String Teachers' Perceptions of Inclusion of Students with Autism in Classroom Settings

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Tables</td>
<td>v</td>
</tr>
<tr>
<td>List of Figures</td>
<td>vi</td>
</tr>
<tr>
<td>Abstract</td>
<td>vii</td>
</tr>
<tr>
<td>1. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>2. REVIEW OF LITERATURE</td>
<td>11</td>
</tr>
<tr>
<td>3. METHOD</td>
<td>19</td>
</tr>
<tr>
<td>4. RESULTS</td>
<td>26</td>
</tr>
<tr>
<td>5. DISCUSSION</td>
<td>37</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>42</td>
</tr>
<tr>
<td>A. INSTITUTIONAL REVIEW BOARD APPROVAL</td>
<td>42</td>
</tr>
<tr>
<td>B. TEACHER E-MAIL INVITATION</td>
<td>43</td>
</tr>
<tr>
<td>C. ASTA STATE PRESIDENT E-MAIL INVITATION</td>
<td>44</td>
</tr>
<tr>
<td>D. SURVEY INSTRUMENT</td>
<td>45</td>
</tr>
<tr>
<td>E. RESPONSES TO INTERVIEW QUESTIONS</td>
<td>50</td>
</tr>
<tr>
<td>References</td>
<td>57</td>
</tr>
<tr>
<td>Biographical Sketch</td>
<td>62</td>
</tr>
</tbody>
</table>
LIST OF TABLES

3.1 Participant Demographics by State ................................................................. 24
3.2 Participant Breakdown by Grade-Levels Taught ............................................. 25
4.1 Means and Standard Deviations of Responses ............................................... 35
LIST OF FIGURES

4.1 “I feel that students are successfully integrated into my strings class.” ........................................ 27
4.2 “I learned to accommodate students by reading published literature.” ....................................... 28
4.3 “I learned to accommodate students through professional development.” ............................... 29
4.4 “I learned to accommodate students through collaboration.” ................................................... 29
ABSTRACT

Autism Spectrum Disorder (ASD), or autism, refers to a group of neurological disorders. At the most recent estimate, the Center for Disease Control estimated that 1 child in 68 has an autism diagnosis. Though research has shown music to be an effective intervention in therapy settings for students with ASD, little research has been done with respect to inclusion in instrumental classroom settings. The present study sought to examine string teachers’ perceptions of inclusion of students with ASD in classroom settings.

Fifty-one classroom string and orchestra teachers served as participants for this study. This study was conducted in two phases. Phase I consisted of a survey where teachers were asked to respond to statements using a 5-point Likert-type scale. Phase II consisted of e-mail based interviews of small portion \((n = 11)\) self-selected participants. Results of this study revealed that many string teachers responded with overall positive perceptions of inclusion of students with ASD. Results also revealed that there appeared to be no significant relationship between years of experience and perceptions of successful inclusion, and no significant relationship between level of education and perceptions of successful inclusion.
CHAPTER 1

INTRODUCTION

**Autism Spectrum Disorder**

Autism was first identified and described as a human condition in the 1940s (Asperger, 1944; Kanner, 1943). American psychiatrist Leo Kanner (1943) and Austrian physician Hans Asperger (1944) separately published works that used the term “autistic” and described individuals with “social deficits and unusual behaviors” (Lyons & Fitzgerald, 2007, p. 2022). These men portrayed individuals with autism as “perplexing and mystifying” (Simpson, de Boer-Ott, Smith-Myles, 2003). Since that time, researchers from many fields have attempted to demystify the condition so that individuals with autism can be better understood.

According to the Center for Disease Control, approximately 1 in 68 children living in the United States has been diagnosed with Autism Spectrum Disorder (Christensen et al, 2016). According to the American Psychiatric Association, estimated frequencies for autism spectrum disorder across the United States and abroad have approached 1% of the population (American Psychiatric Association, 2013). At present, autism cannot be determined by any single cause and the exact causes are still unknown to researchers (Darrow and Armstrong, 1999).

Autism Spectrum Disorder (ASD), also commonly referred to as “Autism,” is a group of neurological development disorders. The rate of ASD is much higher among boys than girls, at 1 in 42 children and 1 in 189 children, respectively (Christensen et al, 2016). Prior to 2013, ASD was identified as separate neurological disorders: autistic disorder, Asperger syndrome, childhood disintegrative disorder, and pervasive developmental disorder-not otherwise specified.
In 2013, the aforementioned neurodevelopmental disorders were re-classified into one broad diagnosis (American Psychiatric Association). The current diagnostic criteria for ASD per the American Psychiatric Association (2013) is the following:

A. Persistent deficits in social communication and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

2. Deficits in nonverbal communicative behaviors used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behavior to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

B. Restricted, repetitive patterns of behavior, interests, or activities, as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive):
1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).

2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).

3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g. strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).

4. Hyper- or hypo-reactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

C. Symptoms must be present in the early developmental period (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum
disorder and intellectual disability, social communication should be below that expected for general developmental level (p. 50).

It is also not uncommon for a person with ASD to also have an intellectual impairment, language impairment, and/or a concurrent diagnosis of an additional neurological disorder such as attention-deficit/hyperactivity disorder (American Psychiatric Association, 2013).

**Education for Students with ASD under the Law**

School-based music education for students with special needs, including ASD, can occur in inclusion settings, self-contained settings, and private lesson settings (Adamek & Darrow, 2005; Hammel & Hourigan, 2011). Jellison (2015) stated, “Students with disabilities were denied ‘rich music experiences’ for many years because they were not able to participate in ‘regular’ music classes with typically developing peers” (p. 55). According to the United States Department of Education (2016), the number of children with ASD in schools who received services under IDEA in the United States rose from 498,000 during the 2012-2013 school year to 538,000 during the 2013-2014 school year.

There are two main pieces of legislation that afford rights to students with disabilities in school settings: The Individuals with Disabilities Education Act (IDEA) and Section 504 of the Rehabilitation Act of 1973. Both federal laws mandate that children with exceptionalities, including autism, are to be provided with a free and appropriate education (FAPE) in the least restrictive environment (LRE).

In the 1970s more than half of all children living with a disability in the United States had limited access to an appropriate education (U.S. Department of Education, 2010). Therefore,
Public Law 94-142 was passed in 1975 to guarantee access to a free and appropriate public education for all children with disabilities. This law, otherwise known as the Education for All Handicapped Children Act, laid the groundwork for future legislation regarding the education for students with disabilities.

The Education for All Handicapped Children Act was amended in 1983 and 1990, when it became the Individuals with Disabilities Education Act (U.S. Department of Education, 2007a). The most recent amendments occurred in 2004, and aligned IDEA with the No Child Left Behind Act (U.S. Department of Education, 2007b). These amendments “sharpened federal mandates to increase state and local accountability for educating children with disabilities and expanded methods to identify students with specific learning disabilities” (U.S. Department of Education, 2010, p. 9). According to IDEA, a “child with a disability” refers to a child with: (1) intellectual disabilities, (2) hearing impairments, (3) deafness, (4) speech or language impairments, (5) visual impairments, (6) blindness, (7) serious emotional disturbance, (8) orthopedic impairments, (9) autism, (10) traumatic brain injury, (11) other health impairments, (12) specific learning disabilities, and (13) multiple disabilities (Individuals with Disabilities Education Act, 2004).

Under IDEA, students identified as having a disability will also have an Individualized Education Program (IEP) team. This team is composed of:

1. the parents of a child with a disability;
2. not less than 1 regular education teacher of such child (if the child is, or may be, participating in the regular education environment);
3. not less than 1 special education teacher, or where appropriate, not less than 1 special education provider of such child;
4. a representative of the local educational agency who--
   a. is qualified to provide, or supervise the provision of, specially designed
      instruction to meet the unique needs of children with disabilities;
   b. is knowledgeable about the general education curriculum; and
   c. is knowledgeable about the availability of resources of the local
      educational agency;

5. an individual who can interpret the instructional implications of evaluation
   results, who may be a member of the team described in clauses (ii) through (vi);

6. at the discretion of the parent or the agency, other individuals who have
   knowledge or special expertise regarding the child, including related services
   personnel as appropriate; and

7. whenever appropriate, the child with a disability (Individuals with Disabilities
   Education Act, 2004).

