A STUDY OF NOVICE SPECIAL EDUCATION TEACHERS’ PREPARATION TO TEACH STUDENTS WITH AUTISM SPECTRUM DISORDERS

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The purpose of this study is to identify novice teachers’ perception of their preparedness to teach a class designed for students with autism spectrum disorder (ASD) after graduation from a traditional university-based special education program or from a special education alternative certification program. Teacher preparedness and the need for highly qualified teachers of students with ASD are relevant topics, as the prevalence rate of ASD continues to increase. This phenomenological qualitative study explores novice teachers’ perceptions of preparedness to teach students with ASD and their knowledge about teaching students with ASD. Semi-structured, in-depth interviews were conducted with six novice special education teachers of students with ASD. Results indicated that novice teachers of students with ASD have knowledge of autism and evidence-based practices (EBP), which they ascertained primarily through experiences such as; working directly with students with ASD, however, preservice education programs provided the participants with cursory information related to knowledge of ASD and EBP.
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Eight years ago I was diagnosed with a Colloid Cyst in the third ventricle of my brain. I had major brain surgery and was not sure what would lie ahead. With a Master’s in Education and my whole life ahead of me, I knew there was something more. I found information about Project STARS and thought, “This is my something more.” I began my journey in a program that encompassed my love of learning and my passion for working with students with Autism Spectrum Disorders. I needed to know that my brain still worked. As this journey comes to an end, I graciously know that it does.

I never really imagined I would be writing a dissertation. With the original guidance I received as a preservice teacher from Dr. Juane Heflin, I was inspired to learn more. I was pushed to find out what else there was to know about children with Autism Spectrum Disorders. Dr. Bertina Combes intercepted me somewhere along the way and has been a guiding light throughout my doctoral program. Her support and belief in my potential kept me on the journey. I am appreciative of Drs. Smita Mehta, Lyndal Bullock, Ron Wilhelm, and Arminta Jacobson, for their time and support over the course of my doctoral program and the dissertation process.

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# TABLE OF CONTENTS

ACKNOWLEDGMENTS ................................................................................................................................. iii

A STUDY OF NOVICE SPECIAL EDUCATION TEACHERS’ PREPARATION TO TEACH STUDENTS WITH AUTISM SPECTRUM DISORDERS ................................................................. 1

  Introduction ........................................................................................................................................ 1
  Teacher Preparation in ASD ............................................................................................................... 2
  Evidence-Based Practices and ASD ........................................................................................................ 4

Purpose of the Study ................................................................................................................................. 5

Methods .................................................................................................................................................. 6

  Participants ........................................................................................................................................ 7
  Qualitative Coding ................................................................................................................................. 12

Limitations ............................................................................................................................................. 23

Future Directions .................................................................................................................................... 24

Declaration of Conflicting Interests ...................................................................................................... 25

Funding .................................................................................................................................................. 26

References .............................................................................................................................................. 26

NOVICE TEACHERS OF STUDENTS WITH AUTISM SPECTRUM DISORDERS: A SNAPSHOT AND SOME POINTERS FOR SUCCESS .............................................................. 32

  Introduction ...................................................................................................................................... 33
  Why Do Novice Teachers Choose to Teach Students with ASD? ........................................................ 34
  How Were Novice Teachers Prepared to Teach Students with ASD? .................................................. 35
  What are Teachers of Students with ASD Expected to Teach? .............................................................. 36

    Where Can Novice Teachers of Students with ASD Find Additional Resources and Support? ......... 38
      Create Classroom Routines ............................................................................................................ 38
      Incorporate Visual Strategies .......................................................................................................... 40
      Provide Choices When Possible .................................................................................................... 41
      Utilize Technological Resources .................................................................................................... 42
      Keep Language Simple and Concrete ............................................................................................. 43

  Final Thoughts ................................................................................................................................... 44

References .............................................................................................................................................. 45
APPENDIX A  EXTENDED LITERATURE REVIEW ............................................................. 55
APPENDIX B  DETAILED METHODOLOGY ........................................................................ 71
APPENDIX C  COMPLETE/UNABRIDGED RESULTS .......................................................... 85
APPENDIX D  RESEARCHER FIELD NOTES ..................................................................... 111
APPENDIX E  CODE BOOK .................................................................................................... 149
APPENDIX F  INSTITUTIONAL REVIEW BOARD DOCUMENTS ........................................... 152
APPENDIX G  INTERVIEW QUESTIONS ............................................................................. 157
COMPREHENSIVE REFERENCE LIST .................................................................................. 166
A STUDY OF NOVICE SPECIAL EDUCATION TEACHERS’ PREPARATION TO TEACH STUDENTS WITH AUTISM SPECTRUM DISORDERS

Introduction

Autism spectrum disorders (ASD) are characterized by an array of symptoms including disruptions in communication, restricted and ritualistic behavior, and difficulty with socialization (National Autism Center, 2009; Newschaeffer, Croen, Daniels et al., 2007; Schreibman, 2005). Prevalence rates of ASD are on the rise in the United States (CDC, 2012; King & Bearman, 2009; Rice, 2007). A report published by the Thomas Fordham Institute (Scull & Winkler, 2011) notes the number of children with autism quadrupled between the years of 2000-2001 and 2009-2010 from 93,000 to 378,000. The Centers for Disease Control and Prevention’s (CDC, 2012) latest report indicates one out of 88 American children are identified as having an ASD.

As prevalence rates for individuals with ASD increase (CDC, 2012; Fombonne, 2005; Kogan et al., 2009; National Autism Center, 2009; Rice, 2007; Saracino, Noseworthy, Steiman, Reisinger & Fombonne, 2010), the demand for qualified teachers to provide effective academic and functional instruction also increases (Callahan, Henson, & Cowan, 2008; Hess, Morrier, Heflin, & Ivey, 2008; Scheuermann, Webber, Boutot, & Goodwin, 2003; Simpson, 2005). Lerman, Vorndran, Addison, and Kuhn (2004) report an increased need for teachers who possess specific skills and competencies necessary to address the learning challenges of students with ASD.

The primary responsibility for developing special education teacher training resides with teacher preparation programs. This includes programs at Institutions of Higher Education (IHE), as well as Alternative Certification Programs (ACP). Both program types may find themselves challenged to provide training in skills and competencies to teach students with ASD, especially
given the structure of the current certification systems found in most states. Generic special education programs prepare teachers to work “generally” with all students across all categories of disability. A natural consequence of the shift to generic preparation is that special education preservice teachers may not be adequately prepared with the specialized skill-set necessary to effectively teach students with ASD.

Similarly, ACP prepare teachers through “general” course preparation, and do not incorporate specialized teaching methodologies identified as evidence-based interventions for children with ASD (Quigney, 2010; Rosenberg & Sindelar, 2005). Simpson, Mundschenk and Heflin (2011) further proliferate the explicit need for teachers of students with ASD to possess “a specialized knowledge and skill sets, but the trend is toward a cross-categorical and non-categorical teacher preparation” (p. 4).

**Teacher Preparation in ASD**

While No Child Left Behind (NCLB, 2002) requires general and special education teachers to have content area (e.g., math, science, social studies) expertise, concentration on standards for specific disability subcategories, such as ASD, has received less attention (Bauer, Johnson, & Sapona, 2004). In fact, authors of the National Comprehensive Center for Teacher Quality (2007) indicate only eight states have autism certification or endorsements as part of their teacher preparation programs. This status raises significant concerns for students with ASD and the quality of teachers who will serve them (Callahan et al., 2008).

NCLB (2002) guidelines specifically address teacher quality (Boe, Shin, & Cook, 2007), but teacher quality is associated directly with content knowledge. As a result, IHE are focusing curriculum in teacher preparation programs less on pedagogy and more on specific content
knowledge. The emphasis on content knowledge broadens the pool of teachers to those who may be proficient in subject knowledge, but may lack the finesse required to deliver effective instruction (Kaplan & Owings, 2003; McLeskey & Billingsley, 2008). McLeskey and Billingsley (2008) note the need for an expanding skill-set for special education teachers. Special education teachers need skills general education teachers may not possess, especially when working with students who have unique needs such as those with ASD. Brownell, Sindelar, Kiely, and Danielson (2010) argue teacher educators must “rethink what makes a quality special education teacher, and the process should be informed by the field’s history and by the trends in policy, service delivery, and research have shaped special education practice” (p. 358). The body of research, according to Brownell et al. (2010), supports the need for special education teachers to have content-specific knowledge, as well as knowledge about the challenges students with disabilities may have learning the content.

Research focused on the use of generic certification was initiated shortly after states began to implement non-categorical certification (Cobb, Powers, Elliott, & Voltz, 1989). In 2004, Cooley-Nichols noted 94% (n = 47) of states in the U.S. had shifted from categorical preparation (e.g., learning disabilities, mental retardation/developmental disabilities, emotional and behavior disorders, autism) at the preservice level to multi-categorical or generic preparation. Cooley-Nichols’ (2004) research explored the effect of the incorporation of research-based practices for students with emotional and behavior disorders into generic special education teacher preservice programs. Concern for the use of generically prepared teachers across all disability categories was more recently expressed by the National Council on Teacher Quality (2012) in their 2011 State Teacher Policy Yearbook:

State requirements for the preparation of special education teachers continues to be abysmal. Thirty-five states allow special education teachers to earn a completely generic
special education license to teach any special education students in any grade, K-12; this broad license is the only license offered in 19 of those states. (p. 3)

Apprehensions regarding generic teacher preparation tend to focus on whether such preparation is sufficient for delivering the specialized training needed to provide comprehensive programming for students with ASD (Scheuermann et al., 2003). Probst and Leppert (2008) suggest knowledge of characteristics of ASD, as well as knowledge of evidence based practices (EBP) be integrated into the curricula of teacher training programs. However, focus on high-incidence disabilities in preservice teacher preparation programs may leave topics related to ASD to be covered as a singular unit in the class (Simpson et al., 2011). As a result, preservice special education teachers may not be fully prepared to address the needs of students with ASD, especially those in self-contained classrooms.

\textit{Evidence-Based Practices and ASD}

Teachers of students with ASD should be both highly skilled and equipped with an arsenal of EBP to support students with ASD (Simpson et al., 2011). Competencies and skills outlined by the National Professional Development Center on Autism Spectrum Disorders (NPDC; Wong et al., 2014), the National Autism Center (2009) as well as those supported by research (Callahan et al., 2008; Scheuermann et al., 2003; Simpson, 2005; Simpson et al., 2011), propose the application of evidenced-based practices (EBP) in educating students with ASD. NCLB (2002) defines EBP as strategies supported by “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (p. 1964). In addition, Bain, Brown, and Jordan (2009) note the utilization of evidence-based outcomes is a federal mandate based on the NCLB (2002) and the Individuals with Disabilities Education Improvement Act (Bain et al., 2009; IDEIA, 2004;
Odom et al., 2010; Yell, Drasgow, & Lowrey, 2005). While there is no one specific treatment which has been established as universally effective for all students with ASD, a number of interventions have been marked as evidence-based and are considered best practices (Stahmer & Aarons, 2009).

The NAC’s National Standard’s Project (2009) identifies 33 interventions expressly designed for educating students with ASD considered “established” or “emerging” in a document titled, *Evidence-Based Practices and Autism in the Schools*. According to the document, it is unlikely “front line interventionists” (p. 38) will be experts in all 33 practices. Additionally, the NPDC (Wong et al., 2014) compiled a list of 27 EBP. There is an overlap between reports from NAC (2009) and NPDC (Wong et al., 2014) recommended practices, with many EBP on both lists, indicating continuity in the field. However, interventionists, including teachers, should become familiar with current research findings related to the practices to remain competent practitioners. Cook, Tankersley, and Harjusola-Webb (2008) explained special education teachers must refer back to their “professional wisdom” when choosing which EBP to implement, while maintaining the fidelity of the practice. The identification of EBP has brought about the need for highly trained and qualified professionals to implement these interventions (Hess et al., 2008; Scheuermann et al., 2003; Simpson, 2005).

**Purpose of the Study**

As prevalence rates of ASD increase, so will the need for qualified teachers who are knowledgeable regarding the characteristics of ASD and EBP for effective instruction. The role of IHE and ACP in disseminating this knowledge is critical. Although the use of EBP in special education classrooms (Burns & Ysseldyke, 2009; Sarakof & Sturmey, 2004; Sulzer-Azaroff,
Hoffman, Horton, Bondy & Frost, 2009) and the effectiveness of preservice preparation for special education teachers (Brownell, Ross, Colon & McCallum, 2005; Ferguson & Womack, 1993; Wilson, Floden, & Ferrini-Mundy, 2002) have been researched, little research has been conducted related to the teacher preparation of preservice teachers' to teach students with ASD (Bölte, 2014; Scheuermann et al., 2003). The purpose of the present study was to explore novice teacher’s perceptions of their preparedness to teach students with ASD and to examine their knowledge about ASD and EBP associated with teaching students with ASD. The present study was guided by the following research questions, which were employed to frame and navigate this qualitative study:

1) What do novice special education teachers of students with ASD know about ASD?
2) How do novice special education teachers describe EBP related to teaching students with ASD?
3) How do novice special education teachers describe their preservice training experiences related to ASD?

Methods

A qualitative research design was selected for this study, as qualitative research is “concerned with the nature, explanation and understanding of phenomena” (Ryan, Coughlan, & Cronin, 2009, p. 309). Specifically, in-depth, semi-structured interviews were utilized because they allow the researcher to explore participants’ experiences and interpretations, and uncover the “meaning structures that participants use to organize their experiences and make sense of their worlds” (Hatch, 2002, p. 91). Qualitative analysis is often used to investigate teachers and teacher development (Gall, Borg, & Gall, 1996). Additionally, qualitative analysis has been used to explore many aspects in the field of special education (Bratlinger, Jiminez, Klingner, Pugach,
& Richardson, 2005). However, there is little qualitative inquiry in the field of ASD (Bölte, 2014).

