associated with this project.

2. Mark the category or categories below that describe the proposed research:

- 1. Research conducted in established or commonly accepted educational settings, involving normal educational practices. The research is not likely to adversely impact students' opportunity to learn or assessment of educators providing instruction. 104(d)(1)
- 2. Research only includes interactions involving educational tests, surveys, interviews, public observation if at least ONE of the following criteria. (The research includes data collection only; may include visual or auditory recording; may NOT include intervention and only includes interactions). **Mark the applicable sub-category below (i, ii, or iii).** 104(d)(2)
 - (i) Recorded information cannot readily identify the participant (directly or indirectly linked); **OR**
 - surveys and interviews: no children;
 - educational tests or observation of public behavior: can only include children when investigators do not participate in activities being observed.
 - (ii) Any disclosures of responses outside would not reasonably place participant at risk; **OR**
 - (iii) Information is recorded with identifiers or code linked to identifiers and IRB conducts limited review; no children. **Requires limited review by the IRB.***
- 3. Research involving Benign Behavioral Interventions (BBI)** through verbal, written responses (including data entry or audiovisual recording) from adult subjects who prospectively agree and ONE of the following criteria is met. (This research does not include children and does not include medical interventions. Research cannot have deception unless the participant prospectively agrees that they will be unaware of or misled regarding the nature and purpose of the research) **Mark the applicable sub-category below (A, B, or C).** 104(d)(3)(i)
 - (A) Recorded information cannot readily identify the subject (directly or indirectly/linked); **OR**
 - (B) Any disclosure of responses outside of the research would not reasonably place subject at risk; **OR**
 - (C) Information is recorded with identifiers and cannot have deception unless participant prospectively agrees. **Requires limited review by the IRB.***
- 4. Secondary research for which consent is not required: use of identifiable information or identifiable bio-specimen that have been or will be collected for some other 'primary' or 'initial' activity, if one of the following criteria is met. Allows retrospective and prospective secondary use. **Mark the applicable sub-category below (i, ii, iii, or iv).** 104(d)(4)
 - (i) Biospecimens or information are publically available;
 - (ii) Information recorded so subject cannot readily be identified, directly or indirectly linked; investigator does not contact subjects and will not re-identify the subjects; **OR**

- (iii) Collection and analysis involving investigators use of identifiable health information when use is regulated by HIPAA "health care operations" or "research or "public health activities and purposes" (does not include biospecimens (only PHI and requires federal guidance on how to apply); OR
- (iv) Research information collected by or on behalf of federal government using government generated or collected information obtained for non-research activities.
- 5. Research and demonstration projects which are supported by a federal agency/department AND designed to study and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs;(iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs. (must be posted on a federal web site). 104(d)(5) (must be posted on a federal web site)
- 6. Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome food without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture. The research does not involve prisoners as participants. 104(d)(6)

New exemption categories 7 and 8: Both categories 7 and 8 require Broad Consent. (Broad consent is a new type of informed consent provided under the Revised Common Rule pertaining to storage, maintenance, and secondary research with identifiable private information or identifiable biospecimens. Secondary research refers to research use of materials that are collected for either research studies distinct from the current secondary research proposal, or for materials that are collected for non-research purposes, such as materials that are left over from routine clinical diagnosis or treatments. Broad consent does not apply to research that collects information or biospecimens from individuals through direct interaction or intervention specifically for the purpose of the research.) **The Auburn University IRB has determined that as currently interpreted, Broad Consent is not feasible at Auburn and these 2 categories WILL NOT BE IMPLEMENTED at this time.**

***Limited IRB review – the IRB Chairs or designated IRB reviewer reviews the protocol to ensure adequate provisions are in place to protect privacy and confidentiality.**

****Category 3 – Benign Behavioral Interventions (BBI) must be brief in duration, painless/harmless, not physically invasive, not likely to have a significant adverse lasting impact on participants, and it is unlikely participants will find the interventions offensive or embarrassing.**

3. PROJECT SUMMARY

a. Does the study target any special populations? (Mark applicable)

- Minors (under 18 years of age) YES NO
- Pregnant women, fetuses, or any products of conception YES NO
- Prisoners or wards (unless incidental, not allowed for Exempt research) YES NO
- Temporarily or permanently impaired YES NO

b. Does the research pose more than minimal risk to participants? YES NO

Minimal risk means that the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or test. 42 CFR 46.102(i)

c. Does the study involve any of the following?

