Approaches to Teaching Music Counting to Piano Students with Autism Spectrum Disorder

by

Sunghun Kim

Bachelor of Arts
Oklahoma State University, 2014

Master of Music
Baylor University, 2017

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Accepted by:

Scott Price, Major Professor

Sara M. Ernst, Committee Member

Phillip Bush, Committee Member

Peisheng Xu, Committee Member

Tracey L. Weldon, Interim Vice Provost and Dean of the Graduate School

DEDICATION

To my wife, whose unconditional sacrifice and devotion makes me who I am now. She always believes in me and respects my decisions with her generous love and prayer in Jesus Christ.

To my parents, who always give a boundless love and belief in me and support my studies in music with their continued commitment.

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ABSTRACT

The purpose of this study was to interview five internationally and nationally recognized professionals currently teaching piano to students with autism spectrum disorder (ASD), and to explore their approaches to teaching music counting to students with ASD. The interview questionnaire contained 5 sections. Sections 1, 2, and 3 focused on teacher experience and training, studio demographics, and educational curriculum. Sections 4 and 5 of the questionnaire focused on pedagogical practices in teaching music counting to piano students with autism spectrum disorder, including questions regarding pedagogical approaches in teaching meter, rhythm, and steady pulse. Section 6 emphasized pedagogical practices to teach symbolic notation to students with autism spectrum disorder. This study includes transcripts of interviews, and a summary of teaching methods to identify best practices in teaching music counting to students with ASD.

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CHAPTER 1

INTRODUCTION

"Autism spectrum disorder (hereafter referred to as ASD) is a developmental disability that can cause significant social, communication and behavioral challenges."[1] The American Psychiatric Association's Diagnostic and Statistical Manual (2013), Fifth Edition (DSM-5) states that Autism Spectrum Disorder (ASD) is defined by persistent deficits in social communication with other people, deficits in nonverbal communicative and repetitive behaviors used in social interaction, and deficits in developing, maintaining, and understanding relationships.[2] According to the National Institute of Mental Health (NIMH), "Although autism can be diagnosed at any age, it is said to be a developmental disorder because symptoms generally appear in the first two years of life."[3]

Prevalence

The rate of diagnosis in children with ASD has increased over the last 30 years. It remained fairly stable throughout the 1980s with c. 1 in 5,000 American

[1] Centers for Disease Control and Prevention, "What is Autism Spectrum Disorder?," accessed January 13, 2020, https://www.cdc.gov/ncbddd/autism/data.html.

[2] American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-V*, 5th ed. (Arlington, VA: American Psychiatric Association, 2013), 50.

[3] National Institute of Mental Health, "Autism Spectrum Disorder," accessed January 14, 2020, https://www.nimh.nih.gov/health/topics/autism-spectrum-disorders-asd/index.shtml.

children being diagnosed with autism.[4] However, this rate increased in children born in the 1990s. Based on data collection and analysis, c. 1 out of 150 children in 2000, 1 in 125 children in 2004, 1 in 110 children in 2006, 1 in 88 children in 2008, 1 in 68 children in 2010, 1 in 69 children in 2012, and 1 in 59 in 2014 were diagnosed. In 2016, rates of diagnosis were estimated at approximately 1 in 54 births in the United States.[5] CDC in 2020 reported that autism spectrum disorder affects 1 in 34 boys and 1 in 144 girls.[6] These rates yield a gender ratio of approximately 4.24 percent boys for every girl.[7]

According to the South Carolina Autism and Developmental Disabilities Monitoring Program in 2008, total prevalence of ASD was approximately 1 in 90 children in South Carolina, and the prevalence of boys was 1 in 55 and girls was 1 in 286. The gender ratio was approximately five boys for every girl.[8]

Criteria of Autism Spectrum Disorder

"The Diagnostic and Statistical Manual of Mental Disorders (DSM) published by the American Psychiatric Association (APA) is the handbook used by health care professionals in the United States and much of the world as the authoritative guide on the diagnosis of mental disorders. The DSM contains descriptions, symptoms, and

[4] CDC, "Data &Statistics on Autism Spectrum Disorder," accessed January 14, 2020, https://www.cdc.gov/ncbddd/autism/data.html.

[5] Ibid.

[6] Autism Speaks, "Autism Facts and Figures," accessed January 20, 2020, https://www.autismspeaks.org/autism-facts-and-figures.

[7] CDC, "Data &Statistics on Autism Spectrum Disorder."

[8] CDC, "The South Carolina Autism and Developmental Disabilities Monitoring Program (SC-ADDM)," accessed January 21, 2020, https://www.cdc.gov/ncbddd/autism/states/ADDM-South-Carolina-fact-sheet.pdf.

other criteria for diagnosing mental disorders."[9] The DSM-IV-TR (2000) includes five subtypes of Autism Spectrum Disorders:

- Autistic disorder (term used in DSM-IV-TR)
- Asperger's disorder (term used in DSM-IV-TR)
- Rett's disorder
- Childhood Disintegrative Disorder
- Pervasive Developmental Disorder-NOS-Not Otherwise Specified (PDD-NOS)

Autistic Disorder defines individuals who are most similar to the children Kanner described in 1943.[10] For autistic disorder, there are synonyms, such as *autism, early infantile autism, childhood autism,* and *Kannerian autism.* To be diagnosed with autism, an individual must present abnormal behavior in the areas of communication, socialization, and interests and activities.[11]

Asperger's Disorder sometimes referred to as Asperger's Syndrome or simply Asperger's. According to the DSM-IV-TR, this condition is shown by typical language development without any delays or communication impairments.[12] However, parents of children with Asperger's Syndrome might describe delays in the

[9] APA, "What is *DSM* and why is it important?," accessed January 21, 2020, https://www.psychiatry.org/psychiatrists/practice/dsm/feedback-and-questions/frequently-asked-questions.

[10] Dr. Leo Kanner was the first person to describe the term "autism" by categorizing clinical descriptions of a social and emotional disorder. Adam Feinstein, *A History of Autism: Conversations with the Pioneers*, (Malden, MA: Wiley-Blackwell, 2010), 5.

[11] L. Juane Heflin and Donna Fiorino Alaimo, *Students with Autism Spectrum Disorder:Effective Instructional Practices,* (New Jersey, Pearson Education, Inc., 2007), 9-10.

[12] American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR,* 5th ed. (Washington, DC: American Psychiatric Association, 2000), 74.

appearance of language and language skills in adulthood that are not commensurate with age.[13]

Rett's disorder "is typically associated with Severe or Profound Mental Retardation. There are no specific laboratory findings associated with the disorder and it is characterized by a severe impairment in expressive and receptive language development."[14] "This disorder has been included in the DSM-IV-TR as a type of Pervasive Developmental Disorder (PDD) because of behavioral similarities with autism. This disorder primarily affects females, as the genetic defect proves fatal in males."[15]

Childhood Disintegrative Disorder (CDD) was first described by Theodor Heller in 1908 and may also be known as Heller's syndrome.[16] "The essential feature of Childhood Disintegrative Disorder (CDD) is a marked regression in multiple areas of functioning following a period of at least 2 years of apparently normal development. Apparently normal development is reflected in age-appropriate verbal and nonverbal communication, social relationships, play, and adaptive behavior."[17]

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[13] Patricia Howlin, "Outcome in High-Functioning Adults with Autism with and without Early Language Delays: Implication for the Differentiation between Autism and Asperger Syndrome," *Journal of Autism & Developmental Disorders* 33, no. 1 (March 2003): 3-4.

[14] APA, 76.

[15] L. Juane Heflin and Donna Fiorino Alaimo, 15.

[16] Theodor Heller described the core symptoms of autism – language deficits, social withdrawal and stereotyped behaviors. Emily Singer, "Historic Diagnosis," Spectrum, accessed February 23, 2020, https://www.spectrumnews.org/opinion/historic-diagnosis/.

[17] APA, 77.

Pervasive Developmental Disorder-NOS-Not Otherwise Specified (PDD-NOS) "is referred to as atypical autism and is the diagnosis of choice if uncharacteristic or mild symptoms of the other subtypes are present."[18] Characteristics of Pervasive Developmental Disorder (PDD) are related to impairment in either verbal or nonverbal communication,[19] and "they must still occur in the form of disordered communication, socialization, or interests and activities. However, the entire constellation does not need to be present."[20]

New changes in the DSM-5 (2013) were made to the criteria needed for a diagnosis of autism spectrum disorder. According to the DSM-IV-TR, the domains for autistic disorder contained deficiencies in communication, social interaction, and restricted interests/repetitive behaviors.[21] "In the DSM-5, the communication and social interaction domains are combined into one, social/communication deficits. Additionally, a delay in language development is no longer a requirement for a diagnosis of ASD."[22]

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) categorized autism spectrum disorder into two diagnostic criteria:[23]

1) Persistent deficits in social communication and interaction across a variety of contexts, such as deficits in social-emotional reciprocity, deficits in nonverbal

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[18] Ibid., 16.

[19] APA, 84.

[20] L. Juane Heflin and Donna Fiorino Alaimo, 16.

[21] APA, 70-71.

[22] Chantal Sicile-Kira, *Autism Spectrum Disorder: The Complete Guide to Understanding Autism,* (New York, Penguin Group (USA) LLC.), 29.

[23] American Psychiatric Association, *Diagnostic and Statistical Manual of Mental Disorders: DSM-5.* 5th ed., 2013, 52.

communicative behaviors, and/or deficits in developing, maintaining and understanding relationships.

2) Restricted, repetitive patterns of behavior, interests or activities as manifested in at least two of the following:

- Stereotyped or repetitive motor movements, use of objects, or speech.
- Insistence on sameness, inflexibility in adherence to routines, or ritualized patterns of verbal or nonverbal behavior.
- Highly restricted, fixated interests that are abnormal in intensity or focus.
- Hyper- or hypo-reactivity to sensory input or unusual interest in sensory aspects of the environment.

Severity Levels for Autism Spectrum Disorder (ASD)[24]

The DSM-5 utilizes similar diagnostic criteria for identifying ASD, but only describes "Severity of Autism Spectrum Disorder" in the three levels:

- Social Communication

- Level 1: Without support, deficits in social communication cause noticeable impairments.
- Level 2: Marked deficits in verbal and nonverbal social communication skills, social impairment apparent with supports, limited initiation of social interactions, and reduced or abnormal response to others.
- Level 3: Severe deficits in verbal and nonverbal social communication bringing about severe impairments in functioning, very limited initiation of social interactions and minimal response to others.

- Restricted and Repetitive Behaviors

[24] Ibid.

- Level 1: Inflexibility of behavior causes significant interference with functioning in one or more contexts. Diffculty switching between activities.
- Level 2: Inflexibility of behavior, difficulty coping with change, or other restrictions. Repetitive/restricted behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in various contexts.
- Level 3: Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behaviors markedly interferes with functioning in all areas. Distress/difficulty changing focus or action.

Music and Autism Spectrum Disorder

Music has been widely utilized as a treatment for individuals with autism spectrum disorder and may be used as an intervention to reduce restrictive and repetitive behaviors.[25] For instance, music may provide benefits to students with ASD in stimulating senses and focusing attention towards socially appropriate behaviors.[26] Through playing and improvising music, students with ASD may release their energies and express inner thoughts. Thus, music lessons may give them structural regularity, and it is feasible to develop their repertoire of functioning.[27] "Music in its many aspects is an eminently flexible, adaptable means which can reach an individual at any level of intelligence or education."[28]

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[25] Kate Simpson and Deb Keen, "Teaching Young Children with Autism Graphic Symbols Embedded within an Interactive Song," *Journal of Developmental and Physical Disabilities* 22, no.2 (November 2010): 165.

[26] Ibid., 166.

[27] Randall Faber, "Teaching Beginners with Special Needs," Faber Piano Adventures, accessed February 13, 2020, https://pianoadventures.com/blog/2016/07/25/teaching-beginners-with-special-needs/.

Music Programs

In the piano pedagogy field, there are currently five internationally and nationally recognized individuals who have pioneered teaching approaches and who founded and maintain music programs for students with ASD. Each of these individuals is an active teacher, author, clinician, and workshop presenter.

Dr. Jennie Band is a board-certified music therapist and licensed professional counselor/supervisor, serving as a Fellow in the Association for Music and Imagery (FAMI). She is also retired from an active practice in Columbia, SC. To promote wellness of both children and adults with special needs, Dr. Band's therapy services address autism, social communication and behaviors, independence in self-care, and sensory processing in a wide variety of educational settings. Through piano study and creative music activities, her students with ASD have improved the development of fine motor, sensory motor, and visual motor skills that they need to function in their community environments, such as the Carolina LifeSong Initiative at the University of South Carolina.[29]

Dr. Beth Bauer is a guest lecturer in piano pedagogy, academic advisor for the pedagogy degree, and internship director at Wheaton College Conservatory of Music in Wheaton, IL. Dr. Bauer has over 20 years experience working with students with autism spectrum disorder and Down Syndrome. She received a Doctor of Music Education from the Indiana University's Jacobs School of Music and a Master of Music from Northern Illinois University, as well as a Bachelor of Arts in Music from

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[28] Juliette Alvin, Music Therapy for the Autistic Child, 2nd ed. (New York: Oxford University Press, 1991): 1.

[29] SCCA Pre-Conference and Post-Conference Workshops for 2009, accessed February 7, 2020, https://www.sccounselor.org/uploads/PDFs/SCCA-Pre&PostConf-Workshops_12-08.pdf.

the Wheaton College Conservatory of Music. Her work with students has been featured in the Chicago Tribune Newspaper, *The Piano Magazine: Clavier Companion, Piano Pedagogy Forum*, and on NBC Nightly News with Brian Williams.[30]

Her students have participated in National Guild Competitions, national keyboard conferences, and music programs at schools and churches. Her music program, Beethoven's Buddies, encourages the development of strong gross and fine motor skills, self-esteem, language development, and social interaction. Dr. Bauer is co-chair of the committee on special needs for the National Conference on Keyboard Pedagogy (NCKP) and is co-author of the Inclusive Piano Teaching Blog, which is an online publication of The Frances Clark Center for Keyboard Pedagogy.[31] Her articles related to students with special needs have been published in *The Piano Magazine: Clavier Companion* and *Piano Pedagogy Forum*. Dr. Bauer has presented multiple times at the Music Teachers National Association (MTNA) national conference and the National Conference on Keyboard Pedagogy (NCKP). She is the founder and instructor of the Beethoven's Buddies program designed to serve students with all kinds of special needs, such as autism, fragile X, ADD/ADHD, Down Syndrome, vision impairment, auditory impairment, visual processing disorder, and dyslexia. This innovative music program facilitates cognitive and emotional growth for

[30] Wheaton College, "Faculty Profiles," accessed February 7, 2020, https://www.wheaton.edu/academics/faculty/beth-bauer/.