Participants

Participants were recruited using purposeful sampling. Novice teachers, those with three or fewer years of teaching experience (Barrett et al., 2002; Casey, Dunlap, Brister, & Davidson, 2011; Jones, 2009; Roberson & Roberson, 2008) were sought from school districts in north central Texas. Capitalizing on the power of social network recruiting, participants were also sought from sites, such as Facebook (Hirsch, Thompson, & Every, 2014). Nominated/snowball sampling, a method in which participants already in the study recommended other individuals to participate, (Gall, Borg, & Gall, 2003; Morse & Richards, 2002) was also utilized. In addition to meeting the definition of novice teacher, participants (a) hold generic teacher certification; (b) teach in the state of Texas; (c) teach in a classroom specifically designed for students with ASD; and (d) have not pursued advanced studies beyond the bachelor’s degree, if preservice training was in an IHE, or have not pursued advanced studies in an IHE related to autism if preservice training was received from an ACP. The first six individuals who expressed an interest in participating and who fit the criteria for the study were selected as participants. Table 1 summarizes the participants’ demographics.

Three participants graduated from a four-year institution with degrees in interdisciplinary studies. The remaining participants have degrees in behavior analysis, general studies, or physical education and participated in ACP to earn their teaching certification. Consistent with the definition of “novice” teachers, participants’ had between one and three years of experience
(Jones, 2009) in a classroom for students with ASD, with these being their initial teacher placements. Participants were assigned pseudonyms to ensure anonymity.

Introduction to Participants

Anne is a 39-year-old female, who is in her first-year of teaching students with ASD. Although she has not been in the classroom previously as a teacher, she has worked as a paraprofessional six years. Additionally, when she was in junior high, she began volunteering with a student who was blind. Her decision to pursue teaching in the field of ASD was assured when she had a son who was identified as a student with ASD. She also worked at the Autism Treatment Center, but, left when she felt intimidated by a 23-year-old with ASD. She continued following this population by working at local churches that supported students with special needs, and found herself drawn to the students with ASD. She graduated from an online-based four-year university program and received a degree in interdisciplinary studies with a specialization in special education. Anne was not required to participate in student teaching, as her university allowed her two years of paraprofessional experience to fulfill this requirement. The generalist certification provides her with the credentials to teach early childhood through twelfth grade. Her classroom, which is designed for students with ASD, or students who require a high degree of structure and communication support, is made up of eight students, six of whom have an eligibility of ASD. The students served in her classroom range in grades one through six, and she is supported by two paraprofessionals.

Cynthia is a 29-year-old female who has been teaching students with ASD for two years. She has a four-year degree in behavior analysis and completed an alternative certification program to receive her special education certification. Cynthia began working with students
with special needs in high school when she volunteered at her local high school both in classrooms and in Special Olympics. Additionally, she assisted in her mother’s special education classroom at the same high school. Before pursuing her undergraduate degree, Cynthia worked as a paraprofessional in a preschool classroom for students with ASD for two years. These experiences confirmed that Cynthia wanted to be a teacher in a classroom for students with ASD. Cynthia currently has four students in her classroom, all of whom have an eligibility of ASD. The students she teaches range in grades nine to twelve. She has two paraprofessionals who support her and her students both in the general education and the special education classroom.

Elizabeth is a 24-year-old female who graduated with a Bachelor’s of Science degree in education with a specialization in special education from a four-year university in her first year of teaching. This degree prepared her for teaching students who fall in the “mild/moderate” area of severity. Although she is technically teaching her first year in a classroom for students with ASD, she served as a long-term substitute in this classroom before she was hired. Additionally, she had substituted in a long-term situation at a middle school. Elizabeth shared that before she got into teaching, she had influences from her mother, who was a school psychologist. She also worked in her senior year of high school in the preschool program for children with disabilities (PPCD) classroom. Though she had already planned on pursuing education and teaching, it was not until after these experiences she solidified that special education was the direction she wanted to go. At this point, her experience had primarily been with students with Down Syndrome and mild learning differences. However, during her preservice education, she was placed in an “autism room” at a local school. This was her first practicum and she was “terrified.” Once in the classroom, she fell in love and knew, “This is what I’m going to do.
This is what I want my classroom – my dream classroom would be this classroom.” Her current classroom has five students, and the support of two paraprofessionals and a sign language interpreter. She has students from kindergarten to fifth grade who transition into the general education classroom as needed.

Emily is a 39-year-old female who has been teaching individuals with ASD for three years. She has a four-year degree in general studies, with a focus in applied behavior analysis, psychology, and learning technologies. She pursued her education further through an alternative certification program, which provided her with certification in special education. Before she pursued her degree, she was a substitute teacher in both general education and special education classrooms, which she held for two years while finishing her bachelor’s degree. After these experiences, she recognized that her interests were grounded in working with students with ASD. This led her to pursue a paraprofessional position in a classroom for students with ASD. At the time of the interview, her self-contained classroom for students with ASD was comprised of six students with an identified eligibility of ASD. The grade levels ranged from kindergarten to fourth grade. She is supported in the classroom by two paraprofessionals who aid her students both in the classroom and in the general education setting.

Kyle is a 30-year-old male who graduated from a four-year university and received a bachelor’s degree in physical education. He later received his certification to teach special education from an alternative certification program. Within his coursework for his bachelor’s degree, he participated in an adaptive physical education class where he was given the opportunity to work with students with ASD. At the time of the study, he was in his first year of teaching with eight students, all of whom have an eligibility of ASD. He also has one paraprofessional supporting him in his classroom. A majority of these students are served in
inclusion settings, ranging in age from kindergarten to fourth grade. He spoke to the collaboration between all special education staff members on his campus who help to support the students in his classroom.

Melanie is a 25-year-old female who, at the time of the study, was in her second year of teaching students with ASD. Melanie attended a four-year university and received degree in interdisciplinary studies with a specialization in special education. Her special education degree was generic in nature and did not provide her with any specific training in working with students with ASD. She began working with students with ASD in her mother’s special education classroom. Melanie assisted in the classroom, as well as babysat for students from her mother’s classroom. She worked one summer as a paraprofessional during an extended school year (ESY) program. These experiences led her to pursue a teaching career in special education, and more specifically with students with ASD. Her current classroom has six students, all identified with the eligibility of ASD, and she has two paraprofessionals who assist her in the classroom.

Interviews

Data for the study came primarily from semi-structured interviews. Interviews were recorded and transcribed. Collectively, 18 interviews provided 260 pages of transcribed data. Interview questions (see Appendix G) were reviewed by three experts in the field to ensure validity (Hardesty & Bearden, 2004). Experts held the following positions; director of assessment at a university-based center for children with autism, board certified behavior analyst (BCBA) and owner of a private clinic for students with autism, and a professional who provides support to teachers of students with autism at a large school district in north east Texas. As a measure of reliability, all participants were asked the same questions and the interview procedure
was explained before the interviews began. Each participant was interviewed three times over a three to five week period, consistent with Seidman’s method (2006) of interviewing. This phenomenological process of in-depth interviewing provides information regarding the context of participant behaviors, which leads to an understanding of the meaning of their behaviors. Participants were sent a copy of the transcript after each interview to review as a method of member checking.

Field Notes

Systematic field notes were collected during the interview process (see Appendix D). Field notes related to the interviews were written to document relevant extra-interview encounters with the participants (Bratlinger et al., 2005). Data from field notes serve as a recording of additional in-depth information gleaned from the interviews. Reflexivity within qualitative research is the act of the researcher focusing on himself or herself as an interpreter of the social reality being studied (Gall, Gall, & Borg, 2007). Field notes, in the current study, were used to summarize participant experiences and provide an avenue for the researcher to verify her role as an active contributor to the data.

Qualitative Coding

Interview and field data were analyzed using the constant comparison method, described by Lincoln and Guba (1985) as a “continuous and simultaneous collection and processing of data,” (p. 335). First, units of data were identified and coded using QSR International NVivo 10® (2010) software. Patterns and themes within the data were identified (Taylor-Powell & Renner, 2003). Inter-rater reliability (IRR) was established in code and theme analysis, to
solidify the interpretation of the themes and codes associated with the study (Marques & McCall, 2005). This was accomplished through the use of two outside raters, both doctoral students with experience working with students with ASD. The researcher and IRR coders each coded the interviews of a randomly chosen participant and individually established codes. After a discussion of the independent codes and their meanings, the group created a collective codebook (DeCuir-Gunby, Marshall, & McCullough, 2011). Interview data from another randomly selected participant was coded by all three coders using the codebook established. Codes were discussed and adjusted until there was agreement amongst all three coders. The finalized codebook (see Appendix E) was used by the researcher to code 260 pages of interview data using NVivo 10® (2010). During this phase of coding, the researcher used open coding to categorize participant responses, looking for similarities and differences in the data. Data analysis continued until each data source was coded completely. Through the codes, themes associated with knowledge of ASD, knowledge of EBP, and perceptions of preservice training evolved. A visual display of the data (Figure 1) was created to provide a visual representation of the codes, themes, and the relationship between them (Miles & Huberman, 1994).

Results

Presentations of the results are divided into three sections. The first section summarizes the results of participants’ positions regarding knowledge of ASD. Foundational to qualitative research, thick descriptions of participants’ perceptions are reported (Patton, 2002). In the second section, participant knowledge of EBP is covered with illustrative direct quotes from the participants. The third and final section reports participants’ perceptions of their preservice preparation programs, supported by direct quotes from participants.
Knowledge of ASD

The code “knowledge of ASD” identified participant understanding of the core deficits of ASD, includes problems with communication, challenges in social skills, and restricted interests, as identified by the *DSM-IV-TR* (APA, 2000). The participants demonstrated a comprehensive understanding of the core deficit areas and how these deficits affect a student’s participation in the classroom. All participants recognized that the core deficit of communication affects students with ASD across all environments, as indicated by participants referring to communication a total of 65 times across their interviews (Table 2). One participant’s impression of communication was, “If you can’t communicate and you can’t understand what I’m saying to you, then it’s going to be harder for you to learn.” The identification of social deficits associated with ASD was referenced 126 times, with all participants recognizing this as a defining characteristic of ASD. “Social interaction” and “social skills” were words used to demonstrate the participants’ understanding of social deficits in ASD. Repetitive and stereotyped behavior is a core deficit of ASD, which was only mentioned six times by two participants. However, all participants mentioned sensory issues, which could be associated with stereotyped behavior. Notably, the two participants who mentioned repetitive and stereotyped behavior had students in their classroom who demonstrated high levels of repetitive and stereotyped behaviors. While not a defining characteristic of ASD, participants associated “behavior” within their description of ASD. Behavior difficulties were mentioned by all six participants a total of 44 times, with one participant mentioning it 24 times. Table 2 reflects word counts for each of the codes associated with the theme knowledge of ASD.
Evidence Based Practices Related to Teaching Students with ASD

Indicators of EBP are delineated by topics mentioned that coordinate with the NAC’s (2009) list of 33 established and emerging EBP and the NPDC (Wong et al., 2014) list of 27 EBP. EBP identified and discussed by participants included visual strategies, applied behavior analysis (ABA), naturalistic teaching, social narratives, and reinforcement. The three most frequently mentioned EBP were ABA, visual strategies, and naturalistic teaching. Visual strategies were recognized, but not necessarily utilized, by all participants. One participant stated that she has some students who require a visual schedule in her classroom, while she has other students who are unable to follow a visual schedule independently. Another participant works in a school district that is ABA-based and does not typically ascribe to the use of visual strategies for students with ASD. However, through prior experience and knowledge about of students with ASD, she recognized that her students need visual cues and several have difficulty processing auditory information. Despite district preferences for applied behavior analysis as the primary method of instruction, she uses visual cues in the form of photographs on her iPhone™ or the students’ iPad™ to prepare them for transitions between activities. One participant reported student success with visual supports, such as schedules:

They like to know what’s going to happen. My students who use the schedule, they come in every day and look at their whole schedule. They’ll point and go down and say ‘okay, this is what I’m doing today.’ They don’t say it out loud, but that’s what they’re doing. They’re looking at what their day is today. I think it’s helpful.

An additional EBP that participants regarded as a routine part of their programs includes principles of ABA. ABA, or expressions of ABA, was mentioned 87 times by all participants (Table 3). Notably, the majority of the references came from participants who either took ABA courses in their undergraduate program, or who worked in ABA-based school districts. Two participants referred to ABA as a “science.” Regarding the science behind ABA, another
participant shared, adamantly, “…it works. I told my paraprofessionals (it works). I didn’t make this up. These are the procedures. This is what works.” Another ABA-based EBP was mentioned was “naturalistic teaching.” Five of six participants made reference to naturalistic teaching in their classrooms, for a total of 39 mentions (Table 3). One participant references to naturalistic teaching occurred in the context of providing students with learning opportunities that focused on manding, playing games, taking turns and using their language. “It’s just naturally happening and they’re having fun,” she stated. One participant teaches within the natural environment as often as she can, depending on her student’s abilities to generalize skills. Some of her students do not respond to discrete trial training at the table; therefore, introducing a skill in the natural setting is the most beneficial and most generalizable.

All participants recognized that students with ASD have difficulty with social skills. Each participant referenced the use of the “Social Stories™ (Gray & Garand, 1993) strategy. “When you go somewhere, this is how you’re supposed to act, and this is what’s expected of you. Just knowing those things in advance sets you up to be successful,” stated one participant. Social narratives/stories can be used to help explain upcoming changes in students’ routines and schedules as well. Additionally, social narratives, and Social Stories™, provide appropriate responses to situations (Wong et al., 2014). The last EBP, although rarely mentioned (n=8), was video modeling. Half of the participants reported the use of video modeling in their classrooms. Regarding video modeling, a participant shared, “It’s just easier to do than on paper.” She also used video modeling throughout her day, often in place of a static visual support.

Preservice Preparation

Preservice preparation programs, both university-based and ACP, are intended to prepare teachers to educate students in the classroom setting. Themes related to preservice preparation
included preparedness and recommendations for preparation programs. Half of the participants (n=3) graduated from programs intended to prepare them to be special educators with degrees in Interdisciplinary Studies. Other degrees held by participants included ABA, physical education, and general studies. These participants completed ACP to acquire their teaching certificate.

Preparedness

Most of the participants (n = 5) had preservice influences, which either lead them toward students with ASD or reinforced their ambition to work with students with ASD. Some participants were given the opportunity to interact with students with ASD through practicum experiences or observations. Reflecting on one such practicum experience, one participant who worked for the first time was assigned a classroom for students with autism shared the following:

I was actually terrified because I got put into – they call it an “autism room,” and I got put into that for my first practicum, and I was terrified. I went in and just fell in love. I knew “This is what I’m going to do.” This is what I want my classroom – my dream classroom would be this classroom.