Students with disabilities, including ASD, are also protected under Section 504 of the
Americans with Disabilities Act. “Section 504 prohibits discrimination on the basis of disability
in programs or activities that receive Federal financial assistance from the United States
Department of Education” (U.S. Department of Education, 2015). Section 504 defines a person
with a disability as “any person who: (1) has a physical or mental impairment which
substantially limits one or more major life activities, (2) has a record of such an impairment, or
(3) is regarded as having such an impairment” (U.S. Department of Education, 2015). The
language used to classify a person with a disability under Section 504 is broader than IDEA.
Therefore, a person with a disability such as (what was previously known as) Asperger’s
syndrome might not qualify for services under IDEA, but may qualify under Section 504.
Need for the Study

Although the most recent iteration of IDEA mandated the use of “evidence-based educational techniques” when teaching students with special needs (Adamek & Darrow, 2010), there is an underwhelming amount of existing empirical research regarding inclusive music education (Jellison & Draper, 2015). There exists an even larger void of research regarding string music education in inclusive settings (Gooding & Yinger, 2014). An integrative review of literature conducted by Gooding and Yinger (2014) found only 20 articles published since the passage of IDEA specifically referenced string instruction in inclusive settings, and of those articles only four were empirical by design.

Bugaj (2016) mentioned a shift in the string education paradigm toward the favor of inclusive classrooms, which implied string music educators are more willing to include students with exceptionalities in their classrooms than previous research suggested. With this shift in attitude toward inclusion, more research regarding evidence based practices is warranted to better equip string teachers to adequately include students with exceptionalities, including ASD, in classroom settings. It should be noted that each person with ASD displays symptoms in ways that are idiosyncratic, therefore there are no guaranteed universal interventions.

Purpose and Research Questions

Though few exist, studies have been conducted examining music educators’ perceptions of inclusion of students with special needs. However, a very limited number of studies focus explicitly on inclusion of students with ASD. Due to the rising number of children diagnosed with ASD (Christensen et al, 2016), and the lack of existing research regarding inclusion of these students in string classrooms (Gooding & Yinger, 2014), the purpose of this study was to
investigate string orchestra teachers’ perceptions of inclusion of students with ASD in their ensembles. Specifically, the research questions were:

1. What are the current rates of inclusion of students with ASD in orchestra classrooms?
2. How successful do teachers feel they are when accommodating students with ASD in their ensembles?
3. From what sources are string teachers obtaining their information on how to best accommodate students with ASD?
4. Do years of experience or level of education have an effect on teacher perception of success?

Limitations

The nature of survey based descriptive research is limited in that the results are dependent on responses from participants. Although attempts were made to contact as many string orchestra teachers as possible, a substantial limitation to this study was sample size. The small sample size could be due to the small number of school orchestra directors willing to complete the survey. The lack of survey completion could have been due to factors such as incorrect email addresses, email filtering, or an unwillingness to participate due to the frustration of the over-surveying that occurs in society today. To obtain the largest sample possible, the invitation to participate was sent to state chapter presidents of the American String Teachers’ Association.

Phase II of this study consisted of follow-up interviews with participants who chose to continue with the study. The interviews were conducted via email so that the orchestra teachers could respond at their own convenience.
An additional limitation to this study was that not all of the string teachers had a student in their class with ASD during the data collection process. If a string teacher had experience teaching a student with ASD in an inclusion setting, but was not currently teaching a student with ASD at the time of the study, he or she was not eligible to participate. Other excluded string teachers could have been unaware of a student with ASD in their class, or had students with ASD who did not have an existing IEP or 504 plan, which was also a stipulation for participation in the study.

**Terminology**

**Exceptional Student Education (ESE):** In Florida, children with disabilities and gifted students, who need specially designed instruction and related services are called exceptional students. The special help they are given at school is called exceptional student education. The purpose of ESE is to help each child with a disability progress in school and prepare for life after school.

**Autism Spectrum Disorder (ASD):** Autism Spectrum Disorder is the general term used to describe a group of complex neurological disorders. Formerly known as autistic disorder, Asperger syndrome, childhood disintegrative disorder, and pervasive developmental disorder-not otherwise specified.

**Individuals with Disabilities Education Act (IDEA):** legislation enacted to ensure students with disabilities are afforded a free and appropriate public education

**Individualized Education Plan (IEP):** A document that is created for each student who receives special education services. This document describes the educational needs and objectives and how these needs are to be met in each subject area.
**504 Plan:** This type of plan that falls under Section 504 of the Rehabilitation Act (1973).

Outlines any accommodations and/or modifications* a student may need to be successful during the school day. Disabilities under Section 504 are broader; therefore, students may qualify for a 504, but not an IEP. An example might be a student with a health condition that needs to take frequent trips to the restroom throughout the school day.

*Students needing modifications would typically have an IEP, not a 504.

**Free Appropriate Public Education (FAPE):** Section 504 requires a school district to provide a FAPE to each qualified person with a disability who is in the school district’s jurisdiction, regardless of the nature or severity of the person’s disability, in the Least Restrictive Environment (LRE).

**Least Restrictive Environment (LRE):** This is the ability for a student with exceptionalities to be educated among his/her typically developing peers to the “maximum extent appropriate.”

**Adaptation:** Changes in curriculum which provide students with exceptionalities opportunities for success. These changes include both accommodations and modifications.

**Accommodation:** A change in curriculum or instruction that does not greatly alter learning objectives of the course or assessment. An example of an accommodation would be giving a student extended time during a test.

**Modification (“Mod”):** Changes in curriculum or instruction that does alter learning objectives of the course or assessment to best meet the needs of the learner. An example of a modification would be re-writing a part so that the student would be tasked with performing a simpler rhythm pattern.
CHAPTER 2
REVIEW OF LITERATURE

The following review of literature explores the topic of inclusion of students with ASD in a variety of educational settings. The topics covered include: (1) the inclusion of students with ASD in general education classrooms, (2) evidence based practices in general education, (3) music teachers’ perceptions of inclusion of students with special needs, (4) existing reviews of music education inclusion research, (5) music education for students with ASD, and (6) the inclusion of students with special needs, including ASD, in string classrooms.

Inclusion of Students with Autism in General Education Classes

Autism became one of the 13 disabilities eligible for special education services under the 1990 amendments of IDEA (Zirkel, 2011). ASD is defined under IDEA as:

A developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a child’s educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences (Individuals with Disabilities Education Act, 2004).

The FAPE/LRE mandate of IDEA has spurred debates among educators and education researchers as to whether the inclusive classroom is truly the best learning environment for all students with ASD (Harrower & Dunlap, 2001; Ravet, 2011; Simpson, deBoer-Ott, & Smith-Myles, 2003). Ultimately, the LRE that is best suited for the student with ASD is left to the discretion of the IEP Team (Individuals with Disabilities Education Act, 2004).
Previous education research surrounding the inclusion of students with ASD has shown that teacher attitudes toward inclusion have not always been entirely positive. Researchers have reported that students with ASD can display a range of behaviors which can cause difficulties for the classroom teacher during inclusion settings (Strain, Wilson, & Dunlap, 2011; von der Embse, Brown, & Fortain, 2011). According to Ravet (2009), “One of the key problems for learners on the autism spectrum in the sphere of communication is that they tend to take language literally” (p.675).

According to Leblanc, Richardson, and Burns (2009) additional challenges for students with ASD in the inclusion classroom consisted of different learning styles, communication difficulties, and impaired social interactions, and stress due to changes in routines. Researchers have also stated the inclusive classroom could cause students with ASD to feel isolated from their typically developing peers (Tonnsen & Hahn, 2016). According to Crosland and Dunlap (2012), “Standardized models of individualized intervention, could provide teachers with a clear process for developing and implementing specific strategies to improve student problem behavior and promote inclusion” (p. 262).