- Procedures subject to FDA regulations (drugs, devices, etc.) YES NO
- Use of school records of identifiable students or information from instructors about specific students. YES NO
- Protected health or medical information when there is a direct or Indirect link which could identify the participant. YES NO
- Collection of sensitive aspects of the participant's own behavior, such as illegal conduct, drug use, sexual behavior or alcohol use. YES NO
- Deception of participants YES NO

4. Briefly describe the proposed research, including purpose, participant population, recruitment process, consent process, research procedures and methodology.

The purpose of this descriptive, quantitative study is to survey K-6 music educators from the United States regarding their strategies, training, and perceptions for teaching students with autism in the music classroom. A pilot study will be conducted by using retired Alabama music educators as participants. Once IRB approved, I will send my pilot survey to the Alabama Music Educators Association (AMEA). AMEA is Alabama's professional organization for music educators. They will use their database of retired Alabama music educators to email my pilot survey to the participants. There will be no identifiable information linked to their responses. AMEA keeps their database protected and private; therefore, they must have IRB approval before they email the survey to retired music educators in Alabama. I will give the retired music educators two weeks to complete the survey. The data will be collected through an anonymous Qualtrics survey. After the pilot study is completed, I will analyze the results and make the necessary corrections to the survey instrument. Then, I will administer the survey for my dissertation.

The survey participants will be limited to current music educator members of the National Association for Music Education (NAfME) who teach music at the K-6 level. The researcher will not view or have access to the NAfME database. The NAfME database is protected and private. Once my survey is IRB approved, NAfME will send the recruitment and reminder emails to the participants for the researcher.

The participants will receive my invitation email with a link to complete the Qualtrics survey. If the participants are willing to take the survey, they will read the consent form on the screen before taking the survey. If the participants agree with the consent form then they will choose, "I consent" and continue with the study by selecting the appropriate check box on the screen. If they do not agree with the consent form, then the participants will choose they do not consent by selecting the appropriate check box and they will be taken out of the survey

The participants will receive a total of three emails within a three-week time frame with a link to complete the survey. One week after the initial email is sent to the participants, the first email reminder will be sent by NAfME. One week after the first email reminder is sent, the second email reminder will be sent by NAfME. I will give the participants two weeks to complete the survey after the second email reminder. All results will be anonymous, and no compensation will be given to the participants. There will be no identifiable information linked to the participants' responses. The survey will be closed after a four-week time frame. Survey data will be downloaded from Qualtrics and analyzed using descriptive, quantitative methods.

The following website will provide more information about NAfME's agreement for research dissemination. <https://nafme.org/nafme-research/research-survey-assistance-from-nafme/>

I anticipate the number of participants in the pilot study will be 25 and the minimum number of participants for the main study will be 200 participants

5. Waivers

Check any waivers that apply and describe how the project meets the criteria for the waiver. Provide the rationale for the waiver request.

- Waiver of Consent (Including existing de-identified data)**
- Waiver of Documentation of Consent (Use of Information Letter)**
- Waiver of Parental Permission**

All retrospective information will be de-identified.

The survey is entirely anonymous and no identifiable information will link answers with participants.

6. Describe how participants/data/specimens will be selected. If applicable, include gender, race, and ethnicity of the participant population.

The pilot study will be conducted by using snowball sampling to identify retired music educators as participants. After the pilot study is completed, I will analyze the results and make any necessary corrections to the survey instrument. Then, I will continue to conduct the survey for my dissertation. The participants will be K-6 music educators from the United States. They will be invited to participate through the National Association for Music Education (NAfME) membership list. NAfME is a professional organization that provides resources to music educators at all levels. The participants will be limited to current music educator members of NAfME who indicated teaching at the K-6 level on their membership application. The participants will receive an email with a link to complete the Qualtrics survey.

7. Does the research involve deception? YES NO If YES, please provide the rationale for deception and describe the debriefing process.

8. Describe why none of the research procedures would cause a participant either physical or psychological discomfort or be perceived as discomfort above and beyond what the person would experience in daily life.