Another participant, who had never worked with students with autism before said his experience influenced his decision to teach students with ASD, “It (the class) wasn’t specifically children with autism, but the ones I worked with, it really did inspire me to work with them, just fascinating kiddos.”

As novice teachers of students with ASD, participants expressed varied opinions when considering their own preparedness to teach students with ASD, as a result of preservice preparation programs. Participants who received undergraduate degrees in Interdisciplinary Studies or ABA shared that they were pleased with their programs, and the general knowledge of special education; however, the programs did not provide enough specific information and skills
to prepare them to teach students with ASD. Only one university-based participant who indicated an autism specific class, commented:

Without a lot of previous experience, I think I would have been scared and run out the door, because there are no textbooks that tell you the ugly side of autism. It’s the higher functioning students that you read about in textbooks (that they teach you about.) Most of my students have an IQ between 30 and 50, so it’s a different ballgame.

Participants who received their teaching certificate through an ACP, agreed unequivocally that their ACP did not prepare them to teach students with ASD. One participant received a degree in general studies, with ABA and psychology as two areas of focus. Her ACP required her to take one online course, and then pass the state special education certification test.

You have to go through their first online course, which took me less than a day to get through. Then you take their practice test for EC (Early Childhood) through twelve special education certification. Once you pass the practice test, then you can register to take the actual certification test. You take that certification test. If you pass the test, you are then employable as a teacher.

She confidently stated that her AC program did not prepare for teaching students with ASD.

Another participant stated:

My alt cert program didn’t prepare me at all. It didn’t prepare me at all with these kids. My alternative certification stuff, I did it and got done with one course and threw that stuff away because I’m just not going to use it. I’m not going to go into general education. That is not going to happen. So it wasn’t useful at all. Not at all.

Participant Recommendations

The most common ($n = 4$) recommendation made by participants from university-based programs was to provide students with more specialized courses specific to students’ areas of interest, in this case, autism (Table 4). Additionally, participants would like to receive practical information, relative to teaching strategies for students with ASD; strategies that could be taken directly from the preservice program and applied in the classroom. One participant stated that she would have liked to have “more real life examples, videos and this is how you work with a
child that’s doing this.” She also would have liked to receive instruction on how to make “workboxes,” (an organization system contained in a "box" for presenting lessons and information to students that provide them structure, independence and self-direction,) as well as how to prepare and use them in a classroom. Another significant recommendation was the opportunity to have choices (i.e., assignments, practica, readings, modules) within their coursework that were specific to their future teaching preferences was referenced by most (\(n = 5\)) participants. Such choices and opportunities would give students an opportunity to enhance their knowledge base and provide focus and specific skills to their ASD teaching repertoire. A participant reflected:

There’s so much more to special education than the laws, and IDEA, and the least restrictive environment and the basics of an IEP, or basics of an ARD. There’s so much more than that. There are other things we could be learning. Evidence Based Practices. Let’s talk about visuals in your classroom, one about video modeling… give me a class on writing a social story.

Lastly, providing a mentor who has specific experience working with students with special needs was recommended. One participant adamantly proffered, “If you’re going for special education, then that’s what should be offered… some expertise should be offered. Somebody who knows should be available for consultation.” Regarding his mentor from the ACP, one participant shared that after a while, “I felt like I was more the expert (on ASD).” These suggestions and recommendations, coming directly from novice teachers, could provide opportunities for improvement in both university-based programs and ACP, which will directly affect programming for preservice teachers, and future novice teachers of students with ASD.

Discussion
Scheuermann et al. (2003) suggest that the complexities of ASD make it more difficult for novice general special education or alternatively certified teachers to teach students with ASD. The lack of specificity in their preservice instruction leaves little room for the specialization that is required to teach students with ASD. The novice teachers in this study demonstrated considerable knowledge of ASD, including information associated with the core deficit areas of ASD, with the majority of the knowledge coming from personal, prior and preservice experiences, as well as preservice influence and training. Prior experiences with individuals with autism were consistent across all participants. Kyriacou (1993) indicated that novice teachers need opportunities for hands-on experiences prior to entering the classroom. Three of the six participants had experiences as paraprofessionals in special education classrooms, two of which were in classrooms for students with autism. Notably, direct experiences with students with autism were predictive of these future teachers of students with ASD.

Participants revealed that limited information on autism was provided in preservice preparation programs. What university prepared participants received was foundational or functional knowledge of the core deficits of ASD. Participants in ACP indicated that ASD was rarely mentioned and that program mentors did not have an understanding of ASD or knowledge of the skills necessary to teach students with ASD. While one participant took a course on ASD, other traditionally prepared participants were not exposed to knowledge of ASD other than generally in generic special education courses. Novice teachers, when given opportunities to work directly with students with ASD in conjunction with course content, have a substantive knowledge of ASD, which prepared them to be effective and competent teachers.
EBP learned in preservice preparation programs were mainly demonstrated and practiced in practica and internships. Participants who graduated from ABA programs indicated, specifically, that they had opportunities to practice teaching strategies and interventions such as manding and shaping. Additional acquisition of knowledge regarding EBP was gained through courses on ASD, district-provided professional development, regional service center training, and online modules. Much like knowledge of ASD, the participants were motivated to seek additional information about effective programming through opportunities outside of formal university training. Simpson et al. (2011) reported that:

Many service providers seem to lack an understanding of evidence-based practice and instead resort to an assortment of interventions based on the belief that employing a multiplicity of possible interventions increases chances for success, or they rely on a novel or untested method that they have read or heard about but do not fully understand. (p. 6)

Foundational knowledge of ASD was achieved through preservice preparation programs and additional general understanding of EBP was achieved through professional development. The predominantly noted EBP included visual supports, ABA, and naturalistic teaching with all participants reporting knowledge of visual supports and ABA. Participants reported utilizing visual supports with students with autism as tools to facilitate transitions, communication, and to manage behavior. ABA and naturalistic teaching, a technique associated with ABA, were additional EBP that were mentioned frequently by participants in this study. Notably two participants graduated with degrees associated with ABA, and two other participants work in school districts where ABA is the foundation for classroom instruction. Social narratives and video modeling were the two EBP that were the least mentioned. Video modeling is an EBP that has only recently received considerable research attention (Gardner & Wolfe, 2013; Shukla-
Mehta, Miller, & Callahan, 2010), which could provide an explanation for the infrequency of

mentions in this study.

The most important factor regarding EBP is that novice teachers are receiving

information about EBP and are using them in their classrooms. As identified self-learners,

participants initiated their own inquiries about EBP and are finding an abundance of online

resources, such as the Autism Internet Modules, supported by the NPDC (Wong et al., 2014).

Such efforts by participants help bridge the research-to-practice gap and places relevant

information into the hands of novice teachers.

NCLB (2002) requires teachers to be to be highly qualified in content areas; however,

content area specification excludes the specificity required to teach students with ASD (Brownell

et al, 2010; Kyriacou, 1993). Participants in this study followed two specific paths in becoming

educators of students with autism, including ACP and university-based special education

preparation programs. Three participants followed the traditional route to teacher certification

through an IHE and three followed the ACP route. University-based preparation programs

recognize field experiences and student teaching as key factors in promoting effective teachers

(Leko, Brownell, Sindelar, & Murphy, 2012). ACP, however, are often distance-based learning,

leaving little room for experience and hands-on opportunities.

Key factors that participants believed would promote effectiveness in preparation of

special education teachers were opportunities for practical applications of EBP studied. These

participants had the fundamental knowledge of EBP for students with ASD, as they had been

mentioned in their courses; however, they did not have opportunities to implement and practice

the utilization of these strategies, as related to students with ASD. Participants who took the

traditional route to special education certification participated in observations; however they
were appointed, rather than chosen, giving them classroom opportunities, but not opportunities specific to ASD. Choice and specificity in coursework was an additional area of program enhancement participants recommended. They would have liked to have had courses specific to their area of interest, ASD, in their program. The implications of this suggestion would be preparation in knowledge of autism, as well as knowledge of EBP.

There continues to be controversy regarding ACP as a favorable route for future special educators (Quigney, 2010). Participants in this study who completed ACP reported that the information they received regarding special education was limited and directed primarily at law, lesson plans, and writing goals and objectives. While this information is an essential part of teaching students with ASD, it is lacking the explicit material that is most relevant to special education teachers, such as behavior management, accommodations and modifications, communication skills, and differentiating instruction. Currently, ACP are not addressing autism specific EBP, creating a gap between the learning process and the application of learning. Another area of concern for participants who followed the ACP route was the need for mentors who have experience working with students with ASD. Feedback from an experienced educator (TEA, 2008) is an indicator of quality programs (Scheuermann et al., 2003). The feedback received by the participants who completed the ACP program was insufficient and irrelevant to their roles as teachers of student’s with ASD. Although mentors were provided, mentors did not have the experience necessary to support the teachers in the program.

Limitations

The results of this study are limited in three ways. First, qualitative research is founded in the sampling of participants who provide an information rich perspective (Sandelowski, 2000).
In searching for novice teachers of children with autism, the researcher utilized her resources to locate participants. In the role of teacher support, the researcher has a small network from which to recruit. Facebook was a main source of recruitment, which inherently linked participants to the researcher. As such, several participants were colleagues of the researcher. Though the participants were all asked the same questions, in the same sequence, relationships may have influenced the volume of participant information, implying that some participants were very comfortable and shared a wealth of information and conversely, some participants were less likely to share. Secondly, the small number of participants and the locality limit the generalizability of the findings. Third, individuals who do not enjoy their jobs are less likely to want to talk about what they do. The novice teachers in the present study were all eager to share their contagious passion for teaching students with ASD. As such, the researcher cannot presume that the views from the participants in the study are indicative of the views of the larger population of novice teachers of students with ASD.

Future Directions

The results of this study suggest the need for further research in relation to four questions: (a) What is the role of mentors for novice teachers and how could this effect retention of effective teachers? (b) How many school districts utilize “autism specialists” in current school settings and how can this position proactively support novice teachers? (c) Consider replicating this study in a state that currently offers an autism certification in attempt to gain knowledge regarding the role preservice programs have in preparing novice teachers. (d) How can state guidelines be adjusted to support preservice teachers who have an interest in teaching students
with ASD? (e) What can universities do to facilitate autism specific programming for preservice teachers with an interest in working with students with ASD?

In relation to the first question, the role of mentors play for novice teachers should be explored. Participants in the current study reflected on mentors, indicating that the presence of, or conversely, lack of, mentors significantly impacted their status as novice teachers. Critical mentors in the field of teaching extend “practical training into the classroom” (Brown-DuPaul, Davis, & Wursta, 2013; p. 808), which directly influences confidence and job satisfaction as novice teachers. Teacher preparation programs should consider recruiting teacher leaders with background in autism to cultivate preservice teachers who express an interest in the field of ASD. Regarding the second question, in recognition that novice teachers are a vulnerable population, the role of autism specialist may present itself as a path to teacher support (Scheuermann et al., 2003). Further research on the role of autism specialists, as classroom support, should be considered. Lastly, inquiries into state level guidelines, which directly effect university based programming, for preservice teacher preparation, and the consideration of establishing disability specific programming should be considered. Perhaps identifying opportunities for autism specific programming at the university level will establish framework of support for future educators of students with ASD.

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References


NOVICE TEACHERS OF STUDENTS WITH AUTISM SPECTRUM DISORDERS:
A SNAPSHOP AND SOME POINTERS FOR SUCCESS

*I cannot emphasize enough the importance of a good teacher.*

Temple Grandin

Emily is a teacher of students with autism spectrum disorders (ASD) who receive their services in a self-contained setting. She is currently in her third year of teaching, each of those years in the same classroom, with many of the same students. Emily’s degree is in general studies from a state university. Soon after she earned her undergraduate degree she began an alternative certification program to work toward certification in special education. Her interest was sparked by experiences substituting in a class for students with ASD. “I was a substitute for one year, and I substituted in both special education and general education classes that year. I taught in a class for students with ASD and I loved it.” This opportunity provided Emily with the experience, which lead to a passion, for teaching students with ASD. She took a teaching assistant position for two years while she finished her undergraduate degree and credits that experience for preparing her to become a classroom teacher. “I don’t think you can learn how to teach kids with autism by sitting in any classroom, regardless of how good that classroom is or how good the teacher in that classroom is because kids with autism, they’re all different, and there’s nothing that replaces the hands-on (experience.)” When Emily was asked how she knew she was making a difference to her students, she said, “We taught a little boy to say his name and his mom was forever grateful. She sent a video to his grandmother and she cried hearing him say his name. He’s nine…And I care. I really, really care about all of my students. It’s not just a job.”
Introduction

In 2014, special education teachers will inevitably encounter a student with autism spectrum disorders (ASD) at some point in their career. The prevalence rates for ASD in the United States have increased to one in 88 (CDC, 2012). Assuming a typical school in the United States has four third grade classrooms, with 20 students each, this ratio places at least one student with ASD in the third grade. Students with ASD are served in a continuum of placements, from the general education setting to more restrictive self-contained special education programs. Simpson, Mundschenk, and Heflin (2011) report there is no universally appropriate setting for students with ASD. Placement decisions are determined by the individual education plan (IEP) committee (IDEIA, 20 U.S.C. 1412(5)(B)), which reviews assessment and classroom data to establish the appropriate placement. Although students are provided a continuum of services in public school settings (IDEIA, 20 U.S.C. 1412(5)(B)), often students with ASD receive the majority of their programming in self-contained classrooms that provide structure and communication supports. The U.S. Department of Education (2009) reports that 41% of students with ASD were served in separate classrooms for at least 60% of their class day. In preparing students with ASD for the general education classroom, Mesibov and Shea (2010) suggest students with ASD be provided a structured learning environment in which they can receive direct instruction on prerequisite skills. Once these skills have been established, application and generalization of skills can occur in other educational environments (Hampshire & Hourcade, 2014; Simpson et al., 2011).

Conceivably, self-contained classrooms are taught by novice teachers, those with three or fewer years of teaching experience (Barrett et al., 2002; Casey, Dunlap, Brister, & Davidson, 2011; Jones, 2009; Roberson & Roberson, 2008). A recent study of novice teachers of students
with ASD (Callaway, 2014) suggests that though teacher preparation programs, both traditional and alternative, have provided foundational information about autism, however, novice teachers have had to create their own opportunities for learning, with regard to classroom structure, behavior strategies, and communication supports.