On the other hand, some researchers and educators have indicated that the inclusive classroom could be helpful in developing social skills in students with ASD (Tonnsen & Hahn, 2016; von der Embse, Brown, & Fortain, 2011). A lack of appropriate social skills is one of the characteristic traits of a person with ASD (American Psychiatric Association, 2013); and in prior studies, researchers found social skill training as a common effective method to promote inclusion (von der Embse, Brown, & Fortain, 2011). Harrower and Dunlap (2001) found that students with severe autism could be included with success when sufficient supports were provided to the teacher.
Evidence Based Practices in General Education

One stipulation of the 2004 IDEA amendments was that special education teachers must demonstrate “matter competence” in the academic subject taught as related to the “highly qualified” component of the No Child Left Behind Act (Individuals with Disabilities Education Act, 2004). Both the No Child Left Behind Act (2002) and IDEA (2004) also mandated the use of “scientifically based research” to drive instruction for students with exceptionalities. According to No Child Left Behind, “scientifically based research” is “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (No Child Left Behind Act, 2002). However, researchers have found that “all-too often, evidence-based practices fare poorly in educational environments such as general education classrooms” (Strain, Wilson, & Dunlap, 2011).

To better understand evidence-based practices for children with ASD, a team of researchers from the University of North Carolina at Chapel Hill conducted a literature review in which 27 evidence-based practices for children, youth, and young adults with autism were examined (Wong et al., 2014). Two broad classes of interventions were examined: comprehensive treatment models and focused intervention practice (Wong et al., 2014). Researchers found that there were gaps in the knowledge available to teachers regarding focused intervention practices for children with ASD (Wong et al., 2014).

Researchers have also found that two of the most important aspects of the inclusion classroom for a student with autism are the materials and the environment, which includes the people in the classroom (Deris & Dicarlo, 2013). Tonneson and Hahn (2016) found the successful inclusion of students with ASD was equally dependent on the child with ASD and the
typical developing peers. In the aforementioned study, social acceptance by typical peers was determined to be the leading predictor of favorable attitudes of inclusion, which lead researchers to suggest that in addition to evidence-based practices, classroom teachers should facilitate positive interactions between typical children and children with ASD (Tonneson & Hahn, 2016).

In a study conducted in the United Kingdom, researchers found a peer mentoring program to be a means of “enabling both social support and cooperation in school settings” for students with ASD and their typical peers (Bradley, 2016).

**Music Educators’ Perceptions of Inclusion of Students with Special Needs**

Comparable to perceptions of inclusion among general education teachers, music educators’ perceptions of inclusion of students with special needs have been uneven throughout the implementation of IDEA. Research conducted during the early years of inclusion practices found many music teachers felt they were ill-equipped to accommodate students with special needs in instrumental music classes (Adamek, 2001; Darrow, 1999; Damer, 2001; Hoffman, 2011). Researchers also found that negative attitudes with regard to mainstreaming and inclusion were often the result of lack of exposure to students with special needs (Darrow, 1999).

A study conducted by Gfeller, Darrow, and Hedden (1990) and a subsequent study conducted by VanWeelden and Whipple (2014a), found the majority of music teachers felt successful when including students with special needs in their classrooms. Similarly, Hammel and Gerrity (2012) found the majority of music educators believed themselves to be competent ($M = 41.6; SD = 4.35$) with regard to the instruction of students with special needs when given a pretest prior to receiving professional development. These results shed a more positive outlook on teachers and inclusion as compared to a study conducted a decade prior in which general
music teachers had positive attitudes regarding inclusion of students with physical disabilities, yet negative attitudes toward the inclusion of students with mental, emotional/behavioral, or multiple disabilities (Sideridis & Chandler, 1995).

Research has consistently shown elementary and general music educators to be more willing to include students with special needs than secondary, instrumental, and choral music educators (Hoffman, 2011; Cooper, 1999; Gilbert & Asmus, 1981; White, 1981). Though Salvador (2013) found choir conductors/teachers in both school and community settings to be increasingly comfortable when accommodating students with special needs than previous research suggested (Gfeller, Darrow, & Hedden, 1990).

Shelfo (2007) found little to no differences concerning teacher training, attitudes toward inclusion, or perception of success in band or orchestra classrooms. Although no significant differences were found pertaining to perceptions of effectiveness of inclusion in relation to specialty area; VanWeelden and Whipple (2014a) found,

“Compared to perceptions of professionals who taught elementary general or MS/HS choral ensembles, secondary instrumental teachers perceived that students with special needs were more difficult to integrate into their ensembles and that their music needs would be better met in special education classes” (p. 154).

Reviews of Music Education Inclusion Research

Several systematic reviews of music education research literature have been conducted with regard to inclusion. A recent systematic review covered music education research literature in inclusive school settings from 1975 through 2013, and was conducted by Jellison and Draper (2015). Researchers found, “22 descriptive and experimental studies that could be classified and
coded according to settings, participants, research variables, measures of generalization, and
effectiveness of interventions” (Jellison & Draper, 2015, p. 325). Of the studies used in the
review, all were at the elementary or preschool levels (Jellison & Draper, 2015).

Jones (2015) found the majority of music education research in the area of
accommodations for students with special needs is centered around teacher and student
perception and attitudinal studies. A systematic review of literature conducted by Brown and
Jellison (2012) found a publication rate of approximately five articles per year pertaining to
music for students with disabilities. Of those articles, approximately 23% were studies regarding
students with ASD. When compared to a systematic review of literature; however, only three of
those articles were in inclusion settings (Brown & Jellison, 2012).

**Music Education for Students with ASD**

Due to the amount of noise and tactile stimuli associated with music education, music
special education experts have advised that the LRE for some individuals with autism may be the
self-contained classroom, and not the included classroom (Hammel & Hourigan, 2013). As with
the general education classroom, the LRE for music education is ultimately determined by the
IEP team (Individuals with Disabilities Education Act, 2004). However, researchers have found
that many children with ASD consistently demonstrate an alertness with regard to music
(Darrow & Armstrong, 1999). According to Darrow (2009), “The music classroom can provide
a positive environment in which students with autism can be academically successful and
socially appropriate” (p. 26).

Similar to general educators, music educators also described behavior to be a potential
challenge with students with ASD (Darrow, 2009; Hourigan & Hourigan, 2009). Darrow (2009)
stated that teachers should “expect that students will have some inappropriate behavior that you will need to monitor and remediate” (p. 26). Though studies have shown certain stereotypical behaviors associated with children who have ASD, such as arm flapping and swaying, were less frequent in the included music classroom when compared to a self-contained music class (Kostka, 1993).

Music therapy has been found to be an effective intervention for individuals with ASD in inclusion settings, especially for “language/communication” and “behavior/psychosocial skills” (Simpson & Keen, 2011). Kern, Wolery, and Aldridge (2007) found individually composed songs assisted children with ASD with several various aspects of routine classroom behavior, such as entering the room, greeting peers, and engaging in play. Kern and Aldridge (2006) also found music therapy interventions facilitated play and involvement between children with ASD and their typical peers.

Inclusion of Students with Special Needs in String Classroom

Research conducted during the early years of inclusion supported the possibility of string instruction for students with special needs (VanCamp, 1989). McCord and Fitzgerald (2006) found string instruments to be a good choice for students with varying physical disabilities. Frisque, Niebur, and Humphreys (1994) found string teachers cited student interest as the primary reason for inclusion of students with special needs in orchestra classrooms.

An integrative review of literature conducted by Gooding and Yinger (2014) found 20 articles pertaining to the inclusion of students with special needs in string classrooms. Though several studies have been published that made a distinction between inclusion in instrumental and choral secondary music courses from elementary general music courses (Gfeller, Darrow, &
Hedden, 1990; Hahn, 2010; VanWeelden & Whipple, 2014a), very few have focused on differences that exist surrounding instructional differences between band and orchestra.