The survey is entirely anonymous and no identifiable information will be collected. The participants will not experience any physical or emotional discomfort with the survey items. All survey items are based on research.

9. Describe the provisions to maintain confidentiality of data, including collection, transmission, and storage.

There will be no identifiable information collected from the pilot survey. The pilot study will be conducted by using retired Alabama music educators as participants. Once IRB approved, I will send my pilot survey to the Alabama Music Educators Association (AMEA). AMEA is Alabama's professional organization for music educators. They will use their database of retired Alabama music educators to email my pilot survey to the participants. There will be no identifiable information linked to their responses. AMEA keeps their database protected and private; therefore, they must have IRB approval before they email the survey to retired music educators in Alabama.

There will be no identifiable information collected from the survey. The National Association for Music Education (NAfME) will be used to recruit K-6 music educators but there is no way of knowing which participants receive the survey. The survey participants will be limited to current music educator members of the National Association for Music Education (NAfME) who teach music at the K-6 level. The researcher will not view or have access to the NAfME database. The NAfME database is protected and private; therefore, they do not share any information with the researcher regarding the participants. Once my survey is IRB approved, NAfME will send the recruitment and reminder emails to the participants for the researcher. All anonymous survey data will be stored on Qualtrics with no identifiable information.

- 10. Describe the provisions included in the research to protect the privacy interests of participants (e.g., others will not overhear conversations with potential participants, individuals will not be publicly identified or embarrassed).**

All survey data will be anonymous. No identifiable information will be collected from the Qualtrics survey.

- 11. Will the research involve interacting (communication or direct involvement) with participants?**
 YES **NO** If YES, describe the consent process and information to be presented to subjects.

This includes identifying that the activities involve research; that participation is voluntary; describing the procedures to be performed; and the PI name and contact information.

The researcher will not directly communicate to the participants. The participants in the pilot study will receive a recruitment letter and the pilot survey designed by the researcher through AMEA. The participants in the study will receive a recruitment letter, two reminder emails, and the survey designed by the researcher through NAME.

12. Additional Information and/or attachments.

In the space below, provide any additional information you believe may help the IRB review of the proposed research. If attachments are included, list the attachments below. Attachments may include recruitment materials, consent documents, site permissions, IRB approvals from other institutions, etc.

Attachments include

- 1) Memorandum
- 2) IRB Email
- 3) Highlighted IRB Application
- 4) Highlighted Pilot Study Invitation
- 5) Highlighted Information Letter-Pilot Study
- 6) Highlighted Information Letter-Main Study
- 7) Clean copy of IRB application
- 8) Clean copy of Pilot Study Invitation Email
- 9) Clean copy of Main Study Invitation Email
- 10) Clean copy of Reminder email # 1
- 11) Clean copy of Reminder email # 2
- 12) Clean copy of Survey form for Pilot Study
- 13) Clean copy of Survey form for Main Study
- 14) CITI Certificates-Student PI
- 15) CITI certificates-Faculty PI

Principal Investigator's Signature Lisa Powell Date 3/6/2021

If PI is a student,
Faculty Principal Investigator's Signature Nancy Barry Date 3/6/2021

Department Head's Signature Marilyn Stutehna Date 3/08/2021

Appendix B

Invitation Email

Subject: Survey Research: Inclusion Practices of Students with Autism in the Music Classroom

Dear Colleagues,

I hope you are having a great semester. My name is Lisa Powell, Ph.D. Music Education candidate at Auburn University, Auburn, Alabama. I am writing to ask you for your assistance with my research study titled “Inclusion Practices of Students with Autism in the Music Classroom: A Survey of Music Educators Perceptions, Training, and Strategies”. Please consider participating in my brief online survey, linked below. My goal for this survey is to examine K-6 music educators’ perceptions, training, and strategies for students with autism in the music classroom.

The survey should take no more than 10 minutes.

There are no risks or discomforts anticipated with participating in this survey. There will be no compensation for participating. Your participation is completely voluntary, and all responses are anonymous.

This invitation is sent as a service to the profession by Name, as part of our ongoing efforts to support research in music education. The sending of this invitation does not constitute endorsement of the content or quality of the research project for which this invitation is sent by NAFME or its component Societies or Councils.”