Once herself a novice teacher of students with ASD, the lead author has often reflected on her journey from novice to experienced teacher. Now in a position to prepare teachers at the local district and university levels, she has engaged in discussions with other educators about how to prepare teachers to serve students with ASD. The purpose of this article is to suggest a brief snapshot of novice teachers of students with ASD and provide practical means of obtaining additional information on teaching strategies for students with ASD. Information was gathered from in-depth interviews with six novice teachers. Who are they? How were they prepared? What are they expected to teach? The article concludes with classroom pointers for novice teachers serving students with ASD.

Why Do Novice Teachers Choose to Teach Students with ASD?

The rationale for choosing teaching as a career has long been studied (Fielstra, 1955; Fox, 1961; Jantzen, 1981; Wood, 1978). Jantzen (1981) conducted a longitudinal study of college students from 1946 to 1979 and found that students choose teaching because they want to serve and have an interest in performing in leadership roles. Stephens and Fish (2010) surveyed motivational factors of those interested in the becoming special education teachers. Findings from Stephens and Fish (2010) are similar to those found by Callaway (2014), which included motivators, such as personal experiences (i.e., substituting in special education classes, empathy for family members with special needs), as precipitators for careers in special education.
Experiences as a paraprofessional “ignited” their aspirations to teach students with ASD. Callaway, (2014) found hands-on opportunities with students are a precipitator for interest in teaching students with ASD. One participant in the current study identified a preservice practicum to be a key motivator. She was placed in a practicum setting where students with ASD were served. Although she had had previous experience with students with disabilities, students with ASD were new to her. The participant admitted being “terrified.” “I went in and just fell in love. It was my first practicum, but I thought, “this is what I’m going to do. This is what I want. This is my classroom – my dream classroom would be this classroom.” Another participant had previously worked in a classroom for students with ASD as a paraprofessional. Her experiences allowed her to acquire a skillset for being an effective teacher of students with ASD. These two participants illustrate routes often taken by novice teachers who have passion to teach students with ASD.

How Were Novice Teachers Prepared to Teach Students with ASD?

Ideally, teachers of students with ASD would have received specialized training through their preservice preparation programs to meet the unique needs of students with ASD. However, across the United States, teacher candidates are increasingly prepared in cross-categorical or generic preparation programs that may only briefly address characteristics of ASD (Barnhill, Polloway, & Sumutka, 2011; Simpson et al., 2011). The National Comprehensive Center for Teacher Quality (NCTQ; 2010) report on special education teacher certification and licensure indicates only eight states have autism certification or endorsements as part of their teacher preparation programs, which raises significant concerns for students with ASD and the quality of teachers who will serve them (Callahan, Henson, & Cowan, 2008).
Probst and Leppert (2008) suggest knowledge of characteristics of ASD, as well as knowledge of evidence-based practices (EBP) be integrated into the curricula of teacher training programs. However, focus on high-incidence disabilities in preservice teacher preparation programs may leave topics related to ASD to be covered as a separate unit in the class (Simpson et al., 2011) as opposed to covering the scope of skills, along with effective strategies, necessary to teach a student with ASD. In the meantime, students in preservice preparation programs with an expressed interest in teaching students with ASD are left to their own devices to prepare themselves for the classroom.

Callaway (2014) interviewed six novice teachers of students with ASD who were prepared both in traditional and alternative certification programs (ACP). Each group of participants noted that their programs provided only superficial coverage of autism. The coverage was enough, given their prior experiences with autism, to provide a foundational understanding of the core deficits of autism. Of the six participants in the study, only one was offered a course specifically on ASD. Within that course she learned basic information about ASD and received valuable resources, which she uses often; however, she stated, “… you really can’t understand it until you’re in it.” The majority of participants from the ACP programs shared that the brief information received on ASD was insufficient to prepare them for the classroom. Had they not had the previous experiences with students with ASD, they would not be prepared to provide effective services to students with ASD.

What are Teachers of Students with ASD Expected to Teach?

One of the most recent comprehensive recommendations for teaching strategies and methodologies for students with ASD comes from the standards established by the National
Professional Development Center (NPDC; Wong et al., 2014) on ASD. This organization compiled an extensive resource of recommended EBP for educating students with ASD. The NPDC’s (Wong et al., 2014) work is guided by the understanding that professional development for teachers of students with ASD should be derived from a bi-directional model that provides a state-level of organizational leaders in the field, while concurrently directly training teachers and other direct service providers in EBP. The National Autism Center’s (NAC) National Standards Project (2008) organized a group of researchers to analyze current research on practices for students with ASD. Their report yielded established, emerging, and unestablished treatments to support students with ASD. The treatments reported provide teachers of students with ASD a guiding framework for interventions that have been proven to be successful for students with ASD.

For the current study, novice teachers interviewed were queried about their knowledge of EBP. Though most participants were not able to label EBP by their specific names, they were able to describe interventions that shared features of EBP. For example, when asked about EBP and ASD, one participant hesitantly shared, “I know that structure is very important for these kids and that these kids are very visual learners. They have to be able to anticipate what’s coming next.” Most participants were aware of the importance of structure but did not acknowledge “structure” as an EBP for students with ASD. “I don’t ever stop and think, ‘Oh, I want to use this evidence-based practice today,’” shared one participant laughingly. This furthers the supposition that EBP for students with ASD are not a priority in preservice preparation programs. The lack of specific instruction in EBP and autism specific information in preservice preparation leaves novice teachers to pursue this knowledge on their own.
Where Can Novice Teachers of Students with ASD Find Additional Resources and Support?

Over the past 10 years, there has been an increased amount of literature regarding EBP for teaching students with ASD (NAC, 2009; Wong et al., 2014). However, there is a significant gap between the existing research and the application of these EBP in classrooms (Dingfelder & Mandell, 2011; Reichow, 2012). Dingfelder and Mandell (2011) found that programs being implemented in classrooms incorporate many different elements of EBP. However, when these are all taught and used in combination, the fidelity of these programs may not be maintained. As a result, there may be a lack of improvement in adaptive, social, or cognitive functioning, often putting novice teachers in a position to question the validity and evidence of any of these EBP (Chasson, Harris, & Neely, 2007).

When a novice teacher enters his or her classroom, the teacher should make research-based practices an integral component of the classroom implementation plan. The pointers that follow provide a “starting point” for the novice teacher. Also included are web-based resources where additional information can be found. The web sources included universities, research and autism related organizations sites as well as sites hosted by autism practitioners. The author hopes these resources will provide novice teachers with a snapshot of easily accessible recommendations to assist with the implementation of effective services for students with ASD.

Create Classroom Routines

Some individuals with autism have challenges associated with changes in routines. In a classroom, this may manifest itself in transitions between activities, for example, between subjects or structured and unstructured activities (Banda, Brimmett & Hart, 2009). Difficulty handling transitions may lead students with ASD to experience heightened levels of stress and
anxiety (Lytle & Todd, 2009) which may result in problematic behaviors. Further, children and adults with ASD who are able to verbalize their needs have shared that they prefer routines and thrive with structure in their lives (Grandin, 2002). As a result, they seek out predictability within their environment. Research suggests that it is best practice (Carnahan, Hume, Clarke, & Borders, 2009; Wong et al., 2014) to utilize structure in classrooms for students with ASD. Creating a specific routine that is reflective of daily activities provides students with the support needed to move throughout their day.

The following resources provide a basic understanding of the elements associated with structure and routines in the classroom.

- **Title:** Autisminternetmodules.org – “Rules and routines”  
  - URL: [http://www.autisminternetmodules.org/user_mod.php](http://www.autisminternetmodules.org/user_mod.php)  
  - Description: Strategies for designing supports based on rules and routines for students with ASD in the home, community, and school setting.

- **Title:** Autism: Interventions and Strategies for Success  
  - Description: Structured teaching strategies, including the importance of visual structure, visual schedules, and specific teaching components, such as “work stations.”

- **Title:** Morning Routine, Door Visuals, and Teacher Time in an Autism Classroom (YouTube™ video, *The Autism Helper*)  
  - URL: [http://www.youtube.com/watch?v=O_jNR-aGj1w](http://www.youtube.com/watch?v=O_jNR-aGj1w)  
  - Description: The classroom teacher describes the morning routine she uses in her classroom to prepare students for the day.

- **Title:** ASD Teacher  
  - URL: [http://asdteacher.com/?s=structure](http://asdteacher.com/?s=structure)  
  - Description: Teacher written blog about how to use routines and schedules in the classroom and in instruction.
Incorporate Visual Strategies

Use visual strategies and structure to assist with transitions and communication and to serve as antecedents. Antecedents based interventions, such as visual strategies, are proactive and intend to interrupt behaviors. They may also be used to prime the learner for upcoming learning tasks or social situations (Neitzel, 2009). Examples include visual schedules, offering visual choices, and preparing students for changes in routines with visual supports. As visual learners, students with ASD benefit from using pictures as an antecedent to transitions (NAC, 2009; Wong et al., 2014). Visual strategies are used to support communication, and to also provide visual information, such as rules and routines, to individuals with autism (Lal & Bali, 2007; Rao & Gagie, 2006). The following resources provide cursory information regarding strategies associated with visual supports and strategies for students with ASD.

Title: Structured Teaching Strategies: A Series

- Description: Structured teaching strategies, including physical structure, visual schedules, work systems, and visual structure provided by Indiana University.

Title: University of Louisville: Using Visual Supports to Help Individuals on the Autism Spectrum

- URL: [http://www.youtube.com/watch?v=fAi1TZP69-I](http://www.youtube.com/watch?v=fAi1TZP69-I)
- Description: Recorded webinar on visual supports to enhance communication for students with ASD.

Title: Visual Supports for Students with Autism

- URL: [http://www.youtube.com/watch?v=dt3Hd907b90](http://www.youtube.com/watch?v=dt3Hd907b90)
- Description: YouTube video with low-tech supports to incorporate students with ASD in large group reading activities.

Title: Visual Supports for Students with Autism Spectrum Disorders
Provide Choices When Possible

Individuals with autism need opportunities to make choices throughout their day. Shogren, Fagella-Luby, Bae, and Wehmeyer (2004) report that providing choices may serve as an intervention for decreasing problem behaviors. Choice-making often increases student engagement in activities (Hua, Lee, Stansbury, & McAfee, 2014). Providing choices also increases the opportunity to express wants and needs in appropriate ways, which in turn offers a sense of control over their environment and increases in on-task behavior (Ulke-Kurkuoglu & Kircaali-Iftar, 2010). Lastly, providing choices between activities and materials decreases protests and increases the initiation of tasks. Through choice making is not specifically an identified EBP, it is conceptualized as a support within the categories of antecedent based interventions, functional communication training, and visual supports (NAC, 2009; Wong et al., 2014).

The following resources provide the reader with specific teaching strategies and implications of providing opportunities for choice making to students with ASD.

- **Title:** Autism Live: Teaching Choices
  - **URL:** [http://www.youtube.com/watch?v=LtTOUB-ma2E](http://www.youtube.com/watch?v=LtTOUB-ma2E)
  - **Description:** YouTube video that shares tips to teach students with ASD to make choices.

- **Title:** Texas Guide for Effective Teaching: Choice Making
Utilize Technological Resources

In a world that continues to change technologically, many individuals with ASD are actively keeping up with this trend. Many individuals with ASD have an affinity to computers and technology, which makes this a relevant topic for research (Ploog, Scharf, Nelson, & Brooks, 2013). Technology can be used as a visual support, for augmented and assistive technology (AAC), and social supports (O’Malley, Lewis, Donehower, & Stone, 2014; Shane et al., 2012). With the advancement in mobile technologies, access to technology has become much more widespread and is often used as a comprehensive language and teaching tool (Ennis-Cole & Parkman, 2012; Ganz, Boles, Goodwyn, & Flores, 2014).

• Title: Autism Speaks: Technology and Autism
  o URL: http://www.autismspeaks.org/family-services/community-connections/technology-and-autism
  o Description: Introduction of innovative technology to enhance individuals with ASD abilities to learn.

• Title: eSchool News: An Assistive Technology Guide for Autism
Individuals with ASD are visual learners, which could result from auditory differences (DePape, Hall, Tillmann, & Trainor, 2012). Individuals with ASD have indicated that when receiving information and language via auditory input, it is best to keep the information concrete, and often, the less language used, the better (Grandin, 2002). Grandin (2002) also suggests that individuals with ASD have difficulty processing strings of information and information in writing is processed more easily. Indicative of individuals with ASD, difficulty processing abstract language, such as sarcasm and idioms, (Hobson, 2012) interfere with social interactions. Keep in mind that this difference may effect how an individual with ASD both receives and interprets social language. Although this information is not explicitly listed in the NPDC (Wong et al., 2014) or NAC’s (2009) lists of EBP, it is an embedded strategy within visual supports, functional communication, social narratives, and social skills training.
Final Thoughts

Novice teachers of students with ASD should provide them with an education that is evidence-based, comprehensive, and specific to their individual needs. As novice teachers, the opportunity to learn the specific information necessary to teach students with ASD may not have been presented at the preservice level, creating missed opportunities and gaps in the information necessary to be the most effective teacher of students with ASD. Callaway (2104) indicated that effective teachers of students with ASD are motivated to expand their repertoire of learning in attempt to educate students with ASD effectively. Opportunities for novice teachers to pursue self-improvement and increase their knowledge base are available through an increasing number of easily accessible, evidence-based, Internet resources.
References


Table 1

*Participant Demographics*

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*Note.* Participants were assigned pseudonyms to ensure anonymity.
Table 2

Knowledge of ASD Word Count

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<tbody>
<tr>
<td>Anne</td>
<td>10</td>
<td>17</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td>Cynthia</td>
<td>9</td>
<td>27</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>12</td>
<td>11</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Emily</td>
<td>24</td>
<td>29</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Kyle</td>
<td>7</td>
<td>15</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Melanie</td>
<td>3</td>
<td>27</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>65</td>
<td>126</td>
<td>16</td>
<td>44</td>
</tr>
</tbody>
</table>


Table 3

Most Frequently Mentioned EBP Word Count

<table>
<thead>
<tr>
<th></th>
<th>VS</th>
<th>ABA</th>
<th>NT</th>
<th>SN</th>
<th>VM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>Cynthia</td>
<td>37</td>
<td>26</td>
<td>11</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Elizabeth</td>
<td>16</td>
<td>10</td>
<td>13</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Emily</td>
<td>36</td>
<td>34</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Kyle</td>
<td>21</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Melanie</td>
<td>22</td>
<td>5</td>
<td>12</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>133</td>
<td>87</td>
<td>39</td>
<td>27</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 4

*Participant Recommendations for Preservice Programs*

<table>
<thead>
<tr>
<th></th>
<th>IHE</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anne</td>
<td>1. Teach practical implications for the classroom.</td>
<td>1. Provide more specialized courses specific to student area of interest.</td>
</tr>
<tr>
<td>Cynthia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elizabeth</td>
<td>1. Allow students to choose courses based on their area of interest.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Teach practical implications for the classroom.</td>
<td></td>
</tr>
<tr>
<td>Emily</td>
<td></td>
<td>1. Provide more specialized courses specific to student area of interest.</td>
</tr>
<tr>
<td>Kyle</td>
<td></td>
<td>2. Provide a mentor who has experiences specific to setting.</td>
</tr>
<tr>
<td>Melanie</td>
<td></td>
<td>1. Provide more specialized courses specific to student area of interest.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Allow students to observe a variety of classrooms, programs, and grade levels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Allow students to choose courses based on their area of interest.</td>
</tr>
</tbody>
</table>

*Note.* IHE=Institutes of Higher Education AC=Alternative Certification.
Figure 1. Visual representation of the data collected. “Preservice Preparation,” “Knowledge of ASD,” and “Knowledge of ASD” are the primary themes. Within those, themes sub-themes were identified and are represented in the second layer of the circle. Lastly, the outer layer of the circle indicates key words associated with each of the sub-themes.
Figure 2. Visual of the indicators of the direct relationship between prior experience, preservice training, and personal experience on knowledge of ASD, which reinforce the ideas of confidence, ability to address challenges in the classroom, and novice status.