Gooding and Yinger (2014) conducted an integrative review of literature to determine what literature was available regarding the inclusion of students with special needs in string classes. Twenty articles met the criteria for inclusion in their study, and of those articles, 12 were considered “Expert Opinion” papers (Gooding & Yinger, 2014). Though expert opinion papers are valuable resources for classroom teachers, Gooding and Yinger suggested that the lack of empirical studies was potentially problematic because, “At times, experts disagree on educational practices” (p. 22). Hoffman (2011) found retention of string students with special needs to be low as the number of years spent in orchestra increased.
CHAPTER 3

METHOD

The purpose of this study was to examine string teachers’ perceptions of the inclusion of students with autism in classroom settings. Specifically, the aims of the study were to explore:

1. What are the current rates of inclusion of students with ASD in orchestra classrooms?
2. How successful do teachers feel they are when accommodating students with ASD in their ensembles?
3. From what sources are string teachers obtaining their information on how to best accommodate students with ASD?
4. Do years of experience or level of education have an effect on teacher perceptions of success?

Design

As previously stated, little existing descriptive research exists regarding the inclusion of students with exceptionalities, including autism, in the string classroom (Gooding and Yinger, 2014). I conducted a pilot study in 2015 in which string orchestra teachers ($n = 42$) were surveyed and asked to respond to open ended questions regarding inclusion of students with autism in classroom settings. Results of that study led me to refine the survey instrument and switch to a mixed-methods design (Creswell & Clark, 2011). The present study was an explanatory mixed-methods design, and was conducted in two phases based on previous research of a similar nature (Kieran, 2006). The quantitative phase was survey used to determine string
teachers’ perceptions of inclusion, and the second phase consisted of interviews of select participants conducted via email.

Participants

Participants for this study \((N = 51)\) were music educators who were currently teaching string orchestra in a classroom setting in the United States (Table 3.1) and who had at least one student with ASD enrolled in a classroom setting. Email addresses of potential participants were obtained from school websites and from state chapter presidents of the American String Teachers Association. All participants taught elementary school (K-5), middle school (6-8), high school (9-12), or some combination of the above (Table 3.2). There were no other stipulations to participate in this study.

Procedures

Survey Instrument. The survey instrument used for this study was designed based on survey instruments used in previous research regarding perceived effectiveness of inclusion in music classrooms (Gfeller, Darrow, & Hedden, 1990; VanWeelden & Whipple, 2014a). The survey instrument contained a 5-point Likert-type scale that ranged from Strongly Disagree (1) to Strongly Agree (5). Following the Likert-type portion of the survey, teachers were provided with an opportunity to clarify any answers in an open-ended question. Teachers were also asked to respond to a series of demographic questions. These questions were included to determine if any differences existed among teachers based on their level of education or years of experience.
Phase I

Qualtrics Online Survey Software & Insight Platform™ was used to create and distribute the survey instrument. The first question of the survey asked if the orchestra director if he/she is willing to participate in the study. The second question asked if the orchestra director currently has a student with autism in his or her classroom during the 2016-2017 school year. If the participant answered “No” to either question, the ended and displayed a “Thank You” message.

The National Association for Music Education (NAfME) is divided into six geographical regions (Eastern, North Central, Northwest, Southern, Southwestern, and Western). String educators acquainted with the researcher were consulted to identify school districts with a history of strong string programs in each region. A list of school districts was compiled and the researcher obtained string teacher email addresses from individual school websites.

After institutional review board approval (Appendix A), 281 orchestra directors representing the six different NAfME regions were invited to participate in the study by email (Appendix B). Additionally, email invitations were sent to 45 individuals listed as state chapter presidents of the American String Teachers Association (ASTA). The email invitations sent to the ASTA state presidents (Appendix C) included background information on the study, and a request to forward the invitation to participate to the K-12 teachers in their respective chapters.

Both versions of the invitation email included an overview of the study along with a link to the survey instrument. Once the orchestra director clicked on the survey link, a page explaining the data collection process appeared along with a box to click to indicating consent to participate. If the orchestra director chose not to participate, he or she was instructed to simply close the webpage. An opt-out link was included at the bottom of the invitation email to prevent future unwanted contact. Two-reminder emails were sent within the four-week data collection
period to the initially contacted directors and to the ASTA state chapter presidents. Due to the
survey being distributed via anonymous link, the exact response rate cannot be determined.

**Phase II**

A total of 65 string teachers responded to the invitation and consented to participate in
the study. After a review of the quantitative responses, teachers ($n = 31$) were contacted for
further questioning. Due to schedule conflicts and time-zone differences, follow-up interviews
were conducted via e-mail so that teachers could respond at their convenience. In each email,
teachers were asked to respond to a series of questions. Teachers were given two weeks to
respond. Each set of interview questions was tailored to each individual teacher, based on their
responses in Phase I, however all teachers were asked the following questions:

1. Please describe the student or students with ASD in your class.
2. Why do you think this student is being successfully integrated into your class?
3. What factors make you feel unsuccessful when including students with ASD in your
class?
4. What types of support do you wish you had to feel more successful when including
students with ASD in your class?
5. In what ways did your undergraduate program prepare you to teach students with special
   needs (including ASD)?
6. What do you think your undergraduate program could have done to better prepare you to
teach students with special needs?

After all responses were received, results from each participant were coded and reviewed
for commonalities and differences between Phase I and Phase II. Responses were also reviewed
for commonalities between participants. Finally, responses were sent to a second reviewer for analysis to determine reliability (Creswell, 2013). The second reviewer was a graduate string music education student with research experience and several years of classroom teaching experience. After the second reviewer completed independent coding, results were evaluated for reliability. Reliability was determined by dividing the number of agreements by agreements plus disagreements.
Table 3.1

Participant Demographics by State

<table>
<thead>
<tr>
<th>State</th>
<th># of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>12</td>
</tr>
<tr>
<td>Florida</td>
<td>8</td>
</tr>
<tr>
<td>Indiana</td>
<td>8</td>
</tr>
<tr>
<td>South Carolina</td>
<td>5</td>
</tr>
<tr>
<td>Arizona</td>
<td>4</td>
</tr>
<tr>
<td>Michigan</td>
<td>3</td>
</tr>
<tr>
<td>Texas</td>
<td>3</td>
</tr>
<tr>
<td>Maryland</td>
<td>2</td>
</tr>
<tr>
<td>Nevada</td>
<td>2</td>
</tr>
<tr>
<td>Illinois</td>
<td>1</td>
</tr>
<tr>
<td>North Carolina</td>
<td>1</td>
</tr>
<tr>
<td>Ohio</td>
<td>1</td>
</tr>
<tr>
<td>West Virginia</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>
Table 3.2

*Participant Breakdown by Grade-Levels Taught*

<table>
<thead>
<tr>
<th>Grade Levels Taught</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary (K-5)</td>
<td>0</td>
</tr>
<tr>
<td>Middle School (6-8)</td>
<td>22</td>
</tr>
<tr>
<td>High School (9-12)</td>
<td>16</td>
</tr>
<tr>
<td>Middle and High (6-12)</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>51</strong></td>
</tr>
</tbody>
</table>
CHAPTER 4

RESULTS

This study was designed to examine string teachers’ perceptions of inclusion of students with ASD in classroom settings. The aims of the study were to determine (1) the current rates of inclusion of students with ASD in string classrooms, (2) perceptions of teacher success regarding the inclusion of students with ASD in string classrooms, (3) where teachers are obtaining information on how to best accommodate students with ASD in string classrooms, and (4) if years of experience or level of education have any impact on perceptions of success. Participants (N = 51) were string teachers who were teaching at least one student with ASD during the time of the study.