The Auburn University Institutional Review Board has approved this document for use from February 18, 2021 to --- Protocol # 21-087 EX 2102, Powell”

Thank you for your consideration and time!

To begin the survey, click on this link:

https://auburn.qualtrics.com/jfe/form/SV_4I9V9K0UCBuV73U

Best,

Lisa Powell

lzp0027@auburn.edu

Ph.D. Candidate, Music Education

Auburn University, Auburn, Alabama

Appendix C

Reminder Email

Subject: Your Voice Matters: Survey for Inclusion Practices of Students with Autism in the Music Classroom

Dear Colleagues,

Earlier last week I sent an email message asking for your participation in my research study titled “Inclusion Practices of Students with Autism in the Music Classroom: A Survey of Music Educators Perceptions, Experiences, Training, Interventions, and Strategies.” I am recruiting current K-6 music educators to share their perceptions, training, and strategies for students with autism in the music classroom.

There are no risks or discomforts anticipated with participating in this survey. There will be no compensation for participating. Your participation is completely voluntary, and all responses are anonymous.

If you have completed the survey, thank you. Because the survey is anonymous, I have no way of knowing who has completed it. If you have not had an opportunity to take the survey, I would appreciate your time and support. This survey should take no more than 10 minutes to complete.

This invitation is sent as a service to the profession by Name, as part of our ongoing efforts to support research in music education. The sending of this invitation does not constitute endorsement of the content or quality of the research project for which this invitation is sent by NAFME or its component Societies or Councils.”

The Auburn University Institutional Review Board has approved this document for use from February 18, 2021 to --- Protocol # 21-087 EX 2102, Powell”

Thank you for your consideration and time!

To begin the survey, click on this link:

https://auburn.qualtrics.com/jfe/form/SV_419V9K0UCBuV73U

Best,

Lisa Powell

lzp0027@auburn.edu

Ph.D. Candidate, Music Education

Auburn University, Auburn, Alabama

Appendix D

Survey Letter & Survey

Introduction

INFORMATION LETTER

for a research study entitled

"Inclusion Practices for Students with Autism in the Music Classroom: A Survey of K-6 Music Educators' Perceptions, Training, and Strategies"

You are invited to participate in a research study to examine music educators' perceptions, training, and strategies for students with autism in the music classroom. The study is being conducted by Lisa Powell, Ph.D. Candidate at Auburn University, Auburn, Alabama, under the direction of Dr. Nancy Barry, Professor of Curriculum and Teaching. You are invited due to your position as an experienced K-6 music educator and NAFME member.

What will be involved if you participate? If you decide to participate in this research study, you will complete a short survey regarding your perspective, experiences, training, interventions, and strategies for students with autism in the music classroom. The survey will be completely anonymous and no identifiable information will be collected. Your total time commitment will be approximately ten minutes.

Are there any risks or discomforts? There are no risks anticipated with participating in this survey. All responses are anonymous, and no personal identifiable information will be associated with your responses in any reports of this research.

Are there any benefits to yourself or others? Results from the study will provide K-6 music teachers with information on inclusion practices that are used in the music classroom for students with autism. There are no direct benefits to the participants of the study.

The Auburn University Institutional
Review Board has approved
Document for use from
02/18/2021 to -----
Protocol # 21-087 EX 2

Will you receive compensation for participating? You will not receive any compensation for participating in this research.

Are there any costs? There are no costs to you for participating in this study.

If you change your mind about participating, you can withdraw at any time by closing your browser window. Your participation is completely voluntary and no identifiable information will be collected. Your decision about whether to participate or not to participate will not affect your future relations with Auburn University or the Department of Curriculum and Teaching.

Any data obtained in connection with this study will remain anonymous. Your privacy and the data you provide will be protected by reporting all results without any personal identifiers. Information collected through your participation may be used to fulfill educational requirements, published in a professional journal, and/or be presented at a professional meeting or conference.

How will you access and complete the survey? You will access and complete the survey through Qualtrics

If you have questions about this study, please contact Mrs. Lisa Powell at lzp0027@auburn.edu or Dr. Nancy Barry at nhb002@auburn.edu. Thank you in advance for your time and participation.