[31] Wheaton College, "Beethoven's Buddies (Special Needs)," accessed February 7, 2020, https://www.wheaton.edu/community/csa/lessons/beethovens-buddies-special-needs/.

students with developmental delays at the Community School of the Arts, Wheaton College.[32]

Dr. Melissa Martiros is an assistant professor and director of music at Anna Maria College in Paxton, MA. She earned a Doctor of Musical Arts in piano performance and pedagogy at the University of Wisconsin-Madison, a Doctor of Education in higher education leadership and policy at Vanderbilt University, a Master of Science in special education at the University of Wisconsin-Madison, a Master of Music in piano performance at Bowling Green State University (OH), and a Bachelor of Music in piano performance at Westfield State University. Dr. Martiros is the founder and director of the OpporTUNEity music program, "a nationally recognized, award-winning engagement initiative for underserved youth and children with special needs."[33] This music program was established in 2013 while she was a professor at Martin Methodist College in Pulaski, Tennessee. Moreover, OpporTUNEity stresses "how to provide an ethical and meaningful undergraduate experience to college music students who likely would not have been admitted if the institution had more appropriate admission standards, how to begin inserting music back into a region deprived of art so that the students we recruit in the future are trained in a way that sets them up for success in college and, in turn, strengthens our undergraduate program, and how to help Pulaski's efforts to move beyond its past and

[32] Beth Bauer, "Beethoven's Buddies," accessed February 8, 2020, http://www.bethbauerpiano.com/beethoven-s-buddies.html.

[33] Melissa Martiros: OpporTUNEity, "The Story of OpporTUNEity," accessed February 8, 2020, https://opportuneitymusic.org/home/2019/10/6/about-opportuneity-music-connections.

begin addressing the history of racial tension and segregation in the community by advocating for inclusion in the arts."[34]

As an active clinician, Dr. Martiros has recently conducted workshops at the International Society of Music Education World Conference (ISME), the Canadian Federation of Music Educators Biennial Convention (CFMTA), the College Music Society National Conference (CMS), the Music Teacher National Association (MTNA) national conference, the National Conference on Keyboard Pedagogy (NCKP), the Australasian Pedagogy Conference (AAPC), and the Gulf South Summit on Service-Learning and Civic Engagement through Higher Education. Additionally, she serves as co-author for the Inclusive Piano Teaching Blog sponsored by the Frances Clark Center for Keyboard Pedagogy. Her articles related to students with autism spectrum disorder have been published in the *American Music Teacher* magazine, *Piano Pedagogy Forum,* and *The Piano Magazine: Clavier Companion*.[35]

Dr. Derek Kealii Polischuk is a professor of piano and director of piano pedagogy at the Michigan State University College of Music. He holds a Doctor of Music Arts in piano performance from the University of Southern California Thornton School of Music. "He is the founder and director of 'Celebrating the Spectrum: A Festival of Music and Life,' an annual week-long festival held in July. Celebrating the Spectrum is held at the College of Music on the Michigan State University campus. The festival is designed to give qualified advanced pre-college

[34] Ibid.

[35] Anna Maria College, "Melissa Martiros," accessed February 8, 2020, https://www.annamaria.edu/faculty-profiles/liberal-arts-sciences-profiles/89-faculty-profile-melissa-martiros.

students on the Autism Spectrum a preview of a life in music."[36] Master classes are offered for students who attend the Celebrating the Spectrum event and are conducted by college of music piano faculty professors, Deborah Moriarty and Derek Kealii Polischuk. During the festival, the students have opportunities to give two public performances of both solo and four-hand repertoire.

Dr. Polischuk has presented at the Music Teachers National Association (MTNA) national conference, the National Group Piano and Pedagogy Forum, the Multidisciplinary Research in Music Pedagogy Conference, the National Conference on Keyboard Pedagogy (NCKP), the DOCTRID Conference in Ireland, the ABLE Assembly at Berklee College, and at universities and conservatories across China. He also serves on NCKP's committee for teaching students with special needs and the advisory board of the Orange County School of the Arts pianist program. At Michigan State University, Dr. Polischuk has been the recipient of the Curricular Service-Learning/Civic Engagement Award and the Teacher-Scholar Award. His articles have been published in *The Piano Magazine: Clavier Companion,* and the *American Music Teacher* magazine.[37]

Dr. Scott Price currently serves as professor of piano and piano pedagogy, and coordinator of piano pedagogy at the University of South Carolina School of Music. He earned a Doctor of Musical Arts in piano performance and pedagogy at University

[36] Michigan State University College of Music, "Celebrating the Spectrum: A Festival of Music and Life," accessed February 10, 2020, http://www.music.msu.edu/spectrum.

[37] Michigan State University College of Music, "Faculty Profile: Derek Polischuk," accessed February 10, 2020, http://www.music.msu.edu/faculty/profile/derek.

of Oklahoma, a Master of Music in piano at the Cleveland Institute of Music, and a Bachelor of Arts in Music at Bowling Green State University (OH).

Dr. Price recently completed his third term as President of the Board of Trustees of the Frances Clark Center for Keyboard Pedagogy, and his recent engagements have included repeated invitations and performances and clinics at the national conventions of the Music Teachers National Association, the National Conference on Keyboard Pedagogy, The Royal Conservatory of Music Professional Development Seminars, and solo recitals and presentations throughout AR, AZ, CA, FL, GA, IL, IN, KS, LA, MD, MI, MO, MS, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, SC, TN, TX, WA, VA, and Washington DC. Other engagements include performances and masterclasses in Canada, Thailand, Singapore, and in Kuala Lumpur and Penang in Malaysia, and in South Korea. He is creator and editor-in-chief of the on-line piano pedagogy journal "Piano Pedagogy Forum." "Piano Pedagogy Forum" has published more than 25 issues with participation from more than 100 writers from 84 different colleges/universities, over 28 different states and three foreign countries. The Music Teachers National Association named "Piano Pedagogy Forum" as the recipient of the 2008 Frances Clark Keyboard Pedagogy Award. Dr. Price has recorded 39 compact discs of educational piano music for Alfred Publishing Company and has published educational compositions with Alfred Publishing Company and the FJH Music Company. He is a member of the Committee on Special Needs Students for the National Conference on Keyboard Pedagogy and is co-author of the Inclusive Piano Teaching Blog. Special teaching interests of Scott Price include teaching students with disabilities, teaching very young children, and teaching keyboard improvisation to piano students ranging from beginning to advanced levels. His work with students with special needs has been featured on

WISTV (SC) and WLTX (SC), and in The Piano Magazine: Clavier Companion. One of Dr. Price's students with autism was featured on Dateline NBC, and CNN. Dr. Price is the founder of the Carolina LifeSong Initiative that is dedicated to providing piano lesson and music experiences for students with special needs, and in fostering best practices in teaching and teacher training. He has been awarded the "Best of BGSU Outstanding Graduate" alumnus award from Bowling Green State University in Ohio in 2002, and was named a Foundation Fellow by the Music Teachers National Association in 2009. He is the 2012 recipient of the Southeastern Conference Faculty Achievement Award for the University of South Carolina. Dr. Price is a 2019 recipient of the Frances Clark Center for Keyboard Pedagogy Outstanding Service Recognition Award.[38] To provide innovative teaching strategies and detailed approaches for special learners, including students with ASD, he presented at the Frances Clark Center 2020 Summer Intensive Seminars, and the session is titled: "Inclusive Teaching: Possibilities for All Students."

According to Inclusive Teaching Blog, "Dr. Beth Bauer and Dr. Scott Price, along with Dr. Melissa Martiros and Dr. Derek Kealii Polishuck presented a panel entitled Teaching Students with Special Needs–Your Questions Answered. The group presented this interactive panel at the 2016, 2017, 2018, 2019, and 2020 MTNA national conferences along with the National Conference on Keyboard Pedagogy 2015, 2017, 2019, and 2020 conferences."[39]

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[38] School of Music at the University of South Carolina, "Scott Price," accessed February 10, 2020, https://www.sc.edu/study/colleges_schools/music/faculty-staff/Price.php.

[39] The Frances Clark Center, "Inclusive Piano Teaching at the National Conference on Keyboard Pedagogy!," accessed February 16, 2020, http://www.keyboardpedagogy.org/blogs/inclusive-piano-teaching-blog/326-inclusive-teaching-at-the-national-conference-on-keyboard-pedagogy.

PURPOSE OF STUDY

The purpose of this study was to interview five internationally and nationally recognized professionals currently teaching piano to students with autism spectrum disorder, and explore their approaches to teaching music counting to students with ASD. The criteria for selecting the interview participants were 1) development and success of music programs for students with ASD, 2) breadth of publications, 3) workshops and presentations at local, state, national and international conferences. All five of the interview participants hold doctoral degrees in either piano pedagogy and/or performance, music education, or music therapy. This study collected responses to a questionnaire and then summarized those responses to present best practices in teaching music counting to students with ASD. The interview subjects were Dr. Jennie Band, Dr. Beth Bauer, Dr. Melissa Martiros, Dr. Derek Kealii Polischuk, and Dr. Scott Price.

NEED FOR THE STUDY

There is a growing abundance of information on teaching music to students with autism spectrum disorder. Information may be found through a wide array of books, articles, workshops, webinars, and online resources. However, there is no current detailed and comprehensive resource on best practices in teaching music counting to students with ASD. Existing articles, webinars, and conference presentations may not be as in depth as the work actually happening in teaching studio. To provide a comprehensive guide, there is a need for a summary of effective teaching approaches and best practices in teaching music counting to students with ASD. This study examined information that was gathered from five internationally and nationally recognized professionals in the piano pedagogy, music education, and music therapy fields and summarized the information, making it available to teachers

and offering guidance in teaching music counting to students with autism spectrum disorder.

LIMITATIONS OF THE STUDY

This study was limited to interviewing five internationally and nationally recognized professionals, Dr. Jennie Band, Dr. Beth Bauer, Dr. Melissa Martiros, Dr. Derek Kealii Polischuk, and Dr. Scott Price, who specialize in teaching piano students with autism spectrum disorder. Their teaching experiences, based on utilizing pedagogical and effective approaches to successfully teach music counting, were collected and examined. Reference is made to other individuals working in the field of music study and ASD, but the study was limited to interviews with the five identified subjects and their practices and teaching music counting to students with ASD. Interviews took place via phone, Zoom, and email due to the COVID-19 pandemic to ensure health and safety for all participants.

REVIEW OF RELATED LITERATURE

In recent decades, increased awareness of autism spectrum disorders has improved the accessibility of resources for broad-spectrum information on the characteristics of ASD and explanations of educational services and treatments. Public and private organizations are working on understanding ASD more through research.

The Diagnostic and Statistical Manual of Mental Disorders (DSM), published by the American Psychiatric Association (APA), is the standard reference used to diagnose autism, including definitions, diagnostic criteria, and updated information of autism spectrum disorder. The Centers for Diseases Control and Preventions under the Department of Health and Human Services is the national leading public health

institute of the United States of America, and offers a variety of information on autism spectrum disorder, such as definitions of ASD, signs, and causes, screening and diagnosis for families and health professionals, treatment services for early interventions, and data and statistics. For professionals, these sources are useful to diagnose the symptoms of children with ASD as early as possible and research essential data on ASD, including risk factors and causes.[40]

Dr. Temple Grandin[41] is a prominent author and speaker on both autism and animal behavior. She was diagnosed with ASD when she was four years old. Dr. Grandin is a professor of Animal Science at Colorado State University and has a successful career consulting on both livestock handling equipment design, and animal welfare. She has written various books: *The Way I See It: A Personal Look at Autism and Asperger's*, relating to her life and individuals with ASD, and *The Autistic Brain: Helping Different Kinds of Minds Succeed*, which is a book that includes the history of the ASD diagnoses and sensory problems. She also discusses in this book pattern thinkers, word/fact thinkers, and visual thinkers. Her books, which are written for parents and educators to help children with ASD find their identity from routines, explain the combination of Grandin's personal experiences and her scientific background. These books make for a fascinating dive into the latest brain studies on autism spectrum disorder. Her works give practical perspectives and theories on autism spectrum disorders.

Chantal Sicile-Kira is the author of *Autism Spectrum Disorder: The Complete Guide to Understanding Autism*, which is a comprehensive and practical guide to

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[40] CDC, "Autism Spectrum Disorder (ASD)," accessed February 10, 2020, https://www.cdc.gov/.

[41] Temple Grandin, Ph.D., "About Temple Grandin," accessed February 11, 2020, https://www.templegrandin.com/.

ASD and is written for parents, educators, and professionals. The book contains the characteristics of autism spectrum disorder, accurate diagnosis, treatment/therapies based on behavioral, psychological, and biomedical interventions, and strategies for families and educational programs to successfully work with individuals with ASD. This book offers resources of ASD-Specific National Organizations: there are numerous nonprofit local and national organizations in the United States.

- Autism National Committee (AutCom): autcom.org
- Autism One: autismone.org
- Autism Research Institute (ARI): autism.org
- Autism society of America (ASA): autism-society.org
- Autism Women's Network (AWN): autismwomensnetwork.org
- Autistic Global Initiative (AGI): autism.com/index.php/tests
- Autistic Self-Advocacy Network (ASAN): autisticadvocacy.org
- Autism Speaks: autismspeaks.org
- First Signs: firstsigns.org
- Global and regional Asperger Syndrome Partnership (GRASP): grasp.org
- National Autism Association (NAA): nationalautismassociation.org
- Organization for Autism Research (OAR): researchautism.org
- Profectum: profectum.org
- Talk About Curing Autism (TACA): tacanow.org

Ongoing research on education for students with ASD includes specific information for music educators and pedagogues. In *Music in Special Education*, Mary Adamek and Alice-Ann Darrow (2018) describe specific characteristics of autism. Students with autism may have difficulty communicating verbally. As a

result, more nonverbal communication methods might be used. Some students with autism may repeat words or phrases that are echoed many times, while others may not seem to respond completely to verbal cues or instructions. Additionally, many students with autism may appear to use limited eye contact or be highly attached to unusual inanimate objects. They mention specific characteristics of disabilities, which include cognitive, communicative, behavioral, emotional, sensory, physical, and medical factors, to establish pedagogical approaches and connections to teaching students with special needs, through suggested lesson plans that are effective, easily understood, and provide pedagogical teaching strategies for them.