Survey Findings

What are the current rates of inclusion of students with ASD in orchestra classrooms? A total of 80 string orchestra teachers responded to the first question of the survey, which asked teachers to indicate if they were currently teaching at least one student with ASD. Of those teachers, 51 (63.7%) responded that they were currently teaching at least one student with ASD in a classroom setting. This number is congruent with the estimated rates of students with ASD given by the CDC (Christensen et al, 2016). Teachers were also asked to how many students with ASD were currently enrolled in their orchestra programs. Thirty-six teachers responded that they were currently teaching between 1 and 4 students with ASD at the time of the study.
How successful do string teachers feel when accommodating students with ASD in their classrooms? Teachers were asked to respond to statements regarding their perceptions of success when including students with ASD in their strings classes using a 5-point Likert-type scale (1 = Strongly Disagree; 5 = Strongly Agree). The majority ($M = 3.98; SD = 0.86$) of respondents indicated Agree or Strongly Agree when asked if they felt successful when integrating students with ASD into their strings class (Table 4.1). Teachers also reported feeling comfortable when adapting their existing curriculum to accommodate students with ASD in their classes ($M = 3.94, SD = 0.75$). Furthermore, the majority ($M = 3.82; SD = 0.81$) of respondents answered that they felt comfortable modifying their existing curriculum to accommodate students with ASD.

![Figure 4.1](image)

Figure 4.1. “I feel that students are successfully integrated into my strings class.”
From what sources are string teachers obtaining information on how to best include students with ASD in their classrooms? To gain understanding regarding what sources string orchestra teachers were obtaining their information on how to accommodate students with ASD in classroom settings. The majority of teachers responded Disagree or Strongly Disagree when asked if they learned how to accommodate students with ASD by reading literature published by experts in the field (Figure 4.2). Similarly, the majority of teachers responded Disagree or Strongly Disagree when asked if they learned how to accommodate students with ASD attending professional development (Figure 4.3). Finally, the majority of teachers responded Agree, or Strongly Agree when asked if they learned how to accommodate students with ASD through collaboration with the special education teacher at their school (Figure 4.4).

Figure 4.2. “I learned to accommodate students by reading published literature.”
Do years of experience or level of education have any effect on teacher perceptions of success? With regard to years of teaching experience, most respondents were either in the
early stages of their career or the later stages of their career. Fifteen teachers (29.41%) had 25 or more years teaching orchestra and 21.6% \( (n = 11) \) had 1-5 years of experience. Most respondents \( (n = 34; 66.67\%) \) held a degree past the undergraduate level.

To address the final research question, two Kruskal-Wallis analyses were conducted to determine if there were significant differences between level of education and teacher perceptions of success, and years of experience and teacher perceptions of success. Results indicated that there was no significant difference, \( H(2, N = 51) = 3.02, p = 0.22, \) between level of education completed and perceived success of inclusion. Additionally, no significant differences were found between years taught and perceived success of inclusion, \( H(5, N = 51) = 4.84, p = 0.43. \)

**Interview Findings**

Eleven teachers consented to participate in this portion of the study. The researcher and an external reviewer coded interviews for reliability. Reliability calculated by dividing number agreements by number of agreements plus number of disagreements, multiplied 100, and was found to be 80.48\%, which is considered to be an acceptable level (Madsen & Madsen, 1998).

To further explore the research aims of this study, each participant was asked to respond to 10 open-ended questions. Each e-mail based interview was tailored to each participant based on responses during Phase I, however all participants were asked to respond to the following questions:

1. Please describe the student or students with ASD in your class.
2. Why do you think this student is being successfully integrated into your class?
3. What factors make you feel unsuccessful when including students with ASD in your class?
4. What types of supports do you wish you had in order to feel more successful when including students with ASD in your class?

5. In what ways did your undergraduate program prepare you to teach students with special needs (including ASD)?

6. What do you think your undergraduate program could have done to better prepare you to teach students with special needs?

Questions regarding student inclusion were coded in three broad categories: 1) behaviors, 2) verbal confirmation, and 3) non-verbal confirmation. Questions regarding teacher supports were coded using: 1) professional development, 2) collaboration, 3) materials. Questions regarding undergraduate preparation were coded using: 1) field placements, 2) student teaching/internship experiences, 3) methods courses. Full responses to questions can be found in Appendix E.

**Why do you think this student with ASD is being successfully integrated into your class?** All participants listed some type of behavioral confirmation in response to this question. One participant, however, did also indicate verbal confirmation from the student led the teacher to believe the student was being successfully included in the orchestra. The majority of teachers (n = 6) mentioned feeling successful because the students with ASD showed some degree of musical talent. Participant 2 reported feeling successful because, “A couple of my students with ASD have expressed how happy being a part of music makes them.” Participant 4 mentioned that the students with ASD worked hard during class and would “figure things out eventually.”

**What factors make you feel unsuccessful when including students with ASD in your class?** Four teachers felt that the students with ASD in their programs were doing well and did
not cause concerns at the time of the study. Six teachers responded feeling unsuccessful due to behavioral challenges during class such as the students becoming frustrated. Three teachers reported not feeling successful when they were unable to give the student(s) with ASD enough individual attention during class time.

Participant 2 described feeling conflicted regarding the inclusion of a student with ASD in the classroom:

“These students have a right to be in the orchestra but it is a tremendous amount of work, and the other students need to be taught how to respond in certain situations. I believe that while the special needs student may occasionally take away from the learning process [of the group], the experience for [typical] students to learn with special needs students is also valuable.”

**What types of supports do you wish you had in order to feel more successful when including students with ASD in your class?** The majority of participants \((n = 7)\) reported that more collaboration would help foster feelings of successful inclusion. Specifically, teachers mentioned the need for more information up front regarding the students with ASD in their classes. According to Participant 3:

“It has been my experience that ASD students are often placed on Individualized Educational Plans that have no basis in music training nor take music training into account. Often such meetings take place during my class so that teachers and parents may meet without the child present.”
Teachers also mentioned the need for more parental involvement. Four participants explicitly mentioned the need for more professional development. Participant 7 stated that, “No real support is offered in terms of professional development.”

In what ways did your undergraduate program prepare you to teach students with special needs (including ASD)? Six teachers mentioned some type of methods course in their undergraduate preparation. However, one participant did note that s/he was a student in 1977, and the only course available during that time was a child psychology course. When asked about undergraduate preparation and resources available, Participant 11 responded, “Not a darn thing.” Five participants conveyed not having any type of training or undergraduate preparation regarding in special education. Most (n = 7) participants mentioned additional methods courses in special education would have been beneficial at the undergraduate level.

Two teachers explicitly mentioned a need for more field placements during pre-service training preparation. “Participant 9 stated:

“I had no training for working with special needs students. My first experience many years ago [with a student with autism] was mind blowing! When he had an emotional break down during recess time. I had to physically hold him back from getting into a fight. It truly frightened me and left me feeling awful. His mother called me later that day to explain that the child did really ‘love’ me even though his words were hateful. I learned a lot that day.”

Participant 3 responded:
“I had a special learners course, but I didn't take it until graduate school when I did my education course work. Although the class definitely helped, I learned more about ASD students on the job than in the course.”
Table 4.1

*Means and Standard Deviations of Responses*

<table>
<thead>
<tr>
<th>Question</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>I feel that students with ASD are successfully integrated into my strings class.</td>
<td>3.98</td>
<td>0.86</td>
</tr>
<tr>
<td>I find students with ASD to be challenging to work with in my strings class.</td>
<td>3.09</td>
<td>1.15</td>
</tr>
<tr>
<td>The music education needs of students with ASD are being met in my orchestra class.</td>
<td>3.82</td>
<td>0.97</td>
</tr>
<tr>
<td>The music education needs of students with ASD would be better met if music were taught in special education classes instead of including them in the orchestra/large ensemble.</td>
<td>2.45</td>
<td>1.13</td>
</tr>
<tr>
<td>The music education of the typically developing students in my class is being hindered by having a student with ASD in the classroom.</td>
<td>2.09</td>
<td>1.08</td>
</tr>
<tr>
<td>My undergraduate music education program equipped me with strategies to help me teach students with ASD in my orchestra class.</td>
<td>2.19</td>
<td>1.09</td>
</tr>
<tr>
<td>Having students with ASD in my orchestra hinders the progress of their typically developing peers.</td>
<td>2.09</td>
<td>1.04</td>
</tr>
<tr>
<td>I am comfortable adapting my regular orchestra curriculum to meet the needs of students with ASD.</td>
<td>3.94</td>
<td>0.75</td>
</tr>
<tr>
<td>I am comfortable modifying my orchestra curriculum to meet the needs of students with ASD.</td>
<td>3.82</td>
<td>0.81</td>
</tr>
<tr>
<td>Students with ASD display the same level of musical achievement as their typically developing peers.</td>
<td>3.19</td>
<td>1.03</td>
</tr>
<tr>
<td>Students with ASD are graded on the same standards of musical achievement as their typically developing peers.</td>
<td>3.50</td>
<td>1.08</td>
</tr>
<tr>
<td>I learned how to accommodate students with ASD by reading literature published by experts in the field.</td>
<td>2.80</td>
<td>1.21</td>
</tr>
</tbody>
</table>
Table 4.1 Cont.