Figure 3. Visual representation of the role preservice preparation, professional development and general knowledge of ASD serve in the understanding of EBP.
Figure 4. Visual of the influences of choice, practical experiences, and experienced mentor on effective preservice preparation programs for novice teachers of students with ASD.
APPENDIX A

EXTENDED LITERATURE REVIEW
Historical Perspective on Teacher Preparation

In the early 1800s, Horace Mann began a journey to reform education in the United States education. With his political status, he was able to work toward public education for all Americans. He is believed to be the founder of the U.S. normal schools, the country’s first teacher preparation institutions. Mann asserted that the “art of teaching” is as essential as the core subjects being taught (Hinsdale, 1898). Such a statement suggests the importance of the role of pedagogy in teacher preparation. Pedagogy is defined as “instructional methods, learning theories, educational measurement and testing, educational psychology, sociology and history” (Wilson, Floden, & Ferrini-Mundy, 2002, p. 193). Additionally, Mann’s methods for preservice training included internships in which the “young teacher can exercise in the business of instruction” (Hinsdale, 1898, p. 157).

In the early 1900s, normal schools became teacher colleges. The content of coursework expanded to address history, psychology, standards of teaching, methods of teaching and lastly, observations in public schools (Richardson, Brule’, & Snyder, 1953). The course sequence also moved from two-year preparation programs to four-year programs. Notably, training did not lead to a bachelor’s degree but prepared individuals to be elementary teachers. The prevailing practice of the time was that only secondary teachers were required to have a bachelor’s degree. Later universities, particularly in the northeast, began graduate programs in the field of education. The inception of university-based teacher preparation programs created the need for standards for the new profession.

As the teaching profession evolved, states sought to control the content of teacher preparation programs (Angus, 2001). There was a divide between states, with some requiring state level certification and others requiring only the completion of university-based coursework.
In states with rural areas, where teachers were more difficult to hire, it was easier for state level requirements to be utilized. The rigors of university-based preparation programs made certification in these states challenging. Some states began certification programs in tandem with university-based coursework, a move that increased the expectations for future classroom teachers.

During the postwar years, universities instituted more rigorous requirements for teacher preparation. According to Angus (2001), this push prompted the formation of the National Commission on Teacher Education and Professional Standards (TEPS). TEPS began to host teacher conferences and organize teachers into a professional community. TEPS also supported the importance of certification of teachers to ensure that well-prepared teachers entered the classroom. TEPS proposed the idea that state legislation was needed to manage the preparation and certification standards of teachers. Their initiative was successful and by the 1960s advisory committees within departments of education were created to represent various elements of the teaching profession. These advisory boards were given the liberty to define coursework, hours required for graduation, and the power to grant or withhold graduation status based on meeting defined standards. Shortly after the states were given this control, the National Council for the Accreditation of Teacher Education (NCATE) was established. NCATE sought to create continuity among teacher preparation programs across the country (Angus, 2001).

The premise and perspectives of TEPS and NCATE continued through the 1970s and 1980s. During the late 1990s under the presidency of George W. Bush, the quality of public education in the United States became a central focus. Among the many concerns were teacher credentials and the efficacy of teacher preparation. No Child Left Behind (2002) focused on teachers’ content knowledge and the status of “highly qualified” teachers (Berry, Hoke, &
Hirsch, 2004). Highly qualified teachers (a) hold bachelor’s degrees (b) have full state certification or licensure, and (c) can prove that they know the subject they teach. Subject matter knowledge was measured by passage of state-developed content tests. An additional requirement for middle and high school teachers was to show evidence of subject area knowledge by having a major (or credit equivalent) in the subject taught (NCLB, 2002).

As well as challenging local school districts to employ highly qualified teachers, NCLB’s (2002) regulations required that IHE examine their preparation of teachers. Jenlink and Jenlink (2005) contend that the doubt associated with teacher preparation programs’ ability to prepare highly qualified teachers has adequately enhanced the market for teacher preparation through alternative certification programs (ACP). From a teacher preparation perspective, alternative certification could conceptually take the field of teacher training back to its origin, where a simple state-level certification assured a position as a teacher, regardless of the pedagogical background.

Current Preservice Special Education Teacher Preparation

Though concern for teacher preparation and teacher quality was not initiated by NCLB (2002), the law can be considered a significant source of recent scrutiny. The literature on what qualities are necessary for a teacher to be considered highly qualified has proliferated professional journals across all fields of education, including special education (Berry et al. 2004; Darling-Hammond & Sykes, 2003). Brownell, Sindelar, Kiely, and Danielson (2010) trace the conceptualization of special education teacher quality and preparation from research, policy, and practice perspectives.

Historically, the conceptualization of the qualified special educator has been shaped through policy development, positions and beliefs about disabilities, efficacy of special
education, and the ability of general education teachers to serve students with disabilities. In 1975 the Education for All Handicapped Children Act (EHA) was passed, ensuring education for all students, regardless of their abilities or disabilities. Resulting from this legislation was Institutes of Higher Education’s (IHE) categorical preparation of special education teachers in disabilities defined in the law (Brownell et al., 2010). Categorical preparation was further perpetuated by policy and legislation written in disability specific areas and requiring disability specific preparation.

Several factors precipitated a shift in special education teacher preparation from categorical preparation to more general or generic preparation. One critical factor was the continued shortage of special educators. Policy makers, especially those at the state and local levels, pushed for combining preparation and certification into a general study of disabilities and interventions. Therefore, preservice special educators learned a myriad of strategies, which prepared them to teach cross-categorically (Brownell et al., 2010; Geiger, Crutchfield, & Mainzer, 2003). This system often places certified teachers in situations with students whom they were ill prepared to teach.

Another impetus for generic preservice special education teacher training was the philosophy of inclusion. The desire to integrate students with disabilities into general education classrooms led preservice special education programs to prepare their candidates to become collaborative partners and consultants to general educators (Idol, 2006; IDEIA, 2004). This creates a problem in that teacher preparation programs in IHE often “lack clear conceptual boundaries” (Brownell et al., 2010, p. 358). With the influence of NCLB (2002) and IDEIA (2004), special education teachers and preparation in IHE are focused on the delivery of general education programming and ensuring those who receive special education have access to general
Brownell, Ross, Colon, and McCallum (2005) reported the Association of American Colleges of Teacher Education (AACTE) and International Reading Association (IRA) findings, which detailed seven correlate features of general education teacher programs in IHE. These features included a coherent program vision, conscious blending of theory, disciplinary knowledge and subject-specific pedagogical knowledge and practice, carefully crafted field experiences, standards for ensuring quality teaching, active pedagogy that employs modeling and promotes reflection, focus on meeting the needs of a diverse population, and collaboration as a vehicle for building professional community. These specific features were said to prepare general education teachers to support students with special needs in an inclusive environment.

The prevailing identifier separating general education teacher preparation from special education teacher preparation is the lack of focus on intervention and student specific disabilities related to instruction (Billingsley & McLeskey, 2004). The general education movement has left those who prepare special education teachers with general behavioral principles and classroom management strategies as tools to facilitate inclusion into general education (Brownell et al., 2010; Darling-Hammond, Chung, & Frelow, 2009). Special education teachers, upon graduation from a teacher-preparation program, are expected to have a broad range of knowledge encompassing subject content, assessments, interventions to support student progress in specific content areas, and specific information with regard to student disabilities. The general education emphasis equips preservice special education teachers to work as a team with the general education staff—often training general education and special education teachers in the same program (Brownell et al., 2010.)
Alternative Special Education Certification

As the need for additional special education teachers reached a near crisis level, policy makers supported implementation of alternative routes to acquiring a special education teaching certificate (McLeskey, Tyler, & Flippin, 2004). ACP provide an alternative route for securing teaching certification for individuals who already hold a bachelor’s degree. The certification earned is an initial certification similar to those earned by candidates who complete a traditional program through an IHE (Feistritzer, 2005). The premise behind ACP is that teachers who hold an undergraduate degree can be eligible to teach in areas of high need, for example mathematics, science, and special education, after the completion of an ACP. Often these programs are facilitated by private companies, IHE, school districts, or regional service centers (USDOE, 2009). ACP are typically shorter than undergraduate programs and rely on field-based experiences as the core curriculum (Fiestritzer, 2005; Rosenberg & Sindelar, 2005). In 2002, approximately 7% of all special education teachers received an alternative teaching certificate (SPeNSE, 2002). Currently, all 50 states and the District of Columbia report some form of alternative certification programming (National Center for Alternative Certification, 2007). Further supporting ACP as a viable option, NCLB (2002) includes ACP in its definition of a high quality teacher (Humphrey, Wechsler, & Hough, 2005). As the continued supply and demand for special education teachers increases, ACP will likely continue to grow (Boe, 2006: McLeskey et al., 2004).

Specific Preparation of Preservice Special Education Teachers in Autism

The National Comprehensive Center for Teacher Quality (NCCTQ) (2007) reports that only eight states offer autism certifications or endorsements as a part of their teacher preparation programs. Preservice special education teachers are receiving preparation as general or generic
special educators. Although the NCCTQ and Brownell et al., (2010) suggest that special educators are prepared to teach content areas, the question of preparedness to teach students with ASD should be posed. Scheuermann, Webber, Boutout, and Goodwin (2003) identified significant areas of concern regarding teacher preparation for teaching students with ASD, including whether these teachers have mastered specific skills necessary to teach students with ASD.

As teacher preparation programs work toward responding to increases in the prevalence of ASD in the school system, researchers question what is considered essential knowledge for teachers of students with ASD. Scheuermann et al., (2003) identify a lack of skills training, which they believe is necessary, as an obstacle to having teachers who are prepared to teach students with ASD. For instance, distinctive characteristics, such as lack of functional communication skills, marked social delays, insistence on routines, and a focus on inappropriate items (APA, [DSM-5], 2013) associated with ASD typically pose challenges for teachers (Probst & Leppert, 2008). Moreover, they recognize that quality preservice preparation is an indicator of teaching success. Stephen F. Austin State University (SFASU) responded to a need for teachers of students identified as “seriously emotionally disturbed” (SED) and “autistic” (A) by securing a grant to fund undergraduate and master’s level programs that prepared teachers to receive the then applicable Texas endorsement of “SED/A” (McCuller, 2002).

In a report to the Office of Special Education Programs in Washington, D.C., McCuller (2002) notes that 36 graduates fulfilled the requirements of the program. The program consisted of university coursework, practicum and internship hours, and student teaching. Connelly and Graham (2009) report teacher attrition was directly attributed to the length of the student teaching experiences. Therefore, the program at SFASU, with its prominent internship plan,
reports graduates who are prepared for behavior management, Individual Education Plan (IEP) preparation, and legal issues associated with ASD.

Focusing on identified evidence-based practices (EBP) associated with ASD was the primary research question in a study conducted by Probst and Leppert (2008). They found training teachers in a specific strategy associated with ASD, such as “structured teaching,” resulted in positive outcomes for students with ASD, including improvement in behavioral symptoms. Additionally, there is a reduction in teacher stress, which directly correlates with teachers’ coping mechanisms in day-to-day problems associated with teaching students with ASD. Based on their research, Probst and Leppert (2008) recommend giving preservice teachers a foundational understanding of EBP as a part of their preservice preparation. Similarly, research conducted by Jennett, Harris and Mesibov (2003) indicates identification and thorough understanding or commitment to a particular EBP is directly related to decreased burnout and a higher teacher sense of teaching efficacy. According to Helps, Newsom-Davis, and Callias (1999), teachers of students with ASD would like to receive more training specifically relating to ASD and address a lack of consultation and practical advice as a difficulty they encounter.

Preservice Teacher Knowledge of ASD

A variety of studies have emerged exploring preservice teacher and ASD. Most recently, Park, Chitiyo, and Choi (2010) conducted a study that examined preservice teachers’ attitudes toward children with autism. Results indicated that preservice teachers have positive attitudes toward students with ASD, which may stem from previous exposure to students with ASD and the push for inclusion in general education classrooms. Probst and Leppert (2008) urge that understanding the underlying characteristics of students with ASD be an integral part of a special teacher training programs. Similarly, Mesibov, Shea, and Schopler (2005) explain the
importance of specialized training for teachers of students with ASD, and argue that such training is a “critical component with profound implications” (p. 755). In a broader review, Dymond, Gilson, and Myran (2007) found widespread need for service providers, including teachers, to possess knowledge of autism when working with the population. “Educators need to be receiving more training about autism at both the preservice and in-service levels” (p. 141). Specific recommendations include preservice preparation that includes both fieldwork experiences and basic knowledge about ASD.