Their book, *Music in Special Education* (2018), specifically discusses students with autism spectrum disorder (ASD) in music education and music therapy over three parts:

Educational Implications

- Communication skills
- Use of visuals and structure to enhance receptive and expressive communication
- Social skills and peer interactions
- Managing difficult behaviors

Music Education for Students with Autism Spectrum Disorder

- Adaptations for the music classroom
- Music education in self-contained classroom: adapted or special music education class

Music Therapy Services for Students with Autism Spectrum Disorder

- Music therapy as a related service or district-wide service
- Music therapy goals and intervention strategies

Teaching Music to Students with Autism (2013), written by Hammel and Hourigan, provides a comprehensive resource to explore the musical and educational needs of students with autism, and to give specific accommodations and modifications to music educators for teaching students with autism. They discuss how to deal with the communication, cognition, behavioral, sensory, and social interaction challenges via the suggested strategies, and provide detailed vignettes, which teachers can relate to situations with students with autism in their own schools or classrooms.

Chapter 10 contains useful Internet resources for music teachers:

- Autism One International: http://www.autismone.org
- Autism Research Institute: http://www.autism.com/ari/
- Autismhelp.org: http://www.autismhelp.info/default.aspx
- Autism Society of America: http://www.autism-society.org
- Autism Speaks: http://www.autismspeaks.org
- The National Autism Association: http://www.nationalautismassociation.org
- The National Autistic Society: http://www.nas.org/uk/
- Help with Autism, Asperger Syndrome & Related Disorders: http://www.autism-help.org/
- AAPC Publishing: http://www.aapcpublishing.net/
- Future Horizon Inc. http://www.fhautism.com/
- Center for Autism and Related Disorders: http://www.centerforautism.com/
- US Autism & Asperger Association: http://www.usautism.org
- Talk About Curing Autism: http://www.tacanow.org/about-taca/
- AutismSupportNetwork.com: http://www.autismsupportnetwork.com/

- Hearty SPIN (Solutions for People in Need): http://seriousstartups.com/
- Touch Autism: http://www.touchautism.com/

Music Education for Children with Autism Spectrum Disorder, a resource for teachers, was written by Sheila J. Scott and published in 2017. She provides elemental principles of ASD based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) in conjunction with autism and music education. Especially, in chapter three, she mentions teaching strategies in songs and singing, including pitch perception, relationships between language and music through vocal (singing) experiences, as well as music-based activities and music resources for children with autism spectrum disorder.

Children with Autism: A Parents' Guide, edited by Michael D. Powers, provides practical information, based on families of children and adults with autism spectrum disorder, to support and understand those with ASD. Chapter five offers advice to children with autism and their families for cultivating positive relationships between children with ASD and their parents, further dealing with diagnoses from early years to school age (3-12). Chapter six, *Your Child's Development,* written by Sandra L. Harris, contains information on how autism affects children's development and how an educational program can make a difference in their life. In addition, three areas – cognitive, language, and social development in children with ASD are emphasized with practical advice regarding helping them overcome developmental problems.

The Well-Tempered Keyboard Teacher, written by Marienne Uszler, Stewart Gordon, and Elyse Mach, serves as a comprehensive piano pedagogical book for future piano teachers to provide effective and specific teaching methods and techniques for beginning, intermediate, and adult students. The book also examines

learning theories for a variety of levels of ability and experience, and discusses the teaching approaches of reading, counting, and technical skills which can be used for traditional students and students with ASD.

The Inclusive Piano Teaching Blog, which is an online publication of The Frances Clark Center for Keyboard Pedagogy authored by Dr. Beth Bauer, Dr. Melissa Martiros, and Dr. Scott Price, is designed to provide in-depth and practical information on teaching students with special needs. The blog's "writers have extensive experience working with students across the autism spectrum, and in working with students with Down Syndrome, visual impairments, hearing impairments, ADD/ADHD, Fragile-X Syndrome, and various other learning disabilities, as well as at-risk and under-served youth."[42]

For special learners, various topics are included on the Inclusive Piano Teaching Blog:

Dr. Beth Bauer

- Person-First Language
- Recital Preparation and Performance
- Teaching Reading, Part III: Tools for Teaching Reading

Dr. Melissa Martiros

- Labels
- Teaching Reading, Part I
- Preventing and Managing Challenging Behavior: Part I
- Preventing and Managing Challenging Behavior: Part II: When Small Things Become Big Things

[42] The Frances Clark Center, "Welcome to the Inclusive Piano Teaching Blog," accessed February 12, 2020, http://keyboardpedagogy.org/blogs/inclusive-piano-teaching-blog/242-welcome-to-the-inclusive-piano-teaching-blog.

Dr. Scott Price

- Finger Numbers (Not Finger Knots!)
- Repertoire Choices for Students with Autism
- Studio Environment
- Teaching Reading, Part II: Framing Instruction
- Teaching with Visual Impairments – Empathy and Facilitation
- Teaching with Visual Impairments – Resources
- Vocabulary Effectiveness for Students with Special Needs

The Piano Magazine: Clavier Companion, published by The Frances Clark Center for Keyboard Pedagogy, offers a wide range of articles on piano education at all levels, "including Inspiring Artistry, Timeless Teaching videos, Webinars, the Facebook group 'Piano Teach Learn,' and additional Teacher Education Resources."[43] In *The Piano Magazine: Clavier Companion*, Dr. Scott Price's articles are related to students with special needs: "All in a Day's Routine: Piano Teaching and Autism," issued in July/August 2010, "More than a Lesson: Piano Study and Students with Special Needs," issued in July/2014, "Inclusion: Part 1, Bringing Music-Making to Everyone," issued in May/2018, and "Winter 2020: Questions and Answers," which was issued in Winter 2020. These issues allowed music teachers to know of piano events or festivals for students with special needs. The article, "Ten Characteristics for Teaching Students with Special Needs," written by Dr. Beth Bauer, was issued in July/August 2010, and another article was "Teaching Repertoire to Special Learners: Practical Solutions" in Summer 2019, as well as Dr. Melissa Martiros' Summer 2019 article, "Inclusive Teaching," which emphasized access to a

[43] The Piano Magazine, "Welcome to the Piano Magazine!," accessed February 11, 2020, https://www.claviercompanion.com/about.

quality music education for students with special needs. Dr. Derek Kealii Polischuk's articles, "Inclusion: Part 3, The Celebrating the Spectrum Piano Festival at Michigan State," in May 2018 and "Working with Pianist with Attention Deficit Hyperactivity Disorder," in Winter 2020 discussed the teaching implications of working with special learners.

Another beneficial online resource, Webinars in *The Piano Magazine: Clavier Companion*, provide teacher training for individuals working with students on the autism spectrum by Dr. Beth Bauer and Dr. Scott Price.

Dr. Beth Bauer

- Basic Tips for the Inclusion of Students with Special Needs in the Piano Studio

Dr. Scott Price

- Tone is Everything: Voice Usage and Vocabulary for Teaching Special Learners
- Autism and Piano Study: A Basic Teaching Vocabulary
- Autism and Piano Study: A Basic Teaching Vocabulary, Part II- Inside the Lesson

DESIGN AND PROCEDURES

The study comprises 4 chapters, a bibliography, and appendices. Chapter 1 consists of an introduction, purpose and need for the study, limitations, methodology, review of related literature, and design and procedures. Chapter 2 consists of the interview questions and methodology of the study. Chapter 3 contains transcripts of interviews. Chapter 4 provides a summary of the information in the interviews, conclusions, and recommendations for further study.

CHAPTER 2

MTHODOLOGY

This study was designed to collect information on how five internationally and nationally recognized professionals currently teach piano to students with autism spectrum disorder and to summarize their approaches to teaching music counting to students with ASD. This study gathered responses to a questionnaire and then summarized them to present best practices in teaching music counting to students with ASD. The interview subjects were Dr. Jennie Band, Dr. Beth Bauer, Dr. Melissa Martiros, Dr. Derek Kealii Polischuk, and Dr. Scott Price who have specialized in teaching piano students with autism spectrum disorder.

The following procedures were observed when conducting the study:

- Permission to conduct the study was obtained from members of the dissertation committee, and the Internal Review Board of the University of South Carolina.
- The study carries no benefit and poses minimal risk to the participants. The sole potential risk consists of the possibility of disclosure of identity in the interview transcripts.
- Invitations to participate were sent to Dr. Jennie Band, Dr. Beth Bauer, Dr. Melissa Martiros, Dr. Derek Kealii Polischuk, and Dr. Scott Price.
- The participants were given information on the nature of the study including benefits and risks.
- Participation was voluntary.
- Informed consent was obtained from all participants in this study.
- Interview questionnaires were sent by email to the participants in the study prior to the interview.

- Interviews were conducted at a date and time of the participants' choosing, and by their method of choice: phone, email, Skype, FaceTime, in person, or by other means requested by the participant. Caution was taken to ensure the health and safety of all participants during the COVID-19 pandemic.

- Interviews were recorded for aid in transcription.

- Recordings were stored on iPhone/iCloud through the Voice Memo application, which was password-protected. The recordings were also stored on computer and password protected.

- Interview recordings stored on iPhone/iCloud and the computer remained saved for one year and then the interview recordings were removed from all storage devices and permanently deleted.

- Following the transcriptions of interviews, transcriptions were sent to all participants, allowing them to make corrections or changes. Following receipt of those changes the author made all revisions, and then sent each interview transcript to the participants for their final review and approval.

- Final notice of approval for including the interview transcriptions in the dissertation was obtained.

- In the interview transcriptions, all identifiable information was redacted to protect participants' identities.

The following interview questions were used in the study:

Sections 1, 2, and 3 of the questionnaire focus on teacher experience and training, studio demographics, and educational curriculum.

1. Background

a. How long have you been teaching students with autism spectrum disorder?

b. What prompted you to begin teaching students with autism spectrum disorder?

c. What resources did you consult to begin teaching students with autism spectrum disorder?

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching, and in your studio or educational program?

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

b. What are the ages of students with autism spectrum disorder that you teach?

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

f. What other special needs or co-morbid disorders do your students present with?

3. Curriculum

a. Do you teach private lessons or group classes or both?

b. Do you require parental involvement during lessons and/or practice?

c. Do your students have regular practice times and routines?

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

e. Do you use print instructional materials with your students?

f. If so, what print instructional materials do you use?

g. Do you use electronic instructional materials with your students?

h. If so, what electronic instructional materials do you use?

i. Do you create your own instructional materials or resources?

j. If so, please describe them.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

l. How often do you communicate with parents to discuss students' progress?

4. Music Counting Approaches

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

d. If so, please describe.

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

f. If so, please describe them.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

5. Music Counting

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

g. Can you please describe solutions that you use to overcome these challenges?

h. Do you have any other thoughts you would like to add?

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

a. Do you start with printed music materials for preparatory majors to teach symbolic notation?

b. Do you use only printed scores to teach symbolic notation?

c. Do you use online resources to teach symbolic notation?

d. Do you create your own materials to teach symbolic notation?

e. Do you use any games or activities to teach symbolic notation?

All documentations related to University of South Carolina Internal Review Board approval, informed consent, agreement to participate in the study, and review and final approval of the interview transcripts, appear in the appendices of the study.

CHAPTER 3

INTERVIEW TRANSCRIPTS

Each of the respondents were assigned a title of "Respondent number X" and presented in random order to ensure privacy and anonymity. The names of the individuals, related programs, and universities were redacted from the interview responses to ensure their anonymity.

Respondent 1

[redacted]

The following interview questions will be used in the study:

Sections 1, 2, and 3 of the questionnaire focus on teacher experience and training, studio demographics, and educational curriculum.

1. Background

a. How long have you been teaching students with autism spectrum disorder?

At least 20 years.

b. What prompted you to begin teaching students with autism spectrum disorder?

I received a phone call from a local piano dealer. They had encountered a student who was blind and autistic, and their parents were looking for a teacher. So, he asked me if he could refer them to me.

c. What resources did you consult to begin teaching students with autism spectrum disorder?

There were no resources at that time on teaching piano to students with autism spectrum disorder, so I did a lot of reading into music therapy and special education. I also contacted a local music therapist who was working with some of my students. Alongside this, I devoted a lot of time and energy towards talking with students' parents.

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

There really wasn't any training at that time because it was new in the piano pedagogy field. So again, I did a lot of reading into special education and music therapy, as well as talked extensively with the parents, other teachers, and appropriate therapists. Afterwards, I began a qualitative study in which I took detailed notes and recordings of lessons, then catalogued and documented what worked or didn't work for the teaching process.

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching, and in your studio or educational program?

We basically have an open door policy and philosophy, so I have had students with autism spectrum disorder, Down syndrome, ADD/ADHD, hearing impairments, vision impairments, and developmental delays. We don't turn anyone away.

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

I currently have nine students.

b. What are the ages of students with autism spectrum disorder that you teach?

I have worked with students from age seven to adulthood.

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

Currently all male. Over the course of my career I would say it has been 75% male. In the past, I had female students with autism.

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

The vast majority of my students have been at the low to mid functioning levels.

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

I currently have one who would fall under the old criteria as having Asperger's syndrome, so he is high functioning.

f. What other special needs or co-morbid disorders do your students present with?

They all generally present with other disorders, such as developmental delays, fine motor skill delays, apraxia of speech, and speech delays. I would say that most of my students with autism also have fine motor skill delays, and other developmental delays as well.

3. Curriculum

a. Do you teach private lessons or group classes or both?

Private lessons.

b. Do you require parental involvement during lessons and/or practice?

Yes, parents are always present during the lessons and they assist with behavioral issues during the lessons. They also assist with practicing at home. Parents know the students and all the details about their conditions. Ultimately, they are familiar with their children's challenges. They also know what works in their education and life process, and can be tremendous resources for reframing my teaching in order to fit the particular needs of the students.

c. Do your students have regular practice times and routines?