<table>
<thead>
<tr>
<th>Question</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>I learned how to accommodate students with ASD by attending</td>
<td>2.84</td>
<td>1.20</td>
</tr>
<tr>
<td>professional development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I collaborate with the special education teacher at my school in</td>
<td>3.68</td>
<td>1.10</td>
</tr>
<tr>
<td>order to best accommodate students with ASD in orchestra</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. N = 51*
CHAPTER 5
DISCUSSION

Purpose Statement

Very little research has been published concerning the topic of students with ASD in string classrooms. Due to the rising number of students diagnosed with ASD who are receiving services in the public schools, the purpose of this study was to examine the perceptions of string orchestra teachers regarding the inclusion of students with ASD in classroom settings. The specific research questions were:

1. What are the current rates of inclusion of students with ASD in orchestra classrooms?
2. How successful do teachers feel they are when accommodating students with ASD in their classrooms?
3. From what sources are string teachers obtaining their information on how to best accommodate students with ASD?
4. Do years of experience or level of education have any effect on teacher perceptions of success?

Answers to Research Questions and Implications of Findings

Question 1: What are the current rates of inclusion of students with ASD in orchestra classrooms? Results of the quantitative portion of the study revealed approximately 63.7% of participants were currently teaching at least one student with ASD in an inclusion setting. This percentage is not surprising given the reported number of children with ASD living in the United States (Christensen et al, 2016), and the number of students with ASD who
received services under IDEA in the 2014-15 school year (U.S. Department of Education, 2016). Most respondents reported having between 1 and 4 students with ASD in their orchestra class at the time of the study.

When asked to describe the students with ASD, participants generally had positive sentiments about the students and their behavior in the classroom. At the time of the study, Participant 2 had 10 students in her program with ASD, all of whom displayed a variety of behaviors and abilities. Participant 2 said that the students with ASD in her class either tended to excel in music, or seemed to struggle a bit. The experiences of this particular teacher are reflected in existing research (Darrow & Armstrong, 1999).

**Question 2: How successful do teachers feel they are when accommodating students with ASD in their classrooms?** The majority of teachers reported feeling successful when accommodating students with ASD. Teachers also reported feeling comfortable adapting their existing curriculum. These results were congruous with results of previous research (VanWeelden & Whipple, 2014a) conducted with regard to teacher perceptions of inclusion. Results of the present study align with views expressed by Bugaj (2014) that string educators may no longer be approaching inclusion in the ensemble setting with the same reservations found in the literature published during the early stages of inclusion (Darrow, 1999; Gfeller, Darrow, & Hedden, 1990).

Multiple interview participants reported feeling successful when including students with ASD in their classrooms because the students feel accepted by their typically developing peers. Another common theme across multiple interviews was open communication between parents, special education teachers, and the student, which experts (Adamek & Darrow, 2010; Hammel &
Hourigan, 2011; Jellison, 2015) agree is paramount for successful inclusion of students with ASD.

Although string teachers reported generally positive feelings toward inclusion, it is of particular interest that the majority of teachers also reported students with ASD to be a challenge to work with in the classroom. Common challenges reported in the interviews were students becoming easily frustrated and teachers not knowing how to redirect the student to avoid meltdowns. Another common theme reported was teachers not feeling that they could devote the adequate individualized instruction needed for certain students with ASD to succeed.

**Question 3: From what sources are string teachers obtaining information on how to best include students with ASD in their classrooms?** The majority of teachers reported learning strategies for inclusion through collaboration with special education teachers. These findings were also supported in the interviews, and reflect results of previously conducted studies (Scott, Jellison, Chappell, & Standridge, 2007). However, there was some discrepancy regarding professional development. Survey results revealed the majority of teachers ($M = 2.84; SD = 1.20$) did not learn how to accommodate students with ASD by attending professional development, yet many interview participants stated more professional development was needed.

Few teachers ($M = 2.80; SD = 1.21$) reported learning how to accommodate students with ASD by reading literature published by experts in the field. This could be due to the number of studies published expressly related to string instruction and ASD. Another possible explanation for this could be lack of access to available literature. It is of interest that none of the interview participants mentioned literature in any capacity.
Question 4: Do years of experience or level of education have any effect on teacher perceptions of success? No significant differences were found when years of teaching experience and perceptions of success were examined. Similarly, no significant differences were found when level of education completed and perceptions of success were examined. These findings support previous research which showed years of experience and education level had no contribution toward attitudes of inclusion (Gfeller, Darrow, & Hedden, 1990; Shelfo, 2007).

Although most undergraduate music education programs now offer some type of special education component (VanWeelden & Whipple, 2014b), interviews revealed that several music educators believed their undergraduate coursework did not adequately prepare them to teach students with ASD in inclusion settings. The majority of participants \((n = 30)\) in the current study possessed a graduate degree. One interview participant specifically mentioned not having training in special education until returning to school for graduate studies.

Recommendations for Future Research

The findings of the present study were aligned with results found in existing literature regarding music teacher perceptions of inclusion of students with special needs. String teachers responded with mostly positive inclinations toward the inclusion of students with ASD in classroom settings. When asked if the needs of the students with ASD would be better served in a self-contained setting Participant 9 responded, “NO! I want all students together. We need to teach our youth to be accepting of differences and to value what each of us can offer.”

The majority of string teachers \((M = 3.82; SD = 0.81)\) felt comfortable adapting existing curricula to meet the needs of students with ASD. Many teachers also reported that students
with ASD tended to be very successful in string classrooms. Further research could explore how students with ASD perceive their needs are being met in string classroom settings.

In several instances, teachers reported students with ASD surpassed their neuro-typical peers in musical ability. Further research might also explore instructional strategies used by string teachers who have had success in including students with ASD in classroom settings. Music education researchers could also attempt to determine which behavioral strategies used in music therapy settings and non-music special education settings could be used in instrumental classroom settings.

Although attempts were made to obtain a large sample from various regions of the United States, the total number of participants was relatively small and most participants represented the Southern region. Similar to other survey based research, it is also possible those who chose to participate have an interest or personal connection to the topic. Most participants held an advanced degree; it is also possible that those who chose to participate have an interest in music education research. Therefore, caution should be used when generalizing results of this study to all classroom orchestra teachers.

There is an adage, “To know one student with autism, is to know one student with autism.” Results of the present study support that the same is true for students with ASD with respect to musical ability. Although the current results show many string teachers have generally positive feelings toward inclusion of students with ASD in string classrooms, it is through further research that teachers may explore evidence based practices specific to string instruction.
APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL

Office of the Vice President for Research
Human Subjects Committee
Tallahassee, Florida 32306-2942
(850) 644-8573 • FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 09/27/2016

To: Annalen Chang [Redacted]

Address: [Redacted]

Dept.: MUSIC SCHOOL

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research

String Teacher's Perceptions of Inclusion of Students with Autism

The application that you submitted to this office in regard to the use of human subjects in the proposal referenced above has been reviewed by the Secretary, the Chair, and two members of the Human Subjects Committee. Your project is determined to be expedited per 45 CFR § 46.110(c) and has been approved by an expedited review process.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefits. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 09/26/2017 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the chairman of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to ensure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is IRB00000446.