Literature also reveals differences between how states prepare teachers. States that require more disability specific preparation produce teachers who feel more competent to work with students who have been diagnosed with ASD (Müller, 2005). Müller indicates five of the eight states offering an autism certification or endorsement require at least nine autism-specific graduate hours. Often, these supplementary hours teach preservice teachers EBP, such as positive behavior supports, assistive technology, and communication strategies. Furthermore, internship and practicum hours are required for teachers to obtain their certification. The summary report of state certification indicates a benefit of maintaining endorsement program’s includes the increased likelihood of students with ASD receiving quality instruction in the areas of communication, academics, and social skills by educators who are prepared to work in this field.

Presently, Texas certification options do not include autism certification or endorsement as were previously available (Müller, 2005). Although these endorsements should indicate preparedness of educators who pursue additional preparation and specialization in educating students with ASD, there is little research regarding undergraduate college students majoring in special education and how they perceive preparedness upon entrance into teaching (Müller,
Therefore, the purpose of this study is to investigate the preparedness of preservice teachers from undergraduate special education programs at IHE and ACP to teach students with ASD, based on their training presented in these programs.

Current research on teaching students with ASD reveals the significance of using EBP (National Autism Center, 2009; Wong et al., 2014) in quality programming. Research continues to recognize EBP, such as effective behavioral and instructional interventions for students with ASD (Probst & Leppert, 2008; Simpson, Mundschenk, & Heflin, 2011) as quality indicators. However, the literature is deficient on how teachers, especially preservice and novice teachers, are prepared in EBP and knowledge of ASD. Special education teacher educators are re-examining what makes an effective special education teacher (Sindelar, Brownell, & Billingsley, 2010). The process should be informed by current national policy, research that has historically played a role in teacher education programs, and service delivery methods (Brownell et al., 2010).

Although the responsibility for teacher preparation may fall across these educational and administrative areas, the primary responsibility for developing special education teacher training resides with teacher preparation programs. This includes program in IHE, as well as ACP. Both program types may find themselves challenged to provide training in skills and competencies to teach students with ASD. Generic special education programs prepare teachers to work “generally” with students with disabilities. A natural consequence of this shift is that special education preservice teachers may not be adequately prepared to work specifically with students with ASD. Similarly, ACP are designed to prepare teachers generally (Quigney, 2010; Rosenberg & Sindelar, 2005). Simpson et al., (2011) further proliferate the explicit need for
teachers who teach students with ASD to have “a specialized knowledge and skill sets, but the trend is toward a cross-categorical and non-categorical teacher preparation” (p. 4).

Competencies and skills outlined by Council for Exceptional Children (CEC; 2010) and the Autism Society of America (ASA), as well as those supported by research (Callahan, Henson, & Cowan, 2008; Scheuermann et al., 2003; Simpson, 2005), propose the application of EBP in working with students with ASD. NCLB (2002) defines EBP as strategies that are supported by “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs.” Bain, Brown, and Jordan (2009) note that the utilization of evidence-based outcomes is a federal mandate based on the NCLB (2002) and the Individuals with Disabilities Education Improvement Act (IDEIA, 2004; Bain et al., 2009; Odom, Boyd, Hall, & Hume, 2010; Yell, Drasgow, & Lowrey, 2005). Although there is no one treatment that has been established as universally effective for all students with ASD, a number of interventions have been marked as evidence-based and are considered best practices (Stahmer & Aarons, 2009).

Clearly, based on research about students with ASD, there exists a core area of deficits that should be addressed as a part of their program and curriculum. Core deficit areas, which greatly impact learning, include, communication, social skills, and restricted and narrowed interests (Ruble, Usher, & McGrew, 2011; APA, 2013). Continued controversy remains as to which EBP are the most relevant, effective, and beneficial for students with ASD (Simpson et al., 2011). Shyman (2012) states that there continues to be a debate among special educators regarding promising and most effective educational methodologies. For example, Applied Behavior Analysis (ABA) is strongly considered, and perhaps the best illustration of EPB in the field of ASD. However, Shyman (2012), contends that perhaps this assertion may be
premature and confounded by various methodological considerations including low sample sizes, and lack of fidelity of implementation measures between research and practice, making it dubious to consider such approaches as the only approach worth of inclusion in a teacher preparation program. (p. 188)

Simpson et al., (2011) discuss the importance of “creating structured settings for all children and youth with ASD as a prerequisite for applying and evaluating interventions and treatments” (p. 13). Further, these structured environments provide students with ASD with clear expectations of tasks, indicators of their daily schedule, and visually clear behavioral expectations.

Theoretical Framework

The guiding and theoretical framework for the proposed study is based on the review of research regarding the theory of expertise (Ericsson & Smith, 1991) and the role that deliberate practice, feedback and motivation play in the field of education. Ericsson, Kramp, and Tesch-Romer (1993) proposed that to consider oneself an expert, ten years of training, practice and performance must be completed. Further, for one to excel at the highest rate, an estimated 10,000 hours must have been achieved (Litzinger, Lattuca, Hadgraft, & Newstetter, 2011). Deliberate practice is the notion that an individual develops a conceptualization of his or her area of expertise, as well as the application of the knowledge and skills the individual has acquired (Litzinger et al., 2011). As important as practice, feedback during deliberate practice is essential in the development of expertise. The provision of feedback informs an individual and gives insight regarding performance (Ericsson et al., 1993). In order to maintain the skills acquired, motivation and commitment to the field facilitate the expression of individual expertise. Commitment to deliberate practice in the area of expertise surpasses that of other individuals who merely express an interest in a skill area (Ericsson & Charness, 1994).

A critical difference between novice and expert is that the expert possesses more knowledge in their area of expertise, and consequently is able to apply this knowledge more
Effectively (Sternberg & Horvath, 1995). Expert teachers are able to apply their content knowledge in tandem with pedagogy, while developing effective plans and interventions for student success. “The expert teacher is a focal element in the movement toward excellence in education” (Sternberg & Horvath, 1995, p. 16). Knowledge, as it relates to current expectations of teacher preparation, implies that novice teachers have a core set of information in regard to the topic they will teach. NCLB (2002) requires teachers to have a well-developed knowledge in a core subject in order to be considered a “highly qualified” teacher. In addition, teachers should possess a well-developed knowledge about the disabilities of the students they will be teaching (Simpson et al., 2011).

Aligned with the deliberate practice component of Ericsson’s model of developing expertise, the Texas Education Agency (TEA) provides educator preparation programs, those in IHE and ACP, with guidelines for the preparation of teachers in the state of Texas. According to TEA’s Administrative Code (Chapter 228, Rule §228.35), preservice special education teachers are required to complete 30 clock hours of field-based experience prior to the student teaching placement. Student teaching placement is required to be a minimum of 12 weeks. When considering the concept of deliberate practice and the development of skills to work with student with ASD, candidates should be provided deliberate and sustained practice with carefully constructed tasks.

In order for deliberate practice to be effective, the critical component of feedback (Ericsson & Charness, 1994) must be available. Opportunities for hands-on learning and feedback regarding their demonstration of knowledge in content areas, as well as pedagogy, are imperative to the development of novice teachers (Kyriacou, 1993). IHE and ACP preservice teachers are to be provided feedback by a mentor teacher and supervision from an experienced
educator (TEA, 2008). The responsibility for providing a mentor falls on teacher preparation programs. School districts assist by providing a classroom and students for deliberate practice to occur. School districts also may provide an experienced teacher from whom to learn and receive additional feedback. Scheuermann et al. (2003) address the need for feedback in preparing teachers of students with ASD and suggest that teachers be afforded a mentor who has a skill set in ASD and who can provide the technical assistance needed to be an effective teacher.

The last component of Ericsson’s theory of expertise (Ericsson & Smith, 1991) states that drive and motivation are often the impetus that leads to expertise in the field. To motivate is to encourage or create an impulse, an emotional desire, or physiological need, an incitement to action. Stephens and Fish (2010) summarize extant literature on motivating factors for pursuing teaching as a career and reported intrinsic and altruistic reasons. General motivating factors were a desire to work with children, shape the future and make a social contribution. Teachers pursuing a career in special education were motivated by their empathy toward students. Some participants shared that they had family members who received special education services and being part of that process brought them to the field. Special education teachers shared that they were motivated by previous experiences with students with disabilities, which encouraged them to pursue a career in special education.

Knowledge, practice, feedback and motivation are all integral elements in Ericsson’s Theory of Expertise (Litzinger et al., 2011). Although novice teachers are not expected to become experts within their first years of teaching, the support they are given and the internal drive or motivation that they have can lead to teachers who can work toward the status of an “expert.” It is imperative that all four elements are nurtured and encouraged within the novice
years of teaching to support positive experiences for both the teachers and the students they are serving.
APPENDIX B

DETAILED METHODOLOGY
A qualitative research design was selected for this study, as qualitative research is “concerned with the nature, explanation and understanding of phenomena” (Ryan, Coughlan, & Cronin, 2009, p. 309). Specifically, in-depth, semi-structured interviews were utilized because they allow the researcher to explore participants’ experiences and interpretations, and uncover the “meaning structures that participants use to organize their experiences and make sense of their worlds” (Hatch, 2002, p. 91). Qualitative analysis is often used to investigate teachers and teacher development (Gall, Borg, & Gall, 1996). Research questions in qualitative research are posed to serve as a guide for the study (Agee, 2009; Hatch, 2002; Richards, 2009). Qualitative research questions support a reflective and iterative process leading the researcher to data that “can add knowledge to a larger field of study” (Agee, p. 422), as such may be changed and adapted through the research process. Qualitative analysis has been used to investigate many aspects within the field of special education (Bratlinger, Jimenez, Klingner, Pugach, & Richardson, 2005).

Purpose of the Study

As prevalence rates of ASD increase, so will the need for qualified teachers who are knowledgeable regarding the characteristics of ASD and EBP for effective instruction. The role of IHE and ACP in disseminating this knowledge is critical. Although the use of EBP in special education classrooms (Burns & Ysseldyke, 2009; Sarakof & Sturmey, 2004; Sulzer-Azaroff, Hoffman, Horton, Bondy & Frost, 2009) and the effectiveness of preservice preparation for special education teachers (Brownell, Ross, Colon & McCallum, 2005; Ferguson & Womack, 1993; Wilson, Floden, & Ferrini-Mundy, 2001) have been researched, little research has been conducted related to the teacher preparation of preservice teachers' to teach students with ASD (Bölte, 2014; Scheuermann, Webber, Boutout, & Goodwin, 2003). The purpose of the present
study was to explore novice teachers’ perceptions of preparedness to teach students with ASD and to examine their knowledge about ASD and EBP associated with teaching students with ASD. This study was guided by the following research questions:

1) What do novice special education teachers of students with ASD know about ASD?
2) How do novice special education teachers describe EBP related to teaching students with ASD?
3) How do novice special education teachers describe their preservice training experiences related to ASD?

Participants

Participants for this study were novice special education teachers of students with ASD. Novice teachers are defined as teachers with three or fewer years of teaching experience (Barrett et al., 2002; Casey, Dunlap, Brister, & Davidson, 2011; Jones, 2009; Roberson & Roberson, 2008). In addition to meeting the definition of novice teacher, participants currently (a) hold generic teacher certification; (b) teach in the state of Texas; (c) teach in a classroom specifically designed for students with ASD; and (d) have not pursued advanced studies beyond the bachelor’s degree, if preservice training was in an IHE or have not pursued advanced studies in an IHE related to autism if preservice training was received from an ACP. The first six individuals who expressed an interest in participating and who fit the criteria for the study were selected as participants. Table 1 summarizes the participants’ demographics.

Participants were recruited through purposeful sampling in school districts in North Central Texas, and through social networking sites, such as Facebook. The intent of purposeful sampling was to recruit participants who, because of their characteristics (Morse & Richards, 2002), could provide an information-rich perspective (Sandelowski, 2000). Capitalizing on the
power of social network recruiting, participants were also sought from websites, such as Facebook (Hirsch, Thompson & Every, 2014). Nominated/snowball sampling, by which participants already in the study recommended other individuals to invite to participate (Gall, Borg, & Gall, 2003; Morse & Richards, 2002) was also utilized. This type of sampling provides the researcher with a group of participants who are active in the field and who are able to provide intensive insight (Onwuegbuzi & Collins, 2007).

**Participant Demographic Profiles**

Participants in the current study included six teachers in self-contained classrooms for students with ASD. Table 1 summarizes the demographic information of the participants. Participants were assigned pseudonyms to ensure anonymity. Of the participants, five were female and one was male and ranged in age from 24-39. Three of the participants graduated from four-year universities with degrees in interdisciplinary studies. The remaining participants (n=3) graduated with degrees in ABA, physical education, or general studies and participated in ACP to acquire their teaching certificates. Consistent with the definition of “novice” teachers, participant’s had between one and three years of experience (Jones, 2009) in a classroom for students with ASD, with these being their initial teacher placements.

**Introduction to the Participants**

Anne is a 39-year-old female, in her first-year of teaching students with ASD. Although she has not been in the classroom previously as a teacher, she has worked as a paraprofessional six years. Additionally, when she was in junior high, she began volunteering with a student who was blind. Her decision to pursue teaching in the field of ASD was assured when her son was identified as a student with ASD. She also worked at the Autism Treatment Center, however, she left when she felt intimidated by a 23-year-old with ASD. She continued following this
population by working at local churches that supported students with special needs, and found herself drawn to the students with ASD. She graduated from a distance learning, four-year university program and received a degree in interdisciplinary studies with a specialization in special education. Anne was not required to participate in student teaching, as her university allowed her paraprofessional experience to fulfill this requirement. Generalist certification provides her with the credentials to teach early childhood through twelfth grade. Her classroom, which is designed for students with ASD, or students who require a high degree of structure and communication support, is made up of eight students, six of whom have an eligibility of ASD. The students served in her classroom range in grades one through six and she has the support of two paraprofessionals.

Cynthia is a 29-year-old female who has been teaching students with ASD for two years. She has a four-year degree in behavior analysis and completed an alternative certification program to receive her special education certification. Cynthia began working with students with special needs in high school when she volunteered at her local high school both in classrooms and in Special Olympics. She also assisted in her mother’s special education classroom at the same high school. Before pursing her undergraduate degree, Cynthia worked as a paraprofessional in a preschool classroom for students with ASD for two years. These experiences confirmed that Cynthia wanted to be a teacher in a classroom for students with ASD. Cynthia currently has four students in her classroom, all of whom have an eligibility of ASD. The students she teachers range in grades nine to twelve. She has two paraprofessionals who support her and her students both in the general education and the special education classroom.