If you have any questions about your rights as a research participant, you may contact the Auburn University Office of Research Compliance or the Institutional Review Board by phone (334) 844-5966 or by email at IRBadmin@auburn.edu or IRBChair@auburn.edu

Having read the information above, you must decide if you want to participate in this research project.

Do you wish to continue with the study?

- I consent, continue with the study
- I do not consent, withdraw from the study

Strategies used in the music classroom

When teaching students with autism, how often do you use the following strategies to manage behavior in your classroom?

Strategies for Classroom Management

	Never	Rarely	Sometimes	Often	Always
Preferential seating	<input type="radio"/>				
Consistent routine	<input type="radio"/>				
Picture schedule	<input type="radio"/>				
Use pictures or icons for communication (PEGS)	<input type="radio"/>				

When teaching students with autism, how often do you use the following strategies while singing in your classroom?

Strategies for Classroom Singing Activities

	Never	Rarely	Sometimes	Often	Always
Use pictures or icons for communication (PEGS)	<input type="radio"/>				
Model procedures (how to sing)	<input type="radio"/>				
Echoing	<input type="radio"/>				
Color code the pitches or rhythms	<input type="radio"/>				

When teaching students with autism, how often do you use the following strategies while playing instruments in your classroom?

Classroom Instrument Playing Activities

	Never	Rarely	Sometimes	Often	Always
Use pictures or icons for communication (PEGS)	<input type="radio"/>				
Model procedures (how to hold/play an instrument)	<input type="radio"/>				

	Never	Rarely	Sometimes	Often	Always
Peer helper	<input type="radio"/>				
Visual Task Analysis	<input type="radio"/>				

Classes and Professional Development

Think about any classes or professional development that you have completed or are completing for teaching students with autism

Was teaching student with autism addressed in any of your undergraduate or graduate classes?

- Yes
- No

As an undergraduate student, how many classes included information about teaching students with autism?

- 1-3 classes
- 4-6 classes
- 7 or more classes
- None at all
- Other (specify)

As a graduate student, how many classes included information about teaching students with autism?

- 1-3 classes
- 4-6 classes
- 7 or more classes
- None at all
- Have not taken graduate classes
- Other (specify)

Which of the following professional development opportunities have you attended related to teaching students with autism? (Select all that apply)

- Faculty meetings District
- level meetings
- Local music conferences
- State music conferences
- None of the above

How well do you think your training prepared you to meet the needs of students with autism?

	Very Poor	Below Average	Average	Above Average	Excellent
Faculty meetings District	<input type="radio"/>				
level meetings	<input type="radio"/>				
Local music conferences	<input type="radio"/>				
State music conferences	<input type="radio"/>				
Undergraduate/Graduate classes	<input type="radio"/>				

Do you feel adequately prepared to teach students with autism in your music classroom based on your training and professional development?

- Yes
- No

Individualized Education Program (IEP)

The next few statements pertain to your knowledge of an Individualized Education Program (IEP) for students with autism.

Please check the response that most accurately represents your familiarity with the following sections in the IEP.

Individualized Education Program(IEP)

	Not familiar at all 1	2	3	4	Very familiar 5
Student's annual goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student's behaviorplan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Current skill level of the student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student's Accommodations or Modifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Student's supplementary aids and services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Are you included in IEP meetings for students with autism in your music class?

- Yes
 No

Do you receive any information pertaining to the IEP for students with autism?

- Yes
 No
 Occasionally
 Other (specify)

Teacher Perceptions of Students with Autism

Please rate your agreement level for the following statements regarding students with autism.

Students with autism.....

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
should have the choice to attend music classes	<input type="radio"/>				
hinder the learning of other students in the music classroom	<input type="radio"/>				
should meet the same goals as all other students	<input type="radio"/>				
frequently need accommodations and modification in music class	<input type="radio"/>				

Think about your opinion regarding your ability to effectively teach students with autism. Please indicate your agreement or disagreement with each statement.

Music teachers have.....

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
the appropriate resources to teach students with autism	<input type="radio"/>				
the skills to manage behavior of students with autism	<input type="radio"/>				
the appropriate training to teach students with autism	<input type="radio"/>				

The last few questions pertain to you and your experience in the music classroom. Please answer each question.