Cc: Kasia Bugaj [Redacted], Advisor

IRSC No. 2016.28965
Dear String Teacher,

My name is Annalisa Chang and I am a Ph.D. candidate in Music Education at Florida State University. I am currently conducting a study regarding the inclusion of students with Autism Spectrum Disorder in string orchestra classrooms, and I would greatly appreciate your participation.

The link to the survey is included below, and the survey should no longer than 20 minutes to complete. The results of the survey are anonymous, and all identifying information will be stored in a secure database which is only accessible to me. There are no known risks associated with participation in this study. If you choose not to participate, simply disregard this email. Your contact information was obtained because you were listed on your school website as a string orchestra director, if you feel that you are receiving this message in error, please follow the link below to opt out of a follow up email.

If you have any questions, please feel free to contact me at [blank]

[Qualtrics link will be found here]

Further questions regarding data collection involved with this research can be directed to

Dr. Kasia Bugaj
Florida State University
Assistant Professor of String Education
Ph: [blank]

-or-

FSU Human Subjects Office
Ph: [blank]

Thank you!

Annalisa Chang
Ph.D Student- Music Education
Florida State University
Ph: [blank]

[opt out link will be inserted here]
APPENDIX C

ASTA STATE PRESIDENT E-MAIL INVITATION

Dear ASTA State Chapter President,

My name is Annalisa Chang and I am a Ph.D. candidate in Music Education at Florida State University. I am currently conducting a study regarding the inclusion of students with Autism Spectrum Disorder in string orchestra classrooms, and I would greatly appreciate your help in forwarding this link to the K-12 string teachers in your state. I am contacting you because you were listed on the ASTA website as a State Chapter President, if you feel that you have received this email in error, please disregard this message.

Dear String Teachers,

My name is Annalisa Chang and I am a Ph.D. candidate in Music Education at Florida State University. I am currently conducting research regarding the inclusion of students with Autism Spectrum Disorder in string orchestra classrooms as part of my dissertation. Research in this field is relatively new and the literature is limited, so your participation in this study would be greatly appreciated.

The link to the survey is included below, and the survey should take no longer than 20 minutes to complete. The results of the survey are anonymous, and all identifying information will be stored in a secure database which is only accessible to me. There are no known risks associated with participation in this study. If you choose not to participate, simply disregard this email. If you would like to opt out of future emails, please follow the link at the conclusion of this message.

If you have any questions, please feel free to contact me at [redacted]

Follow this link to the Survey:

Further questions regarding data collection involved with this research can be directed to:

Dr. Kasia Bugaj
Florida State University
Assistant Professor of String Education
Ph: [redacted]
-or-
FSU Human Subjects Office
Ph: [redacted]

Thank you!

Annalisa Chang
PhD Student- Music Education
Florida State University

Follow the link to opt out of future emails.
APPENDIX D
SURVEY INSTRUMENT

FLORIDA STATE UNIVERSITY

Default Question Block

My name is Annalisa Chang and I am a Ph.D. candidate in Music Education at Florida State University. I am currently conducting a study examining the inclusion of students with Autism Spectrum Disorder in string orchestra classrooms.

The survey will consist of multiple choice and free response questions, and should take no longer than 20 minutes to complete. The results of the survey are anonymous, and all identifying information will be stored in a secure database which is only accessible to me. There are no known risks associated with participation in this study. If you choose not to participate, simply disregard this email. Your contact information was obtained because you are listed as a K-12 school orchestra teacher on your school website and/or member of the American String Teachers’ Association. If you wish to stop your participation at any time, simply exit the survey.

If you have any questions, please feel free to contact me at [redacted]. Further questions regarding data collection involved with this research can be directed to:

Dr. Kasia Bugaj
Florida State University
Assistant Professor of String Education
Ph: [redacted]

FSU Human Subjects Office

Thank you!

Annalisa Chang
PhD Student: Music Education
Florida State University

☐ Yes, I consent to continuing with this survey
☐ No, I do not consent to participating and would not like to continue

Are you currently a string orchestra teacher?

☐ Yes
☐ No

Do you currently teach a student or students with autism spectrum disorder?

For the purpose of this study, a student with autism spectrum disorder has been diagnosed by a health care professional.

- Yes
- No

In what education setting do you teach students with Autism Spectrum Disorder?

- Inclusion of student(s) in orchestra/large ensemble among typically developing peers
- Self-contained setting (student is among other students with special needs)
- Private lesson setting

Please respond to the statements:

1. I feel that students with ASD are successfully integrated into my strings class.
2. I find students with ASD to be challenging to work with in my strings class.
3. The music education needs of students with ASD are being met in my orchestra class.
4. The music education needs of students with ASD would be better met if music were taught in special education classes instead of including them in the orchestra/large ensemble.
5. The music education of the typically developing students in my class is being hindered by having a student with ASD in the classroom.
6. My undergraduate music education program equipped with strategies to help me teach students with ASD in my orchestra class.
7. Having students with ASD in my orchestra hinders the progress of their typically developing peers.
8. I am comfortable adapting my regular orchestra curriculum to meet the needs of students with ASD.
9. I am comfortable modifying my orchestra curriculum to meet the needs of students with ASD.
10. Students with ASD display the same level of musical achievement as their typically developing peers.
11. Students with ASD are graded on the same standards of musical achievement as their typically developing peers.
12. I learned how to accommodate students with ASD by reading literature published by experts in the field
13. I learned how to accommodate students with ASD by attending professional development
14. I collaborate with the special education teacher at my school in order to best accommodate students with ASD in orchestra
If you would like to clarify any responses to a question on this survey, please do so here. If you would not like to clarify a response to any question, please type, "None".

How many students with autism spectrum disorder are part of your orchestra program?
- 1
- 1-4
- 5+

For how many total years (to your knowledge) have students with autism been members of the orchestra program where you currently teach?
- Less than 1
- 1-5
- 6-10
- 10+

What grade level(s) do you currently teach?
- Elementary (K-5)
- Middle School (6-8)
- High School (9-12)
- Middle and High (6-12)
- Other: (Please specify)

How long have you been teaching orchestra (full or part-time)?
- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
2/19/2017

21-25 years
25+ years

How many students are in your school? (If you are an itinerant teacher, please answer based on the school where you spend the majority of your time.)

1-99
100-499
500-1,000
1,000-1,999
2,000-3,000
3,000+

In what community setting is your school located?

Rural
Urban
Suburban

What is your perception of the number of students at your school receiving free/reduced priced lunch?

none or almost none
less than half
about half
more than half
almost all or all

In addition to orchestra, do you currently teach in any of the following areas during the school day? (Mark all that apply)

Elementary General
Choral
Band
Secondary General Music/Music Appreciation

Music Theory/Music History

☐ Piano
☐ Guitar
☐ I do not teach in an area outside of orchestra
☐ Other (please explain)

How many students are in your orchestra program this school year? (If you teach at more than one school, you may report a total number)

☐ Less than 20
☐ 20-40
☐ 41-60
☐ 61-80
☐ 81-100
☐ 100+

What is the highest level of education you have completed?

☐ Bachelors Degree
☐ Masters Degree
☐ Doctoral Degree

In what state do you currently teach?

Based on some responses above, further contact may be beneficial to the study. If you consent to being contacted further, follow up questions will be sent to you via email. There are no known risks associated with further participation in this study. All identifying information including your name and email address will be kept confidential by me, and will not be used in any publications or public presentation of this research.

Would you like to be contacted for further participation in this study? If so, please enter your name and email address in the field below. If you would not like to participate further, please type the word "No" below.

APPENDIX E

RESPONSES TO INTERVIEW QUESTIONS

Please describe the student or students with ASD who are currently in your orchestra class.

P1: 12-year-old female, second year violin student. “She is always attentive, focused, eager to learn, nervous about making mistakes. She cries easily when she feels she-either – does not understand, or if [the] teacher corrects her playing.”

P2: “I have 10 students in my program with some kind of ASD. 3 are in 8th grade, 3 in 7th grade, and 4 in 6th grade. Two of the 8th graders are incredibly strong players. One even made All State Orchestra. Two of the 7th graders and two of the 6th graders are also quite strong musicians. However, the other students with ASD struggle quite a lot musically.”