Yes, they have learning and practice routines, as well as regular practice times. They are very structured. Regularly, students with ASD have an assignment notebook, which details what they are supposed to do. And then we have specific learning routines and practice routines, such as the five-step plan. This plan directs the student to work on notes first and then

fingering. Afterwards, they move on to counting, which includes learning a little bit of the music. They have to do that five times perfectly before they can move on.

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

Elementary to advanced

e. Do you use print instructional materials with your students?

Yes.

f. If so, what print instructional materials do you use?

I have used Alfred Premier Piano Course and Piano Adventures, the Royal Conservatory Celebration series and lots of supplementary material, sheet music, and holiday music. I also use an improvisation curriculum that I developed because all of my students are required to learn how to improvise. We do this as a way to introduce concepts to them before they reach the labels in the books, thus allowing the students to understand the teaching aurally, visually, and kinesthetically. Many of them compose if they are able, so they learn music theory through actually playing the keyboard instead of a theory book, which may not be approachable or usable by them.

g. Do you use electronic instructional materials with your students?

Generally no, but I have used electronic flashcards in the past.

h. If so, what electronic instructional materials do you use?

I currently do not use electronic flashcards because most of my students do not understand the musical concepts with the electronic flashcards well or are not able to understand the connection between what we are doing with the electronic materials and what is being requested at the keyboard. In some cases, technology can become a distraction or it can be also a trigger for undesirable behaviors.

i. Do you create your own instructional materials or resources?

Yes.

j. If so, please describe them.

It is the improvisation curriculum that I use.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

Yes, and some of them have done both. If they are working with a music therapist, the therapist will be working on life skills that the students need. And in some cases, the music therapists can also advise me and can be willing to include things in the curriculum that will aid with the piano lessons as well.

l. How often do you communicate with parents to discuss students' progress?

At least weekly the parents are in the lesson so they are seeing everything that is going on and so there is a lot of communication and sometimes by email or text message or phone in between lessons.

4. Music Counting Approaches

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

Metric approach and directive words.

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

It becomes part of the five-step plan learning and practice routine, and for step number three they have to learn the rhythm and how to count which depends upon the student. It can be verbal or it can be clapping or it can be singing.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

Yes.

d. If so, please describe.

I use what I call directive words, which are words that describe what the student will have to do with their body to create the sound at the keyboard. So if we have a quarter, quarter, half note pattern, the directive words would be play, play, play-hold or touch, touch, touch-hold.

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

I don't use technology but I use supplementary instructional materials.

f. If so, please describe them.

If we can expand supplementary instructional materials to include teacher models or any recordings that come with the lesson materials.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

I use my improvisation curriculum, so through improvisation the students are learning everything that they need to do to approach the printed book. They can understand concepts through improvisation aurally, physically, and visually before they approach the label in the book.

5. Music Counting

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

I do very little explaining unless it is using directive words to teach the rhythm. In some cases I will talk about big beats and a lot of that is done through modeling and improvising duets with the student. They don't necessarily and cognitively understand it but aurally and physically they completely understand the concept of meter and rhythm.

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

Explaining and teaching concepts of rhythm is used in the same way through directive words, improvisation, and improvising duets with the student.

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

My approach comes from directive words, improvisation, improvised duets, and modeling. First, I have to make sure that they understand the vocabulary and what the word means, what a steady pulse means or a

steady beat means. Once they understand that then I use directive words, modeling, improvisation, and improvised duets to help them coordinate their fine motor skills. It is not sometimes a question of them understanding it or hearing it, it is physically being able to do it with the lack of fine motor skill development.

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

I use singing, chanting, and clapping, and these activities are student-centered. I do whatever is needed for those particular students to help them with meter, rhythm, and counting, so it can include anything.

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

Use of the directive words and lots of improvisation.

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

Cognitive development and that many of them are not yet ready or not able to understand the abstract counting processes that are used in traditional music teaching.

g. Can you please describe solutions that you use to overcome these challenges?

To solve fine motor skill problems, I use directive words and improvisation along with traditional counting approaches. The layering of numbers and words and concepts on top of the ability to physically make sound at the keyboard becomes meaningless and counterproductive or it can be a trigger for behavioral problems.

h. Do you have any other thoughts you would like to add?

I think most of the problems in teaching music counting to students on the spectrum just come from the layering of too many concepts. There is a need to actually teach them what words mean or to teach them the actual words and what they mean before we begin layering too many activities on top of them during the lesson.

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

Don’t layer too many concepts and activities during the lesson. When you teach students with ASD the vocabulary, you need to make sure they understand what the words mean. Teachers should give them step-by-step instruction to teaching music counting. I feel like the directive words really work best. It has worked across the board for all of my students.

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

Section 6 of the questionnaire focuses on pedagogical practices in teaching music counting notation to piano students with autism spectrum disorder. This section includes questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How to you introduce students to rhythmic notation?

Since I use a variety of improvisation activities, my students already know aurally, physically, and visually how that looks and sounds at the keyboard. Once they are firmly grounded in the concept through improvisation, then we open up the book and show them what it looks like when it is written down on the page. Sometimes I may not do that with the book but may do it with a blank piece of paper and say here is what a "play" looks like and here is what "play, play, play-hold" looks like and then I draw quarter and half notes so that they are introduced to it without any distraction.

b. Do you introduce rhythmic notation separately from pitch notation?

I typically don't introduce rhythmic notation separately from pitch notation because the students may not connect it in their thinking.

c. Do you use only printed method books or printed theory books (or a combination of both) to teach rhythmic notation?

It depends upon the students. Some students only use printed method books. I have had students with visual impairments who were very low functioning, who needed to learn by rote or who were able to approach a

little bit of braille music instruction. Students with ASD may use printed theory books as necessary. However, they may not understand these things in a cognitive abstract or the connection between book and keyboard, but they may understand them aurally through improvisation.

d. Do you use online resources to teach rhythmic notation?

I typically do not use online resources because it can be a distraction for students with ASD. I want to teach rhythmic notation through improvisation and modeling and other activities.

e. Do you create your own materials to teach rhythmic notation?

I created directive words and my improvisation curriculum.

f. Do you use any games or activities to teach or reinforce rhythmic notation?

I use things made up on the spot or things that I notice from my students to catch their attention and then we create the game or activity during the lesson.

g. Please describe any other procedures or materials you use to teach rhythmic notation to students with autism spectrum disorder.

Teachers need to do lots of different kinds of reinforcement through repertoire, improvisation and repetition.

7. Additional Information on Teaching Music Counting to Students with Autism Spectrum Disorder

Please add any additional information you wish about the process of teaching music counting to students with autism spectrum disorder.

Layering is the biggest problem, including layering of concepts, methodology, and techniques. I would advocate for a lot of creative music making and improvisation as well as a way to teach concepts before the student reaches the book.

Thank you for agreeing to participate in this study, and for offering your generous time and expertise to the author during this process.

Respondent 2

[redacted]

The following interview questions will be used in the study:

Sections 1, 2, and 3 of the questionnaire focus on teacher experience and training, studio demographics, and educational curriculum.

1. Background

a. How long have you been teaching students with autism spectrum disorder?

For 10 years

b. What prompted you to begin teaching students with autism spectrum disorder?

Having students with autism in my group piano class that my graduate students were teaching, and working with those students. It was sort of an

accident that they were in my class, but I ended up working with them privately and then began teaching many other students with ASD because of that.

c. What resources did you consult to begin teaching students with autism spectrum disorder?

I tried to read as many articles by your professor as possible, [redacted], as well as anything that was out there in the piano literature in terms of scholarly articles, and then also I tried to read as much education and psychology literature on the subject as possible.

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

For my educational process, I read all literature related to this work, collaborating with colleagues in other fields at [redacted] who work in this field.

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching, and in your studio or educational program?

I have students with ADD, ADHD and have had those students for a long time. I've worked with a lot of those students. I have not worked with any students with Down syndrome.

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

I currently teach two students with ASD and then in the summers we have our [redacted] College of Music where between five and seven students with ASD come for a week-long event.

b. What are the ages of students with autism spectrum disorder that you teach?

Currently, I teach an 11-year-old and a 22-year-old with ASD.

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

I've one male and one female.

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

Both of the students that I'm teaching right now are high-functioning levels.

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

Both of my current students.

f. What other special needs or co-morbid disorders do your students present with?

With my current students, I'm not aware of any comorbidity as such.

3. Curriculum

a. Do you teach private lessons or group classes or both?

Currently, private lessons.

b. Do you require parental involvement during lessons and/or practice?

Lessons and practice.

c. Do your students have regular practice times and routines?

They do and every week.

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

Currently, one of the students is at an intermediate level and the other one is the advanced level.

e. Do you use print instructional materials with your students?

Yes.

f. If so, what print instructional materials do you use?

I have used a standard piano repertoire. Both of these students are not in method books. They're just learning pieces from the teaching repertoire. They're learning Bach and Chopin, things like that.

g. Do you use electronic instructional materials with your students?

Currently, no.

h. If so, what electronic instructional materials do you use?

No.

i. Do you create your own instructional materials or resources?

No.

j. If so, please describe them.

Not Applicable.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

Both of them work with music therapists.

l. How often do you communicate with parents to discuss students' progress?

Every week at the lesson.

4. Music Counting Approaches

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

Yes, a standard approach to counting (syllabic counting).

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

I try to get these students to count out loud as much as possible, but that's a similar thing that I would do with a student who is not on the autism spectrum.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

No.

d. If so, please describe.

Not Applicable.

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

No.

f. If so, please describe them.

Not Applicable.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

I try to have the students clap and count rhythmic examples for me. Typically, what I do is I will demonstrate every example for them, and I try to do a little bit of this every week with them.

5. Music Counting

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

The thing that I try to do is to demonstrate the meters and to have them experience how the meters sound in music. I don't try to over-explain how meters work, but rather have the students just experience them.

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

It's a matter of demonstrating, having them listen to music in various rhythms, having them play music in various rhythms. It's no different, to be honest than teaching students without ASD.

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

The main thing is counting along with them, but more importantly, having them count them out loud while they play. I find that when a student is counting out loud, they're offering themselves a certain constraint of pulse consistency.

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

Clapping and singing.

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

I don't have any additional strategies other than the ones I've outlined.

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

I find occasionally that having a student change tempo is a little bit difficult. If a student has learned to play something in a particular tempo, then having them speed that up is a little difficult because they're used to a certain tempo they might've learned something at, but usually, that can be overcome with counting along with them, playing along with them, getting them to learn a faster tempo.

g. Can you please describe solutions that you use to overcome these challenges?

See above.

h. Do you have any other thoughts you would like to add?

No.

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

The advice I would have is that students with ASD, in my experience, generally are more naturally rhythmic than students without ASD. So, I think many teachers are a little bit scared of the challenges that these students might present, but in my experience, when it comes to rhythm, rhythm is an asset in these students, and they're better at rhythm than students without ASD.

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

Section 6 of the questionnaire focuses on pedagogical practices in teaching music counting notation to piano students with autism spectrum disorder. This section includes questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How to you introduce students to rhythmic notation?

I don't have any special methods for rhythmic notation other than every week, having them clap and count rhythmic examples that I provide them with, and then simply learning scores.

b. Do you introduce rhythmic notation separately from pitch notation?

No.

c. Do you use only printed method books or printed theory books (or a combination of both) to teach rhythmic notation?

A combination of both books. The main thing that I use is just testing examples from [redacted] Music Teachers Association Student Achievement Tests. These are just printed out things that all members of [redacted] receive and whatever levels the students have, I just typically use those examples and sample tests.

d. Do you use online resources to teach rhythmic notation?

No.

e. Do you create your own materials to teach rhythmic notation?

No. I use examples from the repertoire.

f. Do you use any games or activities to teach or reinforce rhythmic notation?

I'll have simple games, like having a little competition for points. I will do one example and then the student will do one example and we'll keep track of who scores the most points.

g. Please describe any other procedures or materials you use to teach rhythmic notation to students with autism spectrum disorder.

7. Additional Information on Teaching Music Counting to Students with Autism Spectrum Disorder

Please add any additional information you wish about the process of teaching music counting to students with autism spectrum disorder.

I said before about rhythm that it's not a very hard thing to do for students with ASD.

Thank you for agreeing to participate in this study, and for offering your generous time and expertise to the author during this process.

Respondent 3

[redacted]

The following interview questions will be used in the study:

Sections 1, 2, and 3 of the questionnaire focus on teacher experience and training, studio demographics, and educational curriculum.

1. Background

a. How long have you been teaching students with autism spectrum disorder?

I started teaching students with autism spectrum disorder when I started my DMA program at [redacted] in 2005. That was 15 year ago.

b. What prompted you to begin teaching students with autism spectrum disorder?

I started my first community school teaching in 2005. At that time, I was really struggling in teaching students with special needs. This process got me into considering special education study, doing my doctoral study. I knew that studying the special education field was challenging to me, doing a lot of research or finding and gathering even pedagogical resources for piano teachers working with students with special needs, so I started finding the path to do secondary work in special education, and then I began recruiting students with special needs. This was what prompted me to start teaching students with autism spectrum disorder.

c. What resources did you consult to begin teaching students with autism spectrum disorder?

It depends on the child; I used standard piano method books from Piano Adventures, Alfred music, and Bastian music etc… Moreover, Kids with ASD, who are not at the same level of functioning pose many challenges to use the teaching method books, so I had to create my own materials,

focusing on finger numbers, note names, and rhythmic awareness, including scale exercises. Also, flash cards in the second option were utilized for note identification. These approaches were divided into their functioning levels. Kids with a lower functioning level had a long-term sequence learning process, and the standard approach with piano method books was used for kids with a higher functioning level.

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

When I was a doctoral student, I decided to do work as an Applied Behavior Therapist with kids with autism spectrum disorder. This training made me a professional and skillful therapist. Moreover, I tried to spend a lot of time getting to know kids with autism spectrum disorder, working with their parents to have actual field experiences for 15 years.

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching and in your studio or educational program?

ADD/ADHD, visual and hearing impairments, and physical impairments. I have 6-7 students in my home studio and work as [redacted] in an educational program.

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

Three students.

b. What are the ages of students with autism spectrum disorder that you teach?

8-12.

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

All males.

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

I can't exactly tell about the levels as a piano teacher because it depends on students with autism spectrum disorder. However, I know that one of my students, who is 6 years old has the low functioning level.