Elizabeth is a 24-year-old female who graduated with a Bachelor’s of Science degree in education with a specialization in special education from a four-year university and is in her first
year of teaching. This degree prepared her for teaching students who fall in the “mild/moderate” area of severity. Although technically teaching her first year in a classroom for students with ASD, she served as a long-term substitute in this classroom before she was hired. Elizabeth shared that before she got into teaching, she had influences from her mother, who was a school psychologist. She also worked in her senior year of high school in the preschool program for children with disabilities (PPCD) classroom. Though she had already planned on pursuing education and teaching, it was not until after these experiences that she solidified that special education was the direction she wanted to go. At this point, her experience had primarily been with students with Down Syndrome and mild learning differences. However, during her preservice education, she was placed in an “autism room” at a local school. This was her first practicum and she was “terrified.” Once in the classroom, she fell in love and knew, “This is what I’m going to do. This is what I want my classroom – my dream classroom would be this classroom.” Her current classroom has five students, and the support of two paraprofessionals and a sign language interpreter. She has students from kindergarten to fifth grade who transition into the general education classroom as needed.

Emily is a 39-year-old female who has been teaching individuals with ASD for three years. She has a four-year degree in general studies, with a focus in applied behavior analysis, psychology, and learning technologies. She pursued her education further through an alternative certification program, which provided her with certification in special education. Before she pursued her degree, she was a substitute teacher in both general education and special education classrooms. After these experiences, she recognized that her interests were grounded in working with students with ASD. This led her to pursue a paraprofessional position in a classroom for students with ASD, which she held for two years while finishing her bachelor’s degree. At the
time of the interview, her self-contained classroom for students with ASD was comprised of six
students with an identified eligibility of ASD. The grade levels ranged from kindergarten to
fourth grade. She is supported in the classroom by two paraprofessionals who aid her students
both in the classroom and in the general education setting.

Kyle is a 30-year-old male who graduated from a four-year university and received a
bachelor’s degree in physical education. He later received his certification to teach special
education from an alternative certification program. Within his coursework for his bachelor’s
degree, he participated in an adaptive physical education class where he was given the
opportunity to work with students with ASD. At the time of the study, he was in his first year of
teaching and has eight students, all of whom had an eligibility of ASD. He also has one
paraprofessional supporting him in his classroom. A majority of his students were served in
inclusion settings, ranging in age from kindergarten to fourth grade. He spoke to the
collaboration between all special education staff members on his campus who help to support the
students in his classroom.

Melanie is a 25-year-old female who, at the time of the study, was in her second year of
teaching students with ASD. Melanie attended a four-year university and received degree in
interdisciplinary studies with a specialization in special education. Her special education degree
was generic in nature and did not provide her with specific training in working with students
with ASD. She began working students with ASD in her mother’s special education classroom.
Melanie assisted in the classroom, as well as babysat for students from her mother’s classroom.
She worked one summer as a paraprofessional during an extended school year (ESY) program.
These experiences led her to pursue a teaching career in special education, and more specifically
with students with ASD. Her current classroom has six students, all identified with the eligibility of ASD and she has two paraprofessionals who assist her in the classroom.

The Institutional Review Board (IRB) of the University of North Texas has approved this research. Each participant received a letter detailing the expectations for participation in the study, as well as a letter of informed consent prior to beginning the project (see Appendix F). Head (2009) suggests the use of incentives in qualitative research to encourage participation. Each participant received a $25 gift card in recognition of his or her time. As an additional incentive, the researcher used the Excel random function to generate a winner from the group of participants of a Kindle Fire at the completion of the interviews.

**Interviews**

Data for the study came primarily from semi-structured interviews. Semi-structured interviews are a type of interview in which the interviewer asks a series of structured questions and then probes more deeply with open-ended questions to obtain additional information (Gall, Gall & Borg, 2007). Each participant was interviewed three times over a three to five week period, consistent with the Seidman method (2006) of interviewing. This phenomenological process of in-depth interviewing provides information regarding the context of participant behaviors, which leads to an understanding of the meaning of their behaviors. Each participant took part in three interviews over a three to five week period, ranging from 90-120 minutes, which gathered information about the (a) preservice training experiences, (b) knowledge of ASD, and (c) knowledge of EBP of novice special education teachers of students with ASD.

Interviews were recorded by the researcher and transcribed by verbalink.com.

The interview questions (see Appendix G) were original and guided the interview. When necessary, the researcher used follow-up questions to clarify meaning and encourage participants
to elaborate on responses given. Three experts in the field of ASD were asked to review the
interview questions for validity (Hardesty & Bearden, 2004), which helped ensure the questions,
were relevant to the topic and field being studied. Experts held the following positions; director
of assessment at a university-based center for children with autism, Board Certified Behavior
Analyst (BCBA) and owner of a private clinic for students with autism, and a professional who
provides support to teachers of students with autism at a large school district in north east Texas.
Prior to beginning the participant interviews, a pilot interview was conducted with one additional
participant to confirm that the interview protocol was both meaningful and relevant (Ducy &
Stough, 2011; Turner, 2010).

As a measure of reliability, all participants were asked the same questions and the
interview procedure was explained before the interviews began. Information questions,
including background and personal information were discussed initially with the intention of
establishing rapport between the researcher and the participants. General information questions
(e.g., educational background, years of teaching experience, interest in autism) were used to
begin the dialogue with participants, which helped to foster a relaxed conversation and interview
(Hatch, 2002). The researcher checked with participants for clarification throughout the
interviewing process. Member checking or participant verification is a qualitative inquiry
methodology that is considered a quality control process whereby the researcher seeks to
improve the accuracy, credibility and validity of what has taken place during an interview

Interviews were recorded and transcribed. Collectively, 18 interviews provided 260
pages of transcribed data. Participants were sent a copy of the transcript to review after each
interview, which provided an opportunity for the participants, and the researcher, to clarify
information from the initial interview and allowed the participants to assess intentionality, provide additional information, correct error of fact, volunteer additional information and summarize as a member check procedure (Creswell & Miller, 2000; Lincoln & Guba, 1985).

Field Notes

Consistent with qualitative inquiry and supporting the need for the convergence of data sources (Lincoln & Guba, 1985), the researcher utilized Vockell and Asher’s (1995) field data model (i.e., field jottings, field notes, field diary and field logs) to generate field data, a third data source. Systematic field notes were collected after the interviews. Field notes related to the interviews were written to document relevant extra-interview encounters with the participants (Bratlinger et al., 2005).

Field data serves as a recording of additional in-depth information gleaned from the interviews, and a reflection of the researcher’s experiences as a novice teacher in a class for students with ASD. Reflexivity within qualitative research is the act of the researcher focusing on himself or herself as an interpreter of the social reality being studied (Gall, Gall, & Borg, 2007). This concept was present early in the research, as research questions were driven by what the researcher wanted to know and how data will be interpreted based on previous knowledge and experiences (Srivastava & Hopwood, 2009). The researcher recognized that this project has its origins in her own experiences as a novice special education teacher of students with autism 19 years ago, giving the researcher a unique opportunity, while interviewing novice teachers, to construct a reflective field diary simultaneously with the interviews, and interpret data that may represent an intersection between the researcher’s experiences and those of the participants (Glesne, 2006; Macbeth, 2001).

Data Analysis
The research questions for this study were explored using data from participant interviews and researcher field data. Collectively, 18 interviews provided 260 pages of transcribed data. Interview and field data were analyzed using the constant comparison method, described by Lincoln and Guba (1985) as a “continuous and simultaneous collection and processing of data,” (p. 335). Constant comparison of data allows categories to emerge that fall into descriptive and explanatory classifications and according to Leech and Onwuegbuzie (2011) is one of the most utilized analyses undertaken by qualitative researchers. First, units of data were identified from within these categories and coded to establish patterns and themes within the data (Taylor-Powell & Renner, 2003). Further, this method establishes evolving categories that will inherently develop a theory from the data (Glaser & Strauss, 1967).

The researcher identified themes around knowledge of ASD, knowledge of EBP, and perceived preparedness to teach students with ASD. In order to discover relationships, the interview data were coded using QSR International’s NVivo 10® (2010) software as a tool to collate the data. Coding leads to convergence, which leads to established themes and relationships (Guba, 1978; Miles & Huberman, 1994). In the first step in the analysis process, the researcher worked to establish inter-rater reliability (IRR) in code and theme analysis, which is a method used to solidify the interpretation of the themes and codes associated with a study (Marques & McCall, 2005). Marques and McCall (2005) suggest that outside raters, with no connection to the study, but who have a working knowledge of the study topic, provide an independent analysis of the data, which will remove bias from the interpretations. Two outside raters, doctoral students with experience working with students with ASD, coded all three interviews of a randomly chosen participant. The IRR coders and the researcher met to compare the codes established after reading the interviews and coding line-by-line. Each outside rater had
approximately one week to code the three interviews. The codes delineated from the IRR codes were compared to the codes established by the researcher. After a group discussion of codes and comparing the meaning and interpretation of the codes, the researcher created a codebook (DeCuir-Gunby, Marshall, & McCullough, 2011).

The codebook is a set of definitions and examples used to help analyze the interview data, (see Appendix E), and which was used to establish the final codes for data analysis. Once created, the researcher shared the codebook with the IRR coders, who then coded all three interviews from another randomly chosen participant. The team met once more to discuss the findings and the association between all coders’ responses and the new set of codes. There was consistency among a majority of the codes; however, the coders had difficulty in establishing a cohesive description for the codes labeled “novice” and “alternative certification,” which prompted a discussion of the definition of the codes, as written in the codebook, as well as the IRR coders’ interpretations of the meaning of each code. When looking at the code of “novice” the researcher’s codebook definition read as follows, “participant references anything that describes being new to the classroom.” The vagueness of the words “anything” and “new” created a topic of discussion that led the researcher to recognize that “novice” should be further defined as references that discussed any aspects of the classroom or teaching experience that revealed indicators of being new, including comments such as “I haven’t done this before,” or “since it’s my first year.” The researcher recognizes that the concept of novice could, indeed, be obscure due to the fact that previous classroom and personal experiences may cloud the perception of “novice.”

Once the codebook was established, the researcher began coding the 260 pages of interview data using NVivo 10® (2010). During this phase of coding, the researcher used open
coding to categorize the participants information, looking for both similarities and differences in the data. Data analysis continued until each data source was coded completely. Through the codes, themes associated with knowledge of ASD, knowledge of EBP, and perceptions of preservice training were discovered. Visual representation of the codes, themes, and the relationship between them (Miles & Huberman, 1994) are found in Figure 1.

Trustworthiness in qualitative research is established to maintain consistency and to ensure that the data are relevant and dependable to the reader (Lincoln & Guba, 1985). The researcher utilized several methods to ensure trustworthiness. Establishing a standard codebook for data analysis ensured coding consistency across interviews. Further, prior to the interviews, the researcher conducted three practice interviews with novice teachers who did not meet full requirements as participants, giving the researcher the opportunity to reflect on the interview questions and their pertinence to the study. Participant reviews of transcripts created member checks, which ensured the reliability of the information presented during interviews.

**Researcher Bias and Reflectivity**

Due to the fact that the researcher based this study on prior experiences as a novice preservice teacher reflecting on quality preservice training experiences, the researcher recognizes that researcher bias may pose a threat to the data. To address bias, the researcher confirmed with the participants that the goal was to gather information to add knowledge, rather than to pass judgment. Field notes were taken during the interview process as a means to reflect on data gathered and personal impressions of data collected. This allowed for another perspective of the data, as interpreted by the researcher (Charmaz, 2006).

**Triangulation**
Bloomberg and Volpe (2008) describe triangulation as “multiple methods of data collection” (p. 73) that help gather a thorough understanding of the phenomena being studied. Multiple data sources in this study included verbatim transcripts of recorded interviews, field notes, and member checks to ensure interview data were recorded accurately. The checks and balances included in these three sources support a system of truthfulness. The researcher’s reflections in field notes, coupled with member checks, which address face validity, and compared to interview data, create a substantiation of participant information.
APPENDIX C

COMPLETE/UNABRIDGED RESULTS
The results are divided into three sections. The first section summarizes the results of participants’ positions regarding knowledge of autism spectrum disorders (ASD). Foundational to qualitative research, thick descriptions of participants perceptions are reported (Patton, 2002). In the second section, participant knowledge of EBP are discovered, which will be represented by direct quotes from the participants. The third, and final section, reports participants’ perceptions of their preservice preparation programs, again utilizing direct quotes from participants.

Knowledge of ASD

For classroom teachers of students with ASD, a working knowledge of the characteristics of ASD is imperative. The participants demonstrated a comprehensive understanding of core deficit areas and how these deficits affect a student’s participation in the classroom. Knowledge of ASD was evident within the codes “preservice influence,” “personal influence,” “novice,” “confidence,” “challenges,” “preservice training,” and “knowledge of ASD”. The code “knowledge of ASD” identified participant understanding of the core deficits of ASD, including communication, social skills, and restricted interests, as identified by the DSM-IV-TR (2000). All participants recognized that the core deficit of communication affects students with ASD across all environments, as indicated by participants referring to communication a total of 65 times (Table 2) across their interviews.

Anne noted, “If you can’t communicate and you can’t understand what I’m saying to you, then it’s going to be harder for you to learn.” Cynthia said, “Sometimes kids can echo what you say, and people can mistake that as communication. That’s not communication.” The recognition of communication deficits as a marked differential for individuals with ASD is indicative of knowledge of ASD. Furthermore, the identification of social deficits of ASD was
referenced a total of 126 times, with all participants recognizing that this is a defining characteristic of ASD. Repetitive and stereotyped behavior is one of the core deficits of ASD, which was only mentioned six times by two participants. The two participants who mentioned repetitive and stereotyped behavior, Emily and Melanie, both had several students who had marked differences in this area. Behavior difficulties were mentioned by all six participants a total of 44 times, with one participant, Cynthia, mentioning it 24 times. This is noteworthy, as the high school students in Cynthia’s class had significant behavior issues. Table 2 reflects word counts for each of the codes associated with the theme knowledge of ASD.