In which state do you currently teach?

What is the setting of your school?

- Urban
- Rural
- Suburban

How many students are in your K-6 school?

- Less than 500 students
- 501-1000
- 1001-2000
- More than 2001

How many students in your K-6 school are receiving free or reduced lunch?

- None/Almost none
- Less than half
- Half
- More than half
- Almost all/all

What is your current educational degree level?

- Bachelor's Degree Master's
- Degree
- Education Specialist Degree
- Doctoral Degree
- Other (Specify)

How many years have you been teaching music in the classroom?

- Less than 5 years
- 6-15 years
- 16-25 years
- 26-35 years
- 36 or more years

Appendix E



NAfME Research Assistance Program

INFORMATION SHEET

LIST CRITERIA

Geography:

You may limit your search by specific state(s) or by zip code range. If neither applies to your audience, leave this section blank.

Teaching Level and Interest Area:

This section is based on the complete profile information of members. We do not guarantee that the member is currently teaching this level/area.

ADDITIONAL SERVICES

Additional List Criteria:

Any selected criteria over two is an additional \$10 each.

Additional Members:

Contact Rebecca Poorbaugh, rebeccap@nafme.org, for an approximate number of members in your desired audience. Each additional 5,000 members is \$25 per 5,000 (or any part thereof).

Resend of Initial Email:

Resends are limited to one per approved research project. The one follow-up email is sent to the entire audience. We are unable to remove any member who has completed your survey. The resend is an additional \$25.

Rush Order vs. Standard:

Rush Order: Your email will be processed and disseminated within five business days upon receipt of materials and will not be subject to the NAFME marketing calendar. Rush order is an additional \$50. Standard Order: Upon receipt of materials, allow 5-7 business

days to process and schedule your request. Your email will be scheduled in the order it is received and is subject to the available dates on the NAFME marketing calendar.



NAfME Research Assistance Program

INFORMATION SHEET

Standard Practices and Information

Scheduling:

Emails are scheduled at Noon on the agreed-upon date(s). This is to discourage overlap of NAFME marketing communications.

Follow-Up:

Approximately one week after each email, you will be notified of the following email stats.

- Number of emails sent
- Number of opens
- Number of clicks
- Number of bounce backs
- Number of “did not open”

Average Email Stats.:

The average open rate of the initial research email is 33%

The average click rate of the initial research email is 9%*

The average open rate of the follow-up research email is 32% The average click rate of the follow-up research email is 7%*

*The average click rate does not guarantee an equivalent response rate.

The Research Email

As the researcher, you are required to supply the final copy of your research email. The email should describe your project and entice the member to complete your survey. Send the final email copy in a Word document along with your completed form. The final email needs to contain the following:

- 1) The subject line at the top

- 2) Brief description of your research
- 3) Contact information for you, your colleagues (if applicable), and the IRB. 4) URL to survey

If you have any questions about the Research Order Form or this process, contact Rebecca Poorbaugh, rebeccap@nafme.org, for assistance.



RESEARCH ASSISTANCE FROM NAFME

NAfME has had a long association with the research community in schools, colleges, and universities, and through our members who have a keen interest in supporting research efforts in the field of music education. We wish to support those who need to communicate in a broad and timely fashion with potential research subjects or collaborators (e.g. members who might be asked to complete a survey, participate in an experimental research study, or collaborate in evaluating the effectiveness of a new instructional strategy). With this in mind, **NAfME is pleased to provide indirect access to the association's membership list using our e-mail transmission platform.**

The purpose of providing this research assistance is to allow those with a legitimate research program or material to reach out to NAFME's membership in a way that might result in the collection of additional data points that may be useful to complete ongoing research projects. The majority of our members are in the United States. Our members represent all interests, specialties, and teaching levels, with experience ranging from the Collegiate and first-year teacher to highly skilled and seasoned professionals. The list is highly accurate, and current. We estimate that nearly 50% of all music educators in the U.S. are NAFME members. **This is your opportunity to send a research-related message to NAFME members. This service is available for members only.**

Research Transmission via Email - Details:

- **Standard Transmission: \$50.00**
 - **Includes:** Transmission of an HTML or text-based e-mail to **5,000 members or fewer**, with up to 2 selection criteria (example: states, teaching levels, etc.), using NAFME's mass e-mail transmission tool.
 - The transmission is sent by NAFME on the individual's / company's / institution's behalf.
 - An NAFME staff member will request the text that will be included in your e-mail and will transfer it to our system. The blast will be sent using a standard NAFME (design) template.
 - Minor proofing of design and content is included as part of the standard service. ○ Though **member e-mail addresses are not provided directly to the client** as part of this program, you may elect to forward members to a survey or other related tool, or have replies sent to a specific survey tool, department, or staff member.
 - NAFME will confirm final cost and request final approval from client prior to transmission. ○ E-mails are approved / scheduled **within five business days** upon receipt of order and payment, based on network availability. This does not guarantee transmission within five business days.

- **Requirements:** Proof of current membership and a **valid IRB (Institutional Review Board) number** must be presented to NAFME by the client prior to any approval/scheduling of e-mail transmissions.
 - **The following disclaimer must be included in the e-blast text:** “This invitation is sent as a service to the profession by NAFME, as part of our ongoing efforts to support research in music education. The sending of this invitation does not constitute endorsement of the content or quality of the research project for which this invitation is sent by NAFME or its component Societies or Councils.”
 - **Regarding Content:** NAFME reserves the right to approve ALL content prior to transmission. NAFME will deny requests for transmission of messages/materials which include non-research-related material and/or links to specific product sales pages.
- **Additional Services:**
 - Transmission to more than 5,000 members: **\$25.00 for each add'l 5,000 members (or portion thereof)**
 - Additional list criteria (in excess of 2 criteria): **\$10.00 per criteria**
 - Re-send to original distribution list (limit one): **\$25.00**
 - Rush Order (guaranteed transmission in less than five business days): **\$50.00**
 - **To Order:**
 - Provide a copy of the completed order form, payment, and a sample of your intended text. Membership and a valid IRB number are required. Send all materials to NAFME by mail or e-mail. See the order form for the current mailing address / e-mail address.



RESEARCH ASSISTANCE ORDER FORM

Mail: NAFME, Attn: Rebecca Poorbaugh, 1806 Robert Fulton Drive, Reston, VA 20191. **E-mail:** rebeccap@nafme.org.

NAME _____ Member ID _____

COMPANY / INSTITUTION _____ IRB Number _____

PHONE _____ E-MAIL _____

ADDRESS _____

CITY _____ ST/PROV _____ ZIP _____

List Criteria (first 2 are free):

Please list any specifications below, according to geography (ZIP, state, foreign), teaching level (elementary, higher education, etc.) and/or teaching area (choral, instrumental, jazz, etc.).

Geography (if applicable): BY STATE BY ZIP CODE (range)

Details:

Teaching Level: Private/Studio Pre-School
 Elementary Only Middle School / Jr. High Only
 High School Only K-12 Collegiate (students)
 College/University (professor/staff)
 Other (please list): _____

Interest Area: Band Orchestra Choral Marching Band
 Guitar Voice Show Choir
 Jazz Special Education Teacher Education
 Research Hist/Theory/Comp General Music
 Mariachi Technology Keyboard

Services Requested (select all that apply, and list the number of additional on the line):

- Transmission to 5,000 members (see details on page 1): **\$50.00**
 - Basic Proofing/Programming Time : **Included**
 - Additional List Criteria (in excess of 2): **\$10.00 x _____**
 - Transmission to an additional 5,000 members **\$25.00 x _____**
 - Re-send (limit one): **\$25.00**
 - Rush Order (guaranteed transmission < 5 business days): **\$50.00**
- SUBTOTAL:** \$ _____

Payment Type:

Credit Card Check

If credit, please choose: Visa MasterCard Amex Discover

Credit Card Number: _____ Exp. Date: _____ CVV: _____

_____ Name (as it appears on card):

Agreement: By signing this form below, you agree that you have the full power and authority to enter into this agreement on behalf of your company or institution. The company / institution agrees that this transmission shall be for legitimate research purposes and is not intended to serve as a sales tool.

Signature of Representative: _____ **Date:** _____

Current as of 3/2021. This service is available to members only. Rules and restrictions subject to change without notice.