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

Not Applicable.

f. What other special needs or co-morbid disorders do your students present with?

Students with ADD/ADHD/Sensory issues, who have difficulties to build on musical concepts required by foundational knowledge, react to over stimulation and that is really challenging to me.

3. Curriculum

a. Do you teach private lessons or group classes or both?

Private lessons and piano duet with students.

b. Do you require parental involvement during lessons and/or practice?

It depends on the child. Students with ASD, who are independent, are not required. At the beginning of the lesson, parental involvement is required for some students, and other students always need parental helps during the lesson.

c. Do your students have regular practice times and routines?

Yes, after homework, regular practice routine is made to practice the piano, sitting on the bench and taking time management for 20 minutes.

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

From elementary to intermediate.

e. Do you use print instructional materials with your students?

Yes.

f. If so, what print instructional materials do you use?

Piano Adventures's Disney books, Alfred's Premier Piano Course books and Music for Little Mozarts books.

g. Do you use electronic instructional materials with your students?

Yes.

h. If so, what electronic instructional materials do you use?

Applications on reading notes and rhythm practice from iPad.

i. Do you create your own instructional materials or resources?

Yes.

j. If so, please describe them.

Flash cards and color-coding.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

One of the students with ASD is working with a therapist.

l. How often do you communicate with parents to discuss students' progress?

To figure out my students' challenges during the lesson, I frequently communicate with parents to discuss their progress, making a personal relationship.

4. Music Counting Approaches

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

Syllabic counting.

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

I introduce rhythms along with singing and say words: the quarter note (Ta) 8th note (Ti) Half note (Ta-ah), a lot of repetitions of recognizing rhythms are required, and through these exercises, students can get to know rhythmic accuracy correctly.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

Yes.

d. If so, please describe.

I use rhythmic cards to introduce different rhythms as well as singing rhythms in 2/4, 3/4, and 4/4 meter after me. Singing after me.

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

Yes.

f. If so, please describe them.

I use simple flashcards for teaching music counting. One of the effective ways to reinforce music counting to slow down the pace when they feel the rhythms in the meter.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

First, I introduce basic rhythms with flashcards and demonstrate what my students will play while they are observing my activity.

Second, we do clap back with a lot of repetitions to be aware of an understanding and feeling the given rhythms. Third, we try to do rhythmic practice at slow and fast tempos, singing and clapping together.

5. Music Counting

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

This process is divided into three steps: “Demonstrating,” “Doing,” “Correcting” I effectively convey meter’s concepts by having students with ASD understand them, and the most important thing is to demonstrate what

the 3/4 meter feels like, the 6/8 meter feels like in student's physical responses on accepting two meters.

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

We have a conversation about meters. For example, students with ASD look at symbols, a quarter note or a half note in their repertoire. I just say that the quarter note is one beat (Ta) and the half note is two beats (Ta-ah) without explanation of concepts of rhythm and then students with ASD do and play them. After this manner, they can automatically comprehend the rhythms they feel.

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

When students with ASD have difficulties to feel the steady pulse, I try to do many repetitions "Not this and Do this" until they accomplish the correct steady beat.

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

Singing and clapping with physical gestures to give students with ASD sensory input to grasp a meter, a rhythm, and a steady pulse.

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

To get to know music counting, students with ASD need to be exposed to various repertoire, including music rhythms. I send them videos to look at and listen to new pieces and then they can practice counting out loud.

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

A lack of rhythmic accuracy in performance might not be a lack of content knowledge about rhythms. It might be an invisible issue. Also, teaching complex rhythms, which are mixed in quarter notes, half notes, dotted half notes, whole notes, and even 16^{th} notes to students with ASD is a lot harder. For example, to teach triplets, I don't do like counting with saying pineapple or blueberry but I just say Ti-ke-ti, doing a lot of repetitions. In challenges of meter changes, I would imagine one of the advantages of doing syllabic counting. Thus, you could just keep allowed counting during the entire practice time.

g. Can you please describe solutions that you use to overcome these challenges?

See above.

h. Do you have any other thoughts you would like to add?

No.

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

The significant thing would be not focusing on specific teaching to recognize rhythms. If you are a new person to this work, I would recommend trying to focus on one or two students with ASD at a time, not a whole bunch of kids and you try to get to know that child, spending a lot of talking with them and communicating with their family about what kinds of the challenges they have. If teachers make a strong foundation with their students with ASD, they can be ready for working on rhythms with steady and slow tempos. Also, teachers constantly need to research ASD because every single student with ASD has different characteristics.

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

Section 6 of the questionnaire focuses on pedagogical practices in teaching music counting notation to piano students with autism spectrum disorder. This section includes questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How to you introduce students with ASD to rhythmic notation?

It is similar to what I said. I use flash cards and follow the learning sequences of typical piano method books.

b. Do you introduce rhythmic notation separately from pitch notation?

I do it from different concepts, using different kinds of flashcards and activities, and then I work on them from multiple different pitches and try to merge them in repertoire pieces.

c. Do you use only printed method books or printed theory books (or a combination of both) to teach rhythmic notation?

Combination in printed method books from Piano Adventures and Music for Little Mozarts.

d. Do you use online resources to teach rhythmic notation?

No.

e. Do you create your own materials to teach rhythmic notation?

No.

f. Do you use any games or activities to teach or reinforce rhythmic notation?

I do a copy game. First, I clap rhythms and have students with ASD make up the rhythms and then they copy the rhythms. It will take place in less than 5 minutes. I have done a matching game with many different rhythms. I give students with ASD a set of different cards like quarter notes, half notes, rhythmic patterns, and then they have to match for memory.

g. Please describe any other procedures or materials you use to teach rhythmic notation to students with autism spectrum disorder.

See above.

7. Additional Information on Teaching Music Counting to Students with Autism Spectrum Disorder

Please add any additional information you wish about the process of teaching music counting to students with autism spectrum disorder.

I have covered everything, and you are focused on music counting, which is a strong foundation of rhythmic awareness. However, as you focus on that, the important thing is to remember that teaching music counting is all contextualized by students with ASD. Thus, I think a wide range of teaching approaches of music counting that you will take would go into a successful lesson. For example, if you are working with a canvas to draw something special, you need to have a palette of colors used with different tools. It means that using distinctive and distinguishing methods to teach music counting to students with ASD will become effective teaching methods, making a creative process.

Thank you for agreeing to participate in this study, and for offering your generous time and expertise to the author during this process.

Respondent 4

[redacted]

The following interview questions will be used in the study:

Sections 1, 2, and 3 of the questionnaire focus on teacher experience and training, studio demographics, and educational curriculum.

1. **Background**

a. How long have you been teaching students with autism spectrum disorder?

20 years.

b. What prompted you to begin teaching students with autism spectrum disorder?

I was diagnosed with nerve damage and told by a doctor I could no longer be a performance major. At the same time as the surgery, I started teaching a student with disabilities.

c. What resources did you consult to begin teaching students with autism spectrum disorder?

Special education materials. Music had and still has very few.

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

Doctoral work and dissertation in music education and special education.

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching, and in your studio or educational program?

ADHD, dyslexia, dyspraxia, aphasia, Fragile X, Down syndrome, learning disabilities, optic nerve hypoplasia, missing corpus callosum, hearing disorders, blind, CP.

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

Over 40.

b. What are the ages of students with autism spectrum disorder that you teach?

Ages 4-45.

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

Primarily male.

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

I don't characterize. It is not appropriate for a piano teacher to come up with a diagnosis or label. I follow the label given me by the student's families.

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

Asperger Syndrome is no longer diagnosed or in the DSM. It is now referred to as High functioning autism.

f. What other special needs or co-morbid disorders do your students present with?

ADHD, math disabilities, anxiety, depression, dyslexia, Down syndrome.

3. Curriculum

a. Do you teach private lessons or group classes or both?

Both.

b. Do you require parental involvement during lessons and/or practice?

Yes.

c. Do your students have regular practice times and routines?

Yes.

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

All levels as well as advanced.

e. Do you use print instructional materials with your students?

Yes.

f. If so, what print instructional materials do you use?

Various-Faber, Alfred, and John Schaum.

g. Do you use electronic instructional materials with your students?

Yes.

h. If so, what electronic instructional materials do you use?

YouTube, iPad games.

i. Do you create your own instructional materials or resources?

Yes.

j. If so, please describe them.

I will write lesson materials individually devised for the student.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

No.

l. How often do you communicate with parents to discuss students' progress?

Every week.

4. Music Counting Approaches

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

Syllabic using Kodaly ta and ti-ti system.

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

I use this because the students use at school.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

No.

d. If so, please describe.

Not Applicable.

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

Yes, we use hand drums and work away from the piano.

f. If so, please describe them.

We use hand drums and work away from the piano.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

Depends on the lesson.

5. Music Counting

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

We start with flashcards and then transfer to the score and music.

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

I don't explain. We learn by trying and doing it. Then we transfer to the score.

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

I use the example of a heartbeat.

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

Hand drums or rote teaching.

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

It depends on the student and the understanding ability of the student.

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

Not applicable.

g. Can you please describe solutions that you use to overcome these challenges?

Not applicable.

h. Do you have any other thoughts you would like to add?

Not applicable.

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

Try and keep trying until something works. There is no one answer that works for all students.

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

Section 6 of the questionnaire focuses on pedagogical practices in teaching music counting notation to piano students with autism spectrum disorder. This section includes questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How to you introduce students to rhythmic notation?

Flashcards.

b. Do you introduce rhythmic notation separately from pitch notation?

Yes.

c. Do you use only printed method books or printed theory books (or a combination of both) to teach rhythmic notation?

I use the theory books that accompany the lesson book.

d. Do you use online resources to teach rhythmic notation?

No.

e. Do you create your own materials to teach rhythmic notation?

Yes.

f. Do you use any games or activities to teach or reinforce rhythmic notation?

Yes.

g. Please describe any other procedures or materials you use to teach rhythmic notation to students with autism spectrum disorder.

Not Applicable.

7. Additional Information on Teaching Music Counting to Students with Autism Spectrum Disorder

Please add any additional information you wish about the process of teaching music counting to students with autism spectrum disorder.

I use a lot of different special education books on teaching reading and math. The things I see there I adopt to piano pedagogy. I also look at the child's IEP and follow any clues I see in there. It helps to maintain consistency.

Thank you for agreeing to participate in this study, and for offering your generous time and expertise to the author during this process.

Respondent 5

[redacted]

The following interview questions will be used in the study:

Sections 1, 2, and 3 of the questionnaire focus on teacher experience and training, studio demographics, and educational curriculum.

1. **Background**

   a. How long have you been teaching students with autism spectrum disorder?

      I have been a Board-Certified Music Therapist for over 45 years. I began working with children with Autism Spectrum Disorder (ASD) at [redacted] in Savannah, GA in 1971. At that time children with autism were not always identified as such, but were often in classes for children with severe emotional difficulties.

   b. What prompted you to begin teaching students with autism spectrum disorder?

      My undergraduate degree was in music education, and while I was in that program doing my student teaching I became interested in working with children with special needs. At that point children with special needs did not always receive music education on a regular basis, but my supervising teacher believed strongly that all children needed and deserved an opportunity to participate in a program of music education. My supervising teacher told me about the field of music therapy, and consequently I entered a Master's program in music therapy at [redacted]

[redacted]. After graduation my first position was as I described above in letter 1-a.

c. What resources did you consult to begin teaching students with autism spectrum disorder?

In my first position as music therapist at [redacted] I received several years of intensive on-site training in the Developmental Therapy model developed by Dr. Mary M. Wood at [redacted]. In addition to the resources in this model, I consulted numerous music education materials that were available in the early 1970's.

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

(1) Undergraduate degree in music education ([redacted])

(2) Master's degree in music therapy ([redacted])

(3) Master's degree in behavior disorders ([redacted])

(4) Training in music therapy position at [redacted] (Savannah, Georgia

(5) Training in music therapy position at [redacted] (Athens, Georgia)

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching, and in your studio or educational program?

Specific Learning Disorders, Emotional/Behavioral Disorders, Attention-Deficit Disorders. Anxiety Disorders.

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

I'm recently retired from active teaching, but in my recent music therapy practice in Columbia, SC I worked with approximately 22 children with special needs. The majority of those students had a diagnosis of ASD.

b. What are the ages of students with autism spectrum disorder that you teach?

I worked with children with ASD, ages 3 to 21.

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

The majority of my clients were male (approximately 75%)

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

In the DSM-5 (2013, p.52) ASD severity levels are specified as:

Level 1, Requiring Support, Level 2, Requiring Substantial Support, and Level 3, Requiring Very Substantial Support. The severity level is specified for two criteria:

(1) Social Communication and

(2) Restricted, Repetitive Behaviors. Children may be at a different level for each of the two criteria. This being said, I would estimate around 10% of my clients were in the Low category, 80% in the Middle, and 10% in the High functioning level. Again, however, it is essential to remember that students may be at a different level for each of the two criteria listed above.

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

   According the DSM-5 (2013, p. 51) Asperger Syndrome is no lower considered a separate diagnosis from Autism Spectrum Disorder. Before the DSM-5 was published, I would say approximately 5-10% of my students would have presented with Asperger syndrome according the DSM-IV criteria.

f. What other special needs or co-morbid disorders do your students present with?

   Please see letter 1-e above.

3. Curriculum

a. Do you teach private lessons or group classes or both?

   In my music therapy private practice I provided individual sessions and group family sessions.

b. Do you require parental involvement during lessons and/or practice?

   I always included parents/caregivers in a short group session after the child's individual session.

c. Do your students have regular practice times and routines?

   I encouraged parents to participate in practice and music routines at home between sessions.

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

   I am no long actively working with children with ASD since my recent retirement.

e. Do you use print instructional materials with your students?

   Yes, I used print instructional and supplemental materials.

f. If so, what print instructional materials do you use?

   I frequently used Music for Little Mozart's Series (Authors: Barden, Kowalchyk, Lancaster; Publisher: Alfred Music).

g. Do you use electronic instructional materials with your students?

   I did not typically use electronic instructional materials, but I made use of apps for motivation during sessions.

h. If so, what electronic instructional materials do you use?

Apps such as Garage Band, and Easy Audio Recorder.

i. Do you create your own instructional materials or resources?

Yes**,** I have developed an unpublished method for piano instruction for children with ASD (The working title: *Piano Pizza: Teaching Piano to Children with Autism Spectrum Disorder*).