Regarding how the participants gained their knowledge about ASD, several maintained they gathered some of their knowledge in general special education classes during their preservice program. Only three of the six participants (Anne, Melanie, and Elizabeth), graduated from four-year universities with a degree in interdisciplinary studies. These participants followed what would be considered a traditional route to education. Only one participant, Anne, took an online course on ASD in her university-based preservice preparation. She described the class as practical and one that she continues to use the resources she obtained in the course. Anne is also the only participant of the three who graduated from traditional preparation programs who took a class that focused entirely on ASD. Elizabeth was placed in her first practicum in a class for students with ASD and walked away realizing “I want to do that.”

The other three participants graduated with degrees in applied behavior analysis, general studies, and physical education. Emily, who took upper level, applied behavior analysis (ABA) courses, shared that several of her courses in ABA discussed autism, “covered autism” rather, but there was no one course specifically dedicated to ASD. Cynthia credits her “fantastic” undergraduate degree in ABA, where she took two classes on ASD, with providing her with the
foundational skills needed to teach students with ASD. She shared that these classes were spent designing specific educational programs for students with ASD. It was this type of experience, coupled with previous experiences as a high school student working with individuals with ASD that lead her to the field. These three participants, because their undergraduate programming was not in education, had to complete an alternative certification program (ACP). All three participants spoke strongly that their ACP did not give them the information they needed to teach students with ASD. Additionally, they expressed concerns regarding the participation of the ACP mentor in leading them in the correct direction as special educators, more specifically as teachers of children with autism. The program mentors had very little knowledge of ASD and often applauded the participants as having adequate knowledge for teaching students with ASD. Emily shared that her mentor had never been in a classroom for students with ASD. She previously worked as a reading specialist and provided Emily with information about working with students with attention deficit/hyperactivity disorder. Emily’s mentor, after six classroom visits, stated, “You know what you’re doing here. Good job.” Cynthia, who had an undergraduate degree in ABA, and spoke highly of the education she received there; however, she did not have the same experience in her ACP. She shared a challenge with her ACP program:

As you’re taking these courses and it has teeny, tiny, little paragraph about special education and talks about the IEP (individualized education plan) meetings and maybe it mentioned autism, as you could have kids with Down syndrome, you could have kids with autism, you could have kids with learning disabilities, and then that’s it. That’s all you got.

Through lived experiences in both collegial and personal settings, many of the participants gleaned their knowledge of ASD, which prepared them to be effective teachers of students with ASD. This ranged widely from experiences at church, to family members being
involved with students with ASD, to working at summer camps that had students with ASD in attendance. Anne, Cynthia, and Elizabeth all began volunteering in special education classrooms while in junior high or high school and each spoke to the hands-on experience they gained. Melanie’s experiences were similar, in that she began working in her mother’s classroom for students with ASD, which led her to work at a summer camp for students with ASD. She enjoyed it so much that when she finished the summer job, she said, “I loved being there, so I thought, ‘Well, this is what I want to do.’” A strong base of knowledge of ASD is the foundation for being effective as a teacher. The participants used their experiences both in their preservice education programs and personal lives to equip them to be competent teachers of students with ASD.

Evidence Based Practices Related to Teaching Students with ASD

Confirmation of participants' understanding of the concept of EBP and application of these practices in the classroom was explored through discussions of "established" and "emerging" EBP established by the National Autism Center’s (NAC) National Standard’s Report (2008) and the NPDC (Wong et al., 2014) compilation of interventions. This information was utilized to identify a comprehensive set of EBP for the purpose of this research. The theme knowledge of EBP was reflected in the codes “preservice training,” “professional development,” “established EBP,” “emerging EBP,” and “knowledge of ASD.” The NSP’s (2009) indicators reflect strategies that have been scientifically identified as promising or emerging practices for students with ASD, for example, ABA, Social Stories™, Visual Strategies, Schedules, Naturalistic Teaching, Reinforcement, and Picture Exchange Communication Systems (PECS). EBP that were identified and discussed by participants included visual strategies, applied
behavior analysis, naturalistic teaching, social narratives, and reinforcement. The three most mentioned EBP were ABA, visual strategies, and naturalistic teaching.

*Visual Strategies*

The NPDC report (Wong et al., 2014) identifies visual strategies and supports as:

> Any visual display that supports the learner engaging in a desired behavior or skills independent of prompts. Examples of visual supports include pictures, written words, objects within the environment, arrangement of the environment or visual boundaries, schedules, maps, labels, organization systems, and timelines. (p. 22)

Visual strategies were mentioned by all six participants a combined total of 133 times (Table 3). Though the terminology "visual strategies" was not used directly, it was clear that participants had an awareness of the need for visual assistance among students with ASD. Each participant spoke of using some type of visual schedule with his or her students throughout the day. Emily stated that she has some students who require a visual schedule in her classroom, while she has other students who are unable to follow a visual schedule independently.

Melanie works in a school district that is ABA based, which does not typically ascribe to the use of visual strategies for students with ASD. However, through prior experience and knowledge about of students with ASD, she recognized that these students need visual cues and that some have difficulty processing auditory information. Despite district preferences for programming associated with ABA, Melanie used visual cues in the form of photograph on her iPhone™ or the students’ iPad™ to prepare them for transitions between activities. This afforded her with the opportunity to take advantage of her student’s strengths and utilize this EBP.

Elizabeth’s school district is also has an ABA based program and does not typically use visual strategies. When asked directly if she used visual strategies she stated, “To be honest, I don’t. I probably should use it a little bit more.” Emily indicated that she received professional
development from her regional educational service center on the use of visual supports for students with ASD. She reported that her school district's programming is established based on student need, which includes visual supports and structure. She went on to explain that she has some students who are able to follow a visual schedule independently, while others need additional redirection from staff, and some students are not able to follow a visual schedule at all. Regarding visual schedules, Emily reported, “They like to know what’s going to happen. My students who use the schedule, they come in every day and look at their whole schedule. They’ll point and go down and say ‘okay, this is what I’m doing today.’ They don’t say it out loud, but that’s what they’re doing. They’re looking at what their day is today. I think it’s helpful.”

Kyle refers to the use of visual schedules as a form of communication and one that most of his students’ need. He also discussed how when he first started teaching he had all students using the same visual schedule. After several weeks he realized that this system wasn’t specific enough and adjusted the schedules to meet the individual needs of each student. He expressed that the use of the visual schedules helps his students become more independent within the classroom, around the school, and in the general education setting. When asked if visual supports address student behaviors, his response was, “Yes, absolutely, because the routine’s there and they know exactly what’s coming, there’s no surprises in a day.”

*Applied Behavior Analysis*

Other EBP that participants regarded as a routine part of their programs included principles of ABA. The NAC’s report (2009) indicated there were several “established” EBP, which are indicative of ABA. ABA, or expressions of ABA, was mentioned 87 times in this study (Table 3). All participants referenced ABA in their interviews, with the majority of the references coming from the participants who either took ABA courses in their undergraduate
program, or who worked in ABA-based school districts. Emily, Cynthia, and Melanie, graduated from traditional preservice preparation programs took courses in their undergraduate program in ABA and two participants, Melanie and Elizabeth, teach in school districts that were explicitly proponents of ABA. While in high school, Cynthia, who later graduated with an undergraduate degree in ABA, worked in an ABA-based home program for several students with ASD. “It just opened up this whole other world to me,” stated Cynthia. When she went to college, she worked with children with ASD in home-based programs. Once employed as a teacher of students with ASD, Cynthia acquired additional information about using ABA in school-based settings through in-service trainings provided by the school district and regional education service center, and attendance at local conferences on the topic.

Two participants responded with additional information about the use of shaping and reinforcement to increase appropriate behaviors. Elizabeth, whose school district is considered an ABA-based district, shared that the district conducted a four-day ABA-based training session in the summer for novice teachers on techniques and strategies to use in the classroom. “They teach all the different practices about manding and all of those different events and the VB-MAP™,” Elizabeth stated. She discussed additional ABA based strategies, such as errorless teaching, pairing reinforcers, teaching to fluency, and most-to-least prompting. She suggested that ABA could be used to interrupt or eliminate negative behaviors, as it often reduces the frustration level of the students. Emily discussed the use of shaping, and positive and negative reinforcement. She referred to ABA as a “science.” She learned these strategies in her undergraduate studies, which shaped how she utilizes these strategies in her current classroom. She also revealed that many of the strategies associated with ABA she learned through her
experiences as a paraprofessional in a classroom for students with ASD, which she did for three years before completing her undergraduate degree.

Naturalistic Teaching

Five of the six participants made reference to naturalistic teaching in their classrooms, for a total of 39 mentions (Table 3). NPDC (Wong et al., 2014) describes naturalistic interventions as set of interaction techniques associated with ABA designed to “encourage specific target behaviors based on learners’ interests by building more complex skills that are naturally reinforcing and appropriate to the interaction” (p. 66), which typically are introduced and reinforced within natural environments for the learner (Nichols, 2012). Cynthia referred to using naturalistic teaching with her students in physical education where she knows the student is having behavioral difficulties. She employs this strategy to address behavioral and communication goals and objectives. Elizabeth’s references to naturalistic teaching were in the context of providing students with learning opportunities that focused on manding, playing games, taking turns, and using their language. Her students have several opportunities throughout the day with multiple classroom staff members to encourage generalization. She indicated that this is her favorite part of her job. She provides her paraprofessionals with scripts and prompts to be used with her students in this environment, working primarily on communication and play. “It’s just naturally happening and they’re having fun,” she stated. Melanie shared that she teaches within the natural environment as often as she can, depending on her students’ abilities to generalize skills. Some of her students do not respond to discrete trial training at the table, therefore introducing a skill in the natural setting is the most beneficial. Emily and Kyle briefly mentioned teaching play through the “natural setting,” which, though not specifically referring to “naturalistic teaching,” is at the core, a reference.
Social Narratives

All participants recognized that students with ASD have difficulty with social skills. Each participant referenced the use of “Social Stories™” (Gray & Garand, 1993), which fall into the EBP category of social narratives (Wong et al., 2014). All participants mentioned Social Stories™, for a total of 26 mentions (Table 3). The participants spoke of “Social Stories™” in relation to helping students in social situations, including issues regarding student behaviors, such as screaming, as well as more sensitive subjects related to student behaviors and privacy. Social narratives can be used to help explain upcoming changes in students’ routines and schedules as well. Social narratives and Social Stories™ provide students with alternative and appropriate responses to situations (Wong et al., 2014).

Kyle reported that making changes in a student’s visual schedule regarding the student’s rigidity within the structure of the routine was not enough to elude potential behaviors. He shared, “We started to deliberately change his schedule a bit more to get him used to it, and then we also used Social Stories™ with him about flexibility and just how different things happen.” Melanie shared that her students respond well to Social Stories™. “When you go somewhere, this is how you’re supposed to act, and this is what’s expected of you. Just knowing those things in advance sets you up to be successful,” stated Melanie.

Melanie, Elizabeth, Anne, and Emily acquired information regarding writing Social Stories™ from their undergraduate programs. Elizabeth shared that she learned writing Social Stories™ outside of the context of students with ASD. She also learned hands-on while working in a school during summer programming. This appeared to be a common theme among participants. They learned about Social Stories™ through watching other professionals use them, and then carried this over into their own classrooms. All participants, but one, believed
that Social Stories™ were a valid and useful strategy for teaching students about social situations. Emily critiqued utilizing Social Stories™ in her classroom:

I don’t think a social story is really going to teach a child with autism how to act in a situation. There’s feelings. You can’t predict what the other students are going to say and do and their tone of voice and how the student with autism is going to perceive that.

**Video Modeling**

An additional method for supporting social skills, play and daily living skills is through video modeling (Shukla-Mehta, Miller, & Callahan, 2010; Gardner & Wolfe, 2013). Half of the participants reported the use of video modeling in their classrooms. Regarding video modeling, Melanie shared, “It’s just easier to do than on paper.” She reported using video modeling throughout her day, often in place of a static visual support. Elizabeth described using video modeling to teach a student to “pump” her legs while swinging on a swing. When asked if she believed that video modeling was effective, her response was “She definitely learned how to do it.” The third participant, Emily, referenced video modeling as a strategy that she was aware of; however, due to restrictions on videoing from her school district, she is not allowed to use actual videos of students. The participants who utilize video modeling learned it through preservice university-based education program, or self-initiated professional development.

Researchers have identified that many teachers of students with ASD do not have a comprehensive understanding of EBP for students with ASD (Simpson et al., 2011). Callahan, Henson, and Cowan (2008) identified social validation for the explicit use of EBP in classrooms for students with ASD. The participants of this research were able to identify EBP and indicated that they are being used in their classrooms. They indicated they acquired knowledge about EBP and ASD through their preservice education program, as well as in their current teaching situations.
Preservice Preparation

The present study sought to explore the knowledge and skills novice teachers received in their preservice teacher preparation programs (traditional or ACP) to be effective in their role as teachers of students with ASD. Throughout the prior result's sections, references have been made to where the participants received their knowledge of ASD, as well as their knowledge of EBP. Half of the participants (n=3) graduated from programs intended to prepare them to be special educators with degrees in Interdisciplinary Studies. The other participants (n=3) graduated with degrees in ABA, physical education, and general studies and participated in AC programs to acquire their teaching certificates. Codes related to the theme preservice preparation included “alternative certification,” “preservice influence,” “preservice training,” and “knowledge of ASD.”

Preparedness

Most of the participants (n=5) had preservice influences, which either lead them toward students with ASD or reinforced their ambition to work with students with ASD. Elizabeth first worked with students with ASD when she was assigned a classroom for students with autism during a practicum experience. She shared the following:

I was actually terrified because I got put into – they call it an ‘autism room’ and I got put into that for my first practicum, and I was terrified. I went in and just fell in love. I knew “This is what I’m going to do. This is what I want my classroom – my dream classroom would be this classroom.”

Kyle had a similar experience as a physical education major in an adaptive physical education course. This experience influenced his decision to teach students with ASD, “It (the class) wasn’t specifically children with autism, but the ones I worked with, it really did inspire me to work with them, just fascinating kiddos.”
These novice teachers of students with ASD reported varied results when considering their own preparedness to teach students with ASD, as a result of preservice preparation programs. Participants who received undergraduate degrees in Interdisciplinary Studies or ABA shared that they were pleased with their programs, and the general knowledge