P3: “They generally follow directions very well. One made the district honor band on percussion last year, one cellist will likely make the honors orchestra next year (she has perfect pitch and also plays piano in the jazz band).”

P4: “Student is in the 12th grade and has been in the program for 8 years. I have only had this student for the last two years. Student gets very frustrated when he cannot play the music. He vocally expresses his opinion that he hates the music and he cannot play it. He doesn’t like change.”

P5: “The student is in their second year in the program. [He] is 10 years old and in the 5th grade. The student will talk to himself, [hide] under tables, play entirely different pieces from the rest of the class and refuses to participate.”
P6: “We have one 6th grade student who has been in the program for 6 months. He has a tendency to get easily frustrated if he cannot do something he [thinks] he can do perfectly the first time. He had major meltdowns and was very frustrated in the early stages of learning an instrument. Recently he has been more in control of his emotions and frustrations, but also not progressing as [quickly] on his instrument.

P7: “The student that I have is in 10th grade and has been playing violin for 5 years. This student is very talented, has perfect pitch and [has] an awesome eye for theory. Her struggle is that her technical abilities are behind her mental ones, and as a perfectionist she is prone to have fits or outbursts if she makes a mistake or does not play to her potential.”

P8: “7th grade student that has been in the program for 2 years. [Displays] obsessive behaviors in wanting to play everything perfectly. He is principal cello in his extracurricular orchestra.”

P9: “Cellist, senior, 18 years old. Three years in my orchestra program. This young man is a wonderful young man who loves playing cello. Most students are not aware [that he has autism]. Violinist, freshman, 16 years old. This student has a great sense of humor and works well in the orchestra setting. He frequently wants attention during class time. He feels comfortable speaking out when he should not. Lucky for me, he quickly stops talking when I give him a quick response. He craves attention.”

P10: “8th grade boy. He exhibits rigid thinking, and gets stuck on things. He tends whine and pout when things don’t go his way. Started orchestra in 5th grade. 9th grade boy, he is verbal but has very limited interactions. Lots of movements associated with kids with ASD.”
P11: “I currently have one [student with ASD] in the 7th grade orchestra. She participates well but occasionally plays out of turn or says something inappropriate.”

Why do you think this student (or students) with ASD are being successfully integrated into your class?

P1: “Student has a dedicated aide in regular classroom. Student has a high degree of intrinsic motivation. She loves music. She likes me. She likes her classmates. Classmates are supportive. Class size is 10 students.”

P2: “A couple of my students with ASD have expressed how happy being a part of music makes them, so it is something that they put effort in to.”

P3: “They were all musical kids before they arrived, and we [work] hard at making the environment welcoming and engaging for everyone. They tend to do very well in the program.”

P4: “He is very smart and can figure things out eventually, [it] just takes a little longer. There is a lot of complaining before we get to the final product.”

P5: “I have started to identify students that may have IEP's in the first week of school and check in with the school, student, and the parents. I make a point of talking to them about my expectations and what works best for them. Several students’ parents like to have weekly updates about behavior and their participation.”

P6: “We don’t treat students differently. Everybody is on a level playing field and we teach to all students.”
P7: “I think because she is very talented and is in a leveled class with other talented students, she does well. Had we placed her in a lower achieving class, I do not think she would achieve as much as she does now.”

P8: “Music is different than “paper/pencil” classes.”

P9: “Both of these students have a great passion for orchestra. They are successfully being integrated into my class because they demonstrate a huge desire to be in the program. I believe the biggest part of their positive integration into the program is because, I, as [the] teacher, set the example of appreciating all in the room.”

P10: “8th grade boy- appears neuro-typical in many ways, and is able to function fairly appropriately. He has a good deal of musical talent, and strong parental support. 9th grade boy has strong parental support at home. Private lessons on viola help him learn class music. He speaks very little, [but] he listens well and follows directions.”

P11: She is playing better than 2/3 of the other violinists [in the class].

**What factors make you feel unsuccessful when including students with ASD in your class?**

P1: “There are no concerns at this time with this particular student.”

P2: “When the students with ASD become frustrated, it can be difficult to calm them down and to get them focused on what they can do.”

P3: “Kids with ASD have done well in our program.”

P5: “When the whole class is rowdy I am often unable to check in individually with students with ASD as I need to spend more time on classroom management.”
P6: “I wish I could keep the students with ASD in the classroom, and keep them growing on their instruments. Most are very ‘stuck’ in their ways so fixing issues that might make them play correctly.”

P7: “I educate myself to work to better understand and facilitate my students with exceptionalities, though sometimes I worry that my knowledge is lacking, which would potentially create holes for my students in their abilities, or prevent them from working to their potential.”

P8: “Keeping the pace fast enough that he doesn’t become frustrated, but slow enough for the other students.”

P9: “Both students take extra time in and out of the classroom. They both need me to give them a bit of extra attention in the classroom. They will ask questions and disrupt the flow if I have not given them a moment of time. I fill out paper work on their behavior and progress on a regular basis and attend IEP meetings. All take extra time and thought.”

P10: “I have had some students with more challenging behaviors, I did not feel successful as a teacher with a full class in giving them the support they needed to learn the instrument. The lack of following directions kept this student from progressing.”

What types of support do you wish you had to feel more successful when including students with ASD in your class?

P1: “I can seek and quickly obtain insight from the autism wing professionals in my school. We have Pre-K through 5th grade students with varying levels of ASD. This is a new program that started in this school this school year. My student’s dedicated aide
often provides insight and student concerns to me. I do wish I had additional instructional time. More professional development is always helpful.”

**P2:** “More parental involvement would help the students who struggle greatly, though I know that many of their parents are just trying to get their children to pass academic classes.”

**P3:** “I may be in a special situation, as my ASD kids mostly all function at a very high level. I don't need additional support.”

**P4:** “More help from music educators on how they deal with these students, and strategies to help them in the classroom so they can learn to the best of their ability without getting frustrated.”

**P5:** “I would like to [have] been given more information about specific individual students before class begins. I would also like to have a meeting with the parents to hear what works best for their child at home.”

**P6:** “In a perfect world, [I] could have a music aide for the student who could help them in our classes but that would be very rare. Otherwise having help from parents is fantastic, as well as insights from the Special Education teachers.

**P7:** “I would definitely welcome more information, especially for students of a high IQ and ASD. No real support is offered in terms of professional development.”

**P8:** “More Support or access to a private lesson teacher that could come to the school and work in smaller groups with the ASD students 1 day a week for those who are unable to take lessons outside of school.”

**P9:** “I have always enjoyed great parental support. At my current school, I have great professional development and support from the special education teachers. My only
frustration was at the middle school with too many special needs, [few] at grade level students, and over 40 kids in a room. Too many plates spinning at the circus!! So, the answer . . . reasonable expectations for teachers.”

**P10:** “Parental involvement is the number 1 factor for me that has determined student success. Learning the instruments requires practice outside of school. For most students with ASD- they need the support of the parent to set up the structures to create a habit of practicing.”

**P11:** “District provides a full-time aide in all her classes. Aide only acts if she is having a bad day. Professional development would be helpful but the district has not done this.”
REFERENCES


60


BIOGRAPHICAL SKETCH

Name: Annalisa Chie Chang

Birthplace: Charlotte, North Carolina

Higher Education:
University of North Carolina at Greensboro
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Major: Music Education
Degree: Bachelor of Music (2009)

University of North Carolina at Greensboro
Greensboro, North Carolina
Major: Music Education
Degree: Master of Music (2013)

Florida State University
Tallahassee, Florida
Major: Music Education (String Education)
Degree: Doctor of Philosophy (2017)

Professional Experience:
Leon High School
Director of Orchestras (9-12)
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Allen Middle School
Chorus and General Music Teacher (6-8)
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Guilford County Schools
Itinerant Elementary General Music Teacher (K-5)
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Cumberland County Schools
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