This method includes:

(1) a series of beginning piano pieces, each with words/pictures related to pizza.

(2) a series of pictures with rhythm patterns in which each picture (8 ½ x 11) depicts a piece of pizza, e.g., cheese pizza, pepperoni pizza, hamburger pizza, etc. Each pizza picture includes a rhythm, e.g., cheese pizza: half note followed by two quarter notes.

(3) a series of simplified worksheets for note recognition and rhythm patterns….I have found that almost all commercial worksheets move too fast and do not include enough repetition for most children with ASD.

j. If so, Please describe them.

See 3-I above.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

Not Applicable – I am a Board-Certified music therapist.

l. How often do you communicate with parents to discuss students' progress?

I met at least briefly with parents/caregivers after every individual session.

4. Music Counting Approaches

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

When working with children with ASD, I did not usually use a standard approach to music counting. I would describe my approach as a modified syllabic method.

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

Not Applicable.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

Yes.

d. If so, please describe.

I begin teaching counting early in the music therapy process before, or simultaneously and independently of when the student is first learning the names of the keys on the keyboard. In my approach I introduce the basic rhythm patterns with Pizza Picture cards as explained above in letter. "3.i." For example, a picture of a pizza (without any toppings) is paired with a picture of two quarter notes: Piz-za. The child learns to clap two quarter notes and say in rhythm: "Piz-za." Then other rhythm patterns are gradually introduced, e.g. "Cheese Pizza" (half note, quarter note, quarter note). After the student is very familiar with all of the "Pizza Rhythms," and can clap or play them on a rhythm instrument, I pair the "pizza words" with names of the notes, e.g. "Cheese Pizza" becomes "Half Note, Quarter, Quarter" chanted or played in rhythm by introducing basic rhythm patterns with Pizza Picture cards as explained above in letter "3.i."

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

None other than my Pizza Picture cards (see letter 4-d above).

f. If so, please describe them.

See letter 4-d above.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

I used clapping and moving the body with steady beats to instrumental recorded music.

5. Music Counting

Sections 4 and 5 of the questionnaire focus on pedagogical practices in teaching music counting to piano students with autism spectrum disorder. These sections include questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

Meter was one of the last concepts I attempted to teach to students with ASD. I would have them clap and move to music in various meters, but from the very beginning of my work with them, but I did not use the label "meter." I found that most children were able to "feel" the meter and eventually adjust to it without my teaching it as an intellectual concept. An exception was with clients functioning at a high level who were eventually able to understand the meaning of this term.

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

I taught the concept of rhythm as explained above in letter 3-i. I used the term "rhythm" in presenting "pizza rhythms," but other than that I did not explain the meaning of "rhythm."

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

   I used the terminology "steady beat" for my clients with ASD. They learned about this concept by clapping, moving, and playing instruments to a steady beat.

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

   I incorporated clapping, singing, chanting, and playing rhythm instruments on a regular basis in teaching meter, rhythm, and steady beat to my clients with ASD.

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

   I frequently used games to teach and reinforce the concepts of music counting. For example, after students learned the rhythm patterns on the Pizza Picture cards, I would put several pizza cards face up on a table or the floor and then clap and chant one of the pizza rhythms. Students would retrieve the card with that rhythm. We would continue the "game" until the client had all of the cards. I would often reverse the process and ask

students to clap or play the rhythm on a card, and it would be my turn to retrieve a card. Another enjoyable activity was putting a short sequence of pizza cards in a horizontal line and challenging students to play the sequence using a drum or other rhythm instrument.

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

   For me one of the challenges in teaching music counting was in knowing when to move to traditional counting using numerical notation. For example, knowing when to move from "pizza rhythms" to "names of note values" to "counting with numbers," e.g. "Cheese Pizza" moves to "Half Note, Quarter, Quarter" moves to "1 2 3 4."

g. Can you please describe solutions that you use to overcome these challenges?

   I found that careful observation and patience guided me in the challenge of determining the most appropriate time to move from one stage to the next in the gradual move to using numerical notation. I attempted to be aware of small changes as the client made progress and to pay close attention for any signs of frustration or anxiety in the student. I also had to accept the fact that some clients would most likely never be able to move to traditional music counting.

h. Do you have any other thoughts you would like to add?

Even though there may be some similarities in children with ASD, each child is an individual and moves at his or her own rate. As a teacher it is important to "tune into" and respect the learning style and rate of each student. A teacher's frustration can often be sensed by the student and will usually present a barrier to progress.

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

Less experienced teachers should seek to learn as much as they can about ASD. In addition, seeking some supervision from more experienced teachers or taking a course in teaching music to students with ASD can be extremely helpful.

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

Section 6 of the questionnaire focuses on pedagogical practices in teaching music counting notation to piano students with autism spectrum disorder. This section includes questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

a. How do you introduce students to rhythmic notation?

I teach symbolic rhythmic notation by using a developmental approach.

(1) Introduce rhythm patterns with Pizza Picture cards. Each picture card depicts a piece of pizza, e.g., cheese pizza, pepperoni pizza, hamburger

pizza, etc. Learn to say the words and clap or play these rhythms on one piano key/cluster or rhythm instrument.

(2) Add pictures of note values to the Pizza Picture cards, e.g., cheese pizza – half note followed by two-quarter notes. Learn to chant the words of the note values and clap and play the rhythms on one piano key/cluster or rhythm instrument.

(3) Remove the pizza pictures and only show the note values. Learn to chant the words of the note values (without the pizza pictures) and clap and play the rhythms on one piano key/cluster or rhythm instrument.

(4) Eventually add numbers underneath the notes on the cards, and begin counting the rhythm patterns. Overall, the procedure is to move from pictures of different types of pizza to pictures of notes with different note values, to numerical counting of rhythms within a measure.

b. Do you introduce rhythmic notation separately from pitch notation?

I introduce rhythmic notation early in the music therapy process – before, or simultaneously and independently from learning names of keys on the keyboard.

c. Do you use only printed method books or printed theory books (or a combination of both) to teach rhythmic notation?

I began by using my own teacher-made materials and then introduced printed method and theory books to teach rhythmic notation.

d. Do you use online resources to teach rhythmic notation?

I usually do not use online resources with students with ASD to teach rhythmic notation. An exception to that would be selected apps that can be used under supervision of the parent/caregiver or teacher.

e. Do you create your own materials to teach rhythmic notation?

Yes – Pizza Picture cards and rhythm worksheets.

f. Do you use any games or activities to teach or reinforce rhythmic notation?

Yes – as described in letter 5-e above.

g. Please describe any other procedures or materials you use to teach rhythmic notation to students with autism spectrum disorder.

I used a wide variety of movement activities to teach, enhance, and reinforce rhythmic notation and rhythmic concepts.

7. Additional Information on Teaching Music Counting to Students with Autism Spectrum Disorder

Please add any additional information you wish about the process of teaching music counting to students with autism spectrum disorder.

Over the years I found that one of the most important teaching techniques was to look for even small changes and normal developmental growth in children with ASD and use that information to inform my work with clients.

Thank you for agreeing to participate in this study, and for offering your generous time and expertise to the author during this process.

CHAPTER 4

SUMMARY AND CONCLUSION

The document consists of four chapters, a bibliography and appendices. Chapter one comprises the introduction, purpose and need for the study, limitations of the study, literature review, and design and procedures. Chapter two provides the methodology of the study. Chapter three includes transcripts of interviews with internally recognized piano professors and a music therapist regarding approaches for teaching music counting to students with ASD. Chapter four serves as a summary and conclusion for the study, providing recommendations for future research.

The purpose of the study was to collect information about teaching music counting to piano students with ASD and to determine best practices and pedagogical approaches that may be applied to current methods. The study included interviewing five professionals who are internationally and nationally recognized to successfully teach music counting to students with ASD and to learn their teaching approaches to this population specialized in teaching piano students with autism spectrum disorder.

The criteria for selecting the interview participants were 1) development and success of music programs for students with ASD, 2) breadth of publications, 3) workshops and presentations at local, state, national and international conferences. All five of the interview participants hold doctoral degrees in either piano pedagogy and/or performance, music education, or music therapy.

The interviews collected information on the backgrounds of the individuals being interviewed, studio demographics, teacher experience and training, and

educational curriculum, the pedagogical process, and instructional materials/technology used for teaching music counting during lessons. While there are a growing number of publications and online resources for music and special education and music pedagogy for students with ASD, there are no comprehensive resources for piano teachers regarding teaching music counting to students with ASD.

For the completion of the interview, the researcher summarized the interview answers to identify the best practices used by each individual and determine pedagogical methods in teaching music counting to piano students with ASD. The summary of the study identifies the purpose of each section in the interview, the number of responses received for each question, and an ultimate summary of each question and section to identify the best teaching practices. All interview transcripts are included in Chapter 3. In the following summary, each of the respondents were assigned a title of "Respondent number X" and presented in random order to ensure privacy and anonymity. The names of the following individuals, related programs, and universities were redacted from the interview responses to ensure their anonymity:

Dr. Scott Price

Professor of Piano and Piano Pedagogy; Coordinator of Piano Pedagogy at the University of South Carolina

Founder and Creator the Carolina LifeSong Initiative

Dr. Derek Polischuk

Professor of Piano and Director of Piano Pedagogy at Michigan State University College of Music

Founder and Director of Celebrating the Spectrum

Dr. Melissa Martiros

Assistant Professor of Music at Anna Maria College

Founder and Dean, OpporTUNEity Music Program

Dr. Beth Bauer

Guest Lecturer in Pedagogy at Wheaton College Conservatory of Music

Piano Faculty at Wheaton College Community School for the Arts

Founder of Beethoven's Buddies Music Program

Dr. Jennie Band

Board-certified music therapist and licensed professional counselor/supervisor

CHAPTER 5

SUMMARY OF INTERVIEW TRANSCRIPTS

Section one of the interview comprises 5 questions regarding the teaching background of the individuals.

1. Background

a. How long have you been teaching students with autism spectrum disorder?

Respondent 1 has been teaching students with ASD for 20 years.

Respondent 2 has been teaching students with ASD for 15 years.

Respondent 3 has been teaching students with ASD for 10 years.

Respondent 4 has been teaching students with ASD for 20 years.

Respondent 5 has been teaching students with ASD for 50 years.

b. What prompted you to begin teaching students with autism spectrum disorder?

Respondent 1 was referred by a local piano dealer in the community for parents who had a blind child with autism.

Respondent 2 started teaching students with ASD in a group piano class, working with graduate students at University.

Respondent 3 experienced that teaching students with ASD was difficult without teaching methods and pedagogical resources in a community school and then decided to study this field.

Respondent 4 determined teaching students with ASD after changing a major due to nerve damage.

Respondent 5 was interested in teaching students with ASD in music education class.

c. What resources did you consult to begin teaching students with autism spectrum disorder?

Respondent 1 found music therapy and special education resources by contacting local music therapists working with students with ASD.

Respondent 2 started reading the number of articles relating to special education and psychology literature.

Respondent 3 used standard piano method books, creating their own materials that depend on their functioning levels for students with ASD.

Respondent 4 utilized special education materials.

Respondent 5 consulted numerous music education resources.

d. What educational process or training did you undertake to begin teaching students with autism spectrum disorder?

Respondent 1 had no training because this field was new in piano pedagogy, The respondent gathered information from parents, teachers, and therapists and took specific notes and recordings of lessons.

Respondent 2 read all literature regarding this area and collaborated with colleagues.

Respondent 3 became an Applied Behavior Therapist with students with ASD and communicated with their parents.

Respondent 4 worked on a doctoral dissertation in music education and special education.

Respondent 5 studied this field through degree programs and hands-on experiences.

e. What other special needs (i.e. ADD/ADHD, Down syndrome etc.) do you address in your teaching, and in your studio or educational program?

Respondent 1 taught students with ASD, Down syndrome, ADD/ADHD, hearing impairments, vision impairments, and developmental delays.

Respondent 2 taught students with ADD/ADHD.

Respondent 3 taught students with ADD/ADHD, visual and hearing impairments, and physical impairments.

Respondent 4 taught students with ADHD, dyslexia, dyspraxia, aphasia, Fragile X, Down syndrome, learning disabilities, optic nerve hypoplasia, missing corpus callosum, hearing disorders, blind, CP.

Respondent 5 taught students with Specific Learning Disorders, Emotional/Behavioral Disorders, Attention-Deficit Disorders. Anxiety Disorders.

2. Student Population

a. How many students with autism spectrum disorder do you currently teach in your studio or program?

Respondent 1 has nine students with ASD.

Respondent 2 has two students with ASD.

Respondent 3 has three students with ASD.

Respondent 4 has over 40 students with ASD.

Respondent 5 had approximately 22 students with ASD.

b. What are the ages of students with autism spectrum disorder that you teach?

Respondent 1 has taught students with ASD from ages from seven to adulthood.

Respondent 2 has taught an 11-year-old and a 22-year-old with ASD.

Respondent 3 has taught students with ASD from ages from eight to twelve.

Respondent 4 has taught students with ASD from ages four to forty-five.

Respondent 5 taught students with ASD from ages from three to twenty-one.

c. What is the gender ratio of male and female students with autism spectrum disorder currently studying in your studio or program?

Respondent 1 has all male.

Respondent 2 has one male and one female.

Respondent 3 has all male.

Respondent 4 has primarily male.

Respondent 5 had primarily male.

d. How many of your students with autism spectrum disorder do you characterize as being at the low, middle, or high functioning levels?

Respondent 1 has had students with the low to mid-functioning levels.

Respondent 2 has students with high-functioning levels.

Respondent 3 has a student with a low functioning level.

Respondent 4 prefers not to characterize exact function levels, though they are informed by parents as to the child's function level.

Respondent 5 has students who have been around 10% in low functioning levels, 80% in middle levels, and 10% in high functioning levels.

e. How many of your students present with Asperger syndrome via DSM-IV criteria?

   Respondent 1 has one with a high-functioning level of Asperger syndrome.

   Respondent 2 has two students with Asperger syndrome.

   Respondent 4 prefers not to answer, saying that Asperger syndrome was no longer acknowledged in DSM-V.

   Respondent 5 has seen approximately 5-10% with Asperger syndrome.

f. What other special needs or co-morbid disorders do your students present with?

   Respondent 1 has students with developmental delays, fine motor skill delays, apraxia of speech, and speech delays.

   Respondent 2 doesn't have students with any comorbidity.

   Respondent 3 has students with ADD/ADHD/Sensory issues.

   Respondent 4 has students with ADHD, math disabilities, anxiety, depression, dyslexia, and Down syndrome.

   Respondent 5 has had students with Specific Learning Disorders, Emotional/Behavioral Disorders, Attention Deficit Disorders, and Anxiety Disorders.

3. Curriculum

a. Do you teach private lessons or group classes or both?

   Respondent 1 teaches students with ASD in private lessons.

Respondent 2 teaches students with ASD in private lessons.

Respondent 3 teaches students with ASD in private lessons.

Respondent 4 teaches students with ASD in private lessons and group classes.

Respondent 5 teaches students with ASD in private lessons and group classes.

b. Do you require parental involvement during lessons and/or practice?

Respondent 1 requires that parents are present during lessons and they assist with practicing at home.

Respondent 2 requires parental involvement during lessons and practice.

Respondent 3 doesn't require parents to attend the lessons for students with ASD who are independent, but at the beginning of the lesson, parental involvement is required for them. Other students with ASD need parental help in lessons.

Respondent 4 requires parental involvement during lessons and during practice time.

Respondent 5 requires parental involvement during group classes.

c. Do your students have regular practice times and routines?

Respondent 1 says that students with ASD have regular practice times and specific learning routines in the five-step plan.

Respondent 2 says that students with ASD have a regular practice times and routines every week.

Respondent 3 says that students with ASD have regular practice routine.

Respondent 4 says that students with ASD have regular practice times and routines.

Respondent 5 says that students with ASD have regular practice times and routines with parents.

d. What levels (i.e. elementary, intermediate, late intermediate etc.) of students with autism spectrum disorder do you currently teach?

Respondent 1 teaches students with ASD from elementary to advanced levels.

Respondent 2 teaches students with ASD from intermediate to advanced levels.

Respondent 3 teaches students with ASD from elementary to intermediate levels.

Respondent 4 teaches students with ASD at all levels.

e. Do you use print instructional materials with your students?

Respondent 1 has used print instructional materials.

Respondent 2 has used print instructional materials.

Respondent 3 has used print instructional materials.

Respondent 4 has used print instructional materials.

Respondent 5 has used print instructional materials.

f. If so, what print instructional materials do you use?

Respondent 1 has used Alfred's Premier Piano Course and Piano Adventures, the Royal Conservatory Celebration series and lots of supplementary material, sheet music, and holiday music, including an improvisation curriculum.

Respondent 2 has used a standard piano repertoire.

Respondent 3 has used Piano Adventures's Disney books, Alfred's Premier Piano Course books and Music for Little Mozarts books.

Respondent 4 has used various-Faber, Alfred, and John Schaum books.

Respondent 5 has used Music for Little Mozart's Series (Authors: Barden, Kowalchyk, Lancaster; Publisher: Alfred Music.

g. Do you use electronic instructional materials with your students?

Respondent 1 doesn't use electronic instructional materials.

Respondent 2 doesn't use electronic instructional materials.

Respondent 3 has used electronic instructional materials.

Respondent 4 has used electronic instructional materials.

Respondent 5 has used electronic instructional materials.

h. If so, what electronic instructional materials do you use?

Respondent 3 has used applications on reading notes and rhythm practice for iPad.

Respondent 4 has used YouTube and iPad games.

Respondent 5 has used applications on Garage Band, and Easy Audio Recorder.

i. Do you create your own instructional materials or resources?

Respondent 1 creates own instructional materials or resources.

Respondent 2 doesn't create own instructional materials or resources.

Respondent 3 creates own instructional materials or resources.

Respondent 4 creates own instructional materials or resources.

Respondent 5 creates own instructional materials or resources.

j. If so, please describe them.

Respondent 1 has used an improvisation curriculum, composing music.

Respondent 3 has used flash cards and color-coding.

Respondent 4 has used lesson materials (flashcards) written for each student.

Respondent 5 has used Piano Pizza: Teaching Piano to Children with Autism Spectrum Disorder by helping students with ASD recognize rhythms such as cheese pizza: half note followed by two quarter notes.

k. Do your students work with a music therapist outside of, or in collaboration with their piano lessons?

Respondent 1 has worked with a music therapist and in collaboration with their piano lessons, which helps and aids in the respondent's curriculum by gaining life skills from the music therapist.

Respondent 2 has worked with both of them.

Respondent 3 says that one of the students works with a therapist.

Respondent 4 doesn't work with a music therapist in collaboration with their piano lessons.

Respondent 5 does not apply to this question.

l. How often do you communicate with parents to discuss students' progress?

Respondent 1 has communicated with parents to discuss students' progress weekly, and this communication reports how well they progressed in lessons by using emails or text message or phone.

Respondent 2 has communicated with parents to discuss students' progress every week at the lesson.

Respondent 3 has frequently communicated with parents to discuss students' progress to determine students' challenges during the lesson, and this communication makes a good relationship with students with ASD.

Respondent 4 has communicated with parents to discuss students' progress every week at the lesson.

Respondent 5 has a short meeting to discuss students' progress with parents after the lesson.

Section 4 of the questionnaire focuses on pedagogical practices in teaching music counting to piano students with autism spectrum disorder.

Music Counting Approaches

a. Do you use standard approaches to teach music counting to students with autism spectrum disorder (i.e. nominative, unit, metric, and syllabic counting or other)?

Respondent 1 uses metric approach and directive words.

Respondent 2 uses syllabic counting.

Respondent 3 uses syllabic counting.

Respondent 4 uses syllabic counting.

Respondent 5 uses own approaches as a modified syllabic method.

b. If you use one of these counting approaches, please describe how it is implemented in the lesson.

Respondent 1 uses the five-step plan learning and practice routine. Especially step number three requires students with ASD to learn the

rhythm and how to count by doing musical activities, such clapping and singing.

Respondent 2 uses counting out loud to identify rhythms in a lot of repetitions, which are similar to students who are not on the autism spectrum disorder.

Respondent 3 teaches rhythms along with singing and say specific words: the quarter note (Ta) 8th note (Ti) Half note (Ta-ah), requiring a lot of repetitions of recognizing accuracy and precise rhythms.

Respondent 4 uses Kodaly ta and ti-ti system.

Respondent 5 teaches counting at the beginning of the lesson by introducing the basic rhythm patterns with Pizza Picture cards (ex. Pizza, and Cheese Pizza). "Piz-za" indicates two quarter notes. To identify this rhythm students with ASD clap two quarter notes and say in rhythm (Piz-za), and "Cheese Piz-za" becomes "Half Note, Quarter, Quarter" chanted or played in rhythms.

c. Do you use alternate approaches to teaching music counting to students with autism spectrum disorder?

Respondent 1 uses alternate approaches to teaching music counting to students with ASD.

Respondent 2 doesn't use alternate approaches to teaching music counting to students with ASD.

Respondent 3 uses alternate approaches to teaching music counting to students with ASD.

Respondent 4 doesn't use alternate approaches to teaching music counting to students with ASD.

Respondent 5 doesn't use alternate approaches to teaching music counting to students with ASD.

d. If so, please describe.

Respondent 1 uses directive words, which are detailed words that describe what the students will have to do with their body to make the sound at the piano. For example, a quarter, quarter, half note pattern, the directive words would be play, play, play-hold or touch, touch, touch-hold.

Respondent 3 uses rhythmic cards to introduce different rhythms by singing the rhythms in 2/4, 3/4, and 4/4 meter, repeating after me.

e. Do you use supplementary instructional materials or technology to teach music counting to students with autism spectrum disorder?

Respondent 1 uses supplementary instructional materials to teach music counting to students with ASD.

Respondent 2 doesn't use supplementary instructional materials or technology to teach music counting to students with ASD.

Respondent 3 uses supplementary instructional materials to teach music counting to students with ASD.

Respondent 4 doesn't use supplementary instructional materials or technology to teach music counting to students with ASD.

Respondent 5 uses supplementary instructional materials to teach music counting to students with ASD.

f. If so, please describe them.

Respondent 1 uses teacher models/demonstrations or any recordings that come with the lesson materials.

Respondent 3 uses simple flashcards to reinforce music counting with rhythms, and the important thing for music counting is to slow down the pace when they feel the rhythms in the meter.

Respondent 5 uses hand drums and work away from the piano.

g. Please describe in detail any preparatory curricular measures you use to prepare students with autism spectrum disorder to begin learning music counting.

Respondent 1 provides that the improvisation curriculum helps students with ASD understand and acquire musical concepts aurally, physically, and visually, which are learned before they approach the label in the books.

Respondent 2 uses clap and count rhythmic examples by demonstrating them and reviewing what students with ASD have learned about the rhythms every lesson.

Respondent 3 introduces basic rhythms with flashcards and demonstrates what students with ASD will play while they are observing teacher activity and listening to the rhythms and then they try to clap back with numerous repetitions for an understanding of accuracy rhythms and then the rhythmic practice is required at slow and fast tempos in singing and clapping together.

Respondent 4 says that preparing students with ASD to begin learning music counting is to depend on their functioning levels.

Respondent 5 asks the student with ASD to clap and move the body with steady beats to instrumental recorded music.

Section 5 of the questionnaire includes questions about pedagogical approaches in teaching meter, rhythm, and steady pulse.

Music Counting

a. How do you approach explaining and teaching concepts of meter to your students with autism spectrum disorder?

Respondent 1 explains teaching concepts of meter with directive words and talks about big beats by modeling and improvising duets with students with ASD because these activities help them comprehend the rhythms aurally and physically and completely grasp the concept of meter.

Respondent 2 demonstrates the meters and to have them experience how the meters sound in music, but the respondent doesn't want to do this activity a lot.

Respondent 3 for explaining and teaching concepts of meter to students with ASD divides into three steps: 1. Demonstration 2. Doing 3. Correcting. The most essential way is to demonstrate what the 3/4 meter feels like, the 6/8 meter feels like and students' physical responses to identify between a simple triple meter and a compound duple meter.

Respondent 4 uses flashcards for explaining and teaching concepts of meter to students with ASD and then transfer to the score and music.

Respondent 5 reports that meter is one of the last concepts to teach to students with ASD. For explaining and teaching concepts of meter to

students with ASD, the respondent tries to clap and move to music in a variety of meters and they will be able to feel the meter.

b. How do you approach explaining and teaching concepts of rhythm to your students with autism spectrum disorder?

   Respondent 1 explains and teaches concepts of rhythm used in the same way through directive words, improvisation, and improvising duets with students with ASD.

   Respondent 2 requires listening to music in various rhythms and playing music in them.

   Respondent 3 first explains and teaches concepts of rhythm to students with ASD by looking at symbols, such as quarter note or a half note in their repertoire and the respondent uses a syllabic counting approach on the quarter note (Ta) and the half note (Ta-ah) and then has the students play the rhythms.

   Respondent 4 tries and does the rhythms without explanation and then plays the rhythms in the score.

   Respondent 5 teaches the concept of rhythm and says "rhythm" in different ways referred to as "pizza rhythms."

c. How do you approach explaining and teaching the concept of a steady pulse to your students with autism spectrum disorder?

   Respondent 1 uses directive words, improvisation, improvised duets, and modeling to explain and teach the concept of a steady pulse. The most

important thing is to understand the vocabulary and what a steady pulse means or a steady beat means.

Respondent 2 counts along with a steady pulse to students with ASD and have them count out loud while they play to feel a certain constraint of pulse consistency.

Respondent 3 tries to do sufficient repetitions to accomplish the correct steady beat when students with ASD are struggling with feeling the steady pulse.

Respondent 4 uses the example of a heartbeat for explaining the concept of a steady pulse to students with ASD.

Respondent 5 teaches the concept of a steady pulse to students with ASD by clapping, moving, and playing instruments to a steady beat.

d. Do you use additional methods to teach meter, rhythm, and a steady pulse to students with autism spectrum disorder (i.e. singing, chanting, and clapping etc.)?

   Respondent 1 uses singing, chanting, and clapping in a student-centered teaching to help students with ASD understand meter, rhythm, and counting.

   Respondent 2 uses clapping and singing to teach meter, rhythm, and a steady pulse to students with ASD.

   Respondent 3 uses singing and clapping with physical gestures to give students with ASD sensory input for an understanding of a meter, a rhythm, and a steady pulse.

Respondent 4 uses hand drums or rote teaching for meter, rhythm, and a steady pulse to students with ASD.

Respondent 5 combined clapping, singing, chanting, and playing rhythm instruments on a regular basis in teaching meter, rhythm, and steady beat to students with ASD.

e. What additional pedagogical strategies do you use to teach music counting to students with autism spectrum disorder?

Respondent 1 uses the directive words and lots of improvisation and additional pedagogical strategies to teach music counting to students with ASD.

Respondent 2 doesn't have any additional strategies to teach music counting to students with ASD.

Respondent 3 requires to be exposed to various repertoires, including music rhythms to teach music counting to students with ASD and sends videos to look at and listen to new pieces and then they can practice counting out loud during the lesson.

Respondent 4 doesn't have any additional strategies to teach music counting to students with ASD.

Respondent 5 plays games to teach and reinforce the concepts of music counting with pizza cards and has pleasurable activity that puts a short sequence of pizza cards in a horizontal line. If students with ASD have difficulties and challenges from the sequence of the pizza cards, they play a drum or other rhythm instruments to recognize the rhythms correctly.

f. What challenges do you encounter when teaching music counting to students with autism spectrum disorder?

Respondent 1 encounters challenges to teach music counting to students with ASD due to developmental delays.

Respondent 2 overcomes challenges that come from any tempo changes by counting along with students with ASD, playing along with them, and getting them to learn and experience different tempi.

Respondent 3 states that students with ASD have challenges on learning complex rhythms that are mixed in quarter notes, half notes, dotted half notes, whole notes, and even 16^{th} notes, so the respondent uses syllabic counting by doing a lot of repetition, involving meter changes.

Respondent 4 is not applicable to this question.

Respondent 5 uses own counting approaches and encounters due to challenges in moving from one system to another.

g. Can you please describe solutions that you use to overcome these challenges?

Respondent 1 uses directive words and improvisation to teach music counting to students with ASD who have fine motor skill deficiencies. To overcome these challenges, the respondent utilizes layering of finger numbers and directive words to physically produce sounds at the piano.

Respondent 2 mentions this answer in question f: changing tempos from a regular tempo to a fast tempo because they are accustomed and used to certain tempos and music counting that they have learned in lessons.

Respondent 3 indicates an effective way to confront challenges of meter changes, using a syllabic counting approach through voluminous repetitions.

Respondent 4 is not applicable to this question.

Respondent 5 notices that careful observation leads them to a challenge of determining the optimal time to move from one step to the next in a gradual shift using numeric notation. The respondent observes small changes in frustration or anxiety as the student progresses. The respondent has to accept the fact that some students with ASD cannot be able to move to traditional music counting.

h. Do you have any other thoughts you would like to add?

Respondent 1 mentions that layering of various concepts leads to difficulty in teaching music counting. Before piano teachers add a variety of musical activities, they need to actually teach students the meaning of words or teach them the real words and their meanings.

Respondent 2 is not applicable to this question.

Respondent 3 is not applicable to this question.

Respondent 4 is not applicable to this question.

Respondent 5 states even though there may be some similarities in students with ASD, each student with ASD is an individual and moves at his or her own pace. As a teacher, it is important to “tune into” and respect each student’s learning style. The teacher’s frustration is often perceptible to their students and is usually an obstacle to progress in learning music.

i. What advice do you have for less experienced teachers in approaches to teach music counting to students with autism spectrum disorder?

Respondent 1 recommends against overlapping too many concepts and activities during lessons. When teaching vocabulary to students with ASD, teachers need to make sure their students with ASD understand the meaning of the words and they should teach them how to teach music counting in a step-by-step process. The respondent thinks that if the process fits well, the lesson works overall for all of the students with ASD.

Respondent 2 indicates that some students with ASD generally have more natural rhythmic sense than traditional students, which means they are better at rhythms than the traditional students.

Respondent 3 asserts the major thing to students with autism is not to focus on specific teaching methods of recognizing rhythms. Teachers need to build a solid foundation on teaching music counting with their students with ASD so that they can prepare for working on rhythms with steady/slow/fast tempi. Thus, the teachers continually need to research on ASD because every student with ASD has different personalities and characteristics.

Respondent 4 states to try and keep trying until something works. There is no one correct answer that applies to all students with ASD.

Respondent 5 mentions that less experienced piano teachers need to try to learn as much as possible about ASD. Moreover, it can be helpful to have a more experienced teacher or to take a course to teach music counting to students with ASD.

6. Pedagogical Practices to Teach Symbolic Notation to Students with Autism Spectrum Disorder

Section 6 of the questionnaire focuses on pedagogical practices in teaching music counting notation to piano students with autism spectrum disorder.

a. How to you introduce students to rhythmic notation?

Respondent 1 uses a wide range of improvisation approaches, and these methods make students with ASD recognize sounds aurally, physically, and visually at the piano. After being firmly grounded in the concept through improvisation, the teacher shows them what music notation labels look like when they open the book up or write the concept down on the scores.

Respondent 2 teaches symbolic notation to students with ASD, having them clap and count rhythmic examples and then learn from scores.

Respondent 3 uses flashcards and follows learning sequences of typical piano teaching method books to teach symbolic notation to students with ASD.

Respondent 4 uses various flashcards to teach symbolic notation to students with ASD.

Respondent 5 teaches symbolic notation to students with ASD, using a developmental approach in four steps. The first step is to introduce rhythm patterns with picture cards, the second step is to add pictures of note values to the picture cards, the third step is to remove the pictures and only show the note values, and the last step is to finally add numbers underneath the notes on the cards, and begin counting the rhythm patterns.

b. Do you introduce rhythmic notation separately from pitch notation?

   Respondent 1 doesn't introduce rhythmic notation separately from pitch notation because the students may not connect it in their thinking.

   Respondent 2 doesn't introduce rhythmic notation separately from pitch notation.

   Respondent 3 tries to introduce rhythmic notation in different concepts by using various kinds of flashcards and activities, then to work on several different pitches and merge them into pieces of the student's repertoire.

   Respondent 4 doesn't introduce rhythmic notation separately from pitch notation.

   Respondent 5 introduces rhythmic notation early in a lesson before students with ASD independently learn names of the keys on the piano.

c. Do you use only printed method books or printed theory books (or a combination of both) to teach rhythmic notation?

   Respondent 1 says that using only printed method books or printed theory books is up to students with ASD. Some students with ASD only use printed books. For a visually impaired student who is very low functioning, the respondent had access to Braille music materials. Students with ASD may use printed theory books as needed, but they may not understand the connection between books and the keyboard. Also, they may be able to recognize rhythmic notation aurally through improvisation.

   Respondent 2 uses a combination of printed method and theory books to teach rhythmic notation to students with ASD.

Respondent 3 uses a combination of printed method and theory books from Piano Adventures and Music for Little Mozarts.

Respondent 4 uses theory books that accompany lesson books to teach rhythmic notation to students with ASD.

Respondent 5 uses their own teacher-made materials and then introduces printed method and theory books to teach rhythmic notation.

d. Do you use online resources to teach rhythmic notation?

Respondent 1 generally doesn't use online resources to teach rhythmic notation because the online resources can distract students with ASD. The respondent prefers to teach rhythmic notation through improvisation, modeling, and other activities.

Respondent 2 doesn't use online resources to teach rhythmic notation to students with ASD.

Respondent 3 doesn't use online resources to teach rhythmic notation to students with ASD.

Respondent 4 doesn't use online resources to teach rhythmic notation to students with ASD.

Respondent 5 doesn't use online resources to teach rhythmic notation to students with ASD.

e. Do you create your own to teach rhythmic notation?

Respondent 1 creates directive words and an improvisation curriculum to teach rhythmic notation to students with ASD.

Respondent 2 doesn't use own materials for teaching rhythmic notation to students with ASD.

Respondent 3 doesn't use own materials for teaching rhythmic notation to students with ASD.

Respondent 4 doesn't use own materials for teaching rhythmic notation to students with ASD.

Respondent 5 uses picture cards and rhythm worksheets for teaching rhythmic notation to students with ASD.

f. Do you use any games or activities to teach or reinforce rhythmic notation?

Respondent 1 creates games and activities to catch their students' attention for teaching and reinforcing rhythmic notation.

Respondent 2 plays a simple game like a little competition for points to teach and reinforce rhythmic notation.

Respondent 3 plays copy games to teach and reinforce rhythmic notation. First, a teacher demonstrates rhythm examples with clapping and the teacher has a student with ASD clap to given rhythms. Also, they can play a matching game with various rhythms. These games will be done within five minutes.

Respondent 4 plays games and activities for teaching and reinforcing rhythmic notation to students with ASD.

Respondent 5 plays picture cards games in rhythm worksheets for teaching and reinforcing rhythmic notation to students with ASD.

g. Please describe any other procedures or materials you use to teach rhythmic notation to students with autism spectrum disorder.

Respondent 1 says that teachers need to perform different kinds of reinforcement tasks through repertoire, improvisation, and repetition.

Respondent 2 is not applicable to this question.

Respondent 3 is not applicable to this question.

Respondent 4 is not applicable to this question.

Respondent 5 uses a wide variety of movement activities to teach, enhance, and reinforce rhythmic notation and rhythmic concepts.

7. Additional Information on Teaching Music Counting to Students with Autism Spectrum Disorder

Please add any additional information you wish about the process of teaching music counting to students with autism spectrum disorder.

Respondent 1 says that layering is the principal problem, including layering of concepts, methodologies, and techniques. The respondent would advocate for creative music-making and improvisation as well as teaching musical concepts to students with ASD before they reach printed method books.

Respondent 2 says learning rhythms is not difficult for students with ASD.

Respondent 3 says that teaching music counting is all contextualized by students with ASD, so a variety of teaching methods and pedagogical approaches to music counting will make them creative and lead to a successful lesson.

Respondent 4 uses various special education books on teaching reading and math. What the respondent sees there applies to teaching music counting in piano pedagogy, and this process helps the respondent to do consistent study for teaching students with ASD.

Respondent 5 has discovered that one of the most crucial teaching methods is finding and exploring small changes and normal developmental growth in students with ASD and utilizing that information to inform work with them.

CHAPTER 6

CONCLUSION

Interview responses gathered from five interviewees regarding the process of teaching music counting to students with ASD provide the following summary results:

- The use of printed instructional books is effective and practical in teaching music counting to students with ASD.

- The use of a syllabic counting system, such as “Ta-ah, Ti-ti” helps students with ASD understand and decode rhythms and note values.

- The use of rhythmic flashcards, teacher models, and demonstrations helps students with ASD to reinforce and develop music counting with a variety of rhythms.

- The use of clapping, singing, chanting, and playing rhythmic instruments may be integrated to teach music counting to students with ASD, recognizing and identifying meters, rhythms, and steady beats.

- The use of directive words, such as “Touch, touch, touch-hold” for “C, D, E-hold” helps students with ASD to comprehend music counting and feel rhythms aurally and physically.

- The use of color-coding benefits some students with ASD to identify and label easily note values and rhythms.

- The use of improvisation and improvisation with teacher duets aids students with ASD to be aurally, physically, and kinesthetically acculturated to a sound vocabulary as well as to incorporate separate musical concepts.

- The use of an abstract music counting approach and method makes students with ASD frustrated and discouraged.

- An emphasis on teaching symbolic notation to students with ASD is to discover and explore how to connect visual and aural aspects in music counting. Based on the interview responses and results, differing approaches to teaching music counting to piano students with ASD are needed to further develop best practices and pedagogical approaches.

The study author is grateful to the five individuals who participated in the study for their assistance in proving valuable pedagogical information, and for their assistance in the presentation of the results of the study.

CHAPTER 7

RECOMMENDATIONS FOR FURTHER RESEARCH

Researchers in a piano pedagogy field should continue to explore effective and pedagogical methods and approaches to teaching music counting to students with ASD. Other evidence-based best practices with technology that will help students with ASD engage in lessons and improve counting awareness and perception are needed as visual and aural aids and supports.

In future studies, researchers can involve additional teaching strategies including the use of technology within symbolic notation of music counting and comparing responses and results with effectiveness of utilizing technology with teacher teaching methods. Moreover, academic curricula at colleges are encouraged to provide teacher training to their students and to the community, and to provide adaptive music learning experiences for enrolled students and for the community.

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APPENDIX A

IRB APPROVAL

OFFICE OF RESEARCH COMPLIANCE

INSTITUTIONAL REVIEW BOARD FOR HUMAN RESEARCH
DECLARATION of NOT RESEARCH

Sunghun Kim
113 Ashford Way
Lexington, SC 29072 USA

Re: **Pro00100117**

Dear Mr. Sunghun Kim:

This is to certify that research study entitled ***Approaches to Teaching Music Counting to Piano Students with Autism Spectrum Disorder*** was reviewed on **6/16/2020** by the Office of Research Compliance, which is an administrative office that supports the University of South Carolina Institutional Review Board (USC IRB). The Office of Research Compliance, on behalf of the Institutional Review Board, has determined that the referenced research study is not subject to the Protection of Human Subject Regulations in accordance with the Code of Federal Regulations 45 CFR 46 et. seq.

No further oversight by the USC IRB is required. However, the investigator should inform the Office of Research Compliance prior to making any substantive changes in the research methods, as this may alter the status of the project and require another review.

If you have questions, contact Lisa M. Johnson at lisaj@mailbox.sc.edu or (803) 777-6670.

Sincerely,
Lisa M. Johnson
ORC Assistant Director and IRB Manager

APPENDIX B

INVITATION TO PARTICIPATE

Permission for Interview

Dear _____,

Thank you for agreeing to participate in my dissertation research on teaching music counting to students with autism spectrum disorder. What follows is specific information about the study including informed consent, use of interviews, and risks and/or benefits of participating in the study.

The purpose of this dissertation, "Approaches to Teaching Music Counting to Piano Students with Autism Spectrum Disorders," will be to interview five internationally and national recognized professionals currently teaching piano to students with autism spectrum disorder, and explore their approaches to teaching music counting to students with ASD. The following process will be conducted in the interview:

The interview will be conducted at a date and time of your choosing.

The interview will be conducted by the method of choice: phone, email, Skype, FaceTime, in person, or by any other means you desire.

The interview will be recorded for aid in transcription. The recording will be stored on a password-protected device for two years after which it will be erased.

The interview questionnaire will be sent by email to the participants prior to the interview.

The study carries no benefits, and poses minimal risk to you, with the sole potential risk consisting of the possibility of disclosure of identity.

Identifying information will be removed from the transcript.

Participants will have final approval of the interview transcript before submission of the dissertation.

Beyond the dissertation copy that will be shelved in the University of South Carolina library, further publication will not be pursued without your permission.

I,_____, grant Sunghun Kim permission to interview me for the purposes stated in this letter.

Thank you for your consideration of this request.

Sincerely yours,

Sunghun Kim

APPENDIX C

FINAL TRANSCRIPT APPROVAL

Final Interview Transcript Acceptance

I, Dr. Scott Price, approve this final version of the interview transcript for inclusion in the dissertation.

Your anonymity will be maintained in the interview transcription and analysis of the results.

No further use of the interview transcriptions will occur without your permission.

Signature  Date 10/5/21

Final Interview Transcript Acceptance

I, Dr. Jennie Band, approve this final version of the interview transcript for inclusion in the dissertation.

I will maintain anonymity in the interview transcription and analysis of the results.

No further use of the interview transcriptions will occur without your permission.

Signature Jennie P Band Date 10/7/21

Final Interview Transcript Acceptance

I, Dr. Beth Bauer, approve this final version of the interview transcript for inclusion in the dissertation.

I will maintain anonymity in the interview transcription and analysis of the results.

No further use of the interview transcriptions will occur without your permission.

Signature Beth Bauer Date 10/08/21

Final Interview Transcript Acceptance

I, Dr. Derek Polischuk, approve this final version of the interview transcript for inclusion in the dissertation.

I will maintain anonymity in the interview transcription and analysis of the results.

No further use of the interview transcriptions will occur without your permission.

Signature *Derek Polischuk* Date *10/09/21*

Final Interview Transcript Acceptance

I, Dr. Melissa Martiros, approve this final version of the interview transcript for inclusion in the dissertation.

I will maintain anonymity in the interview transcription and analysis of the results.

No further use of the interview transcriptions will occur without your permission.

Signature Melissa Martiros Date: 10/13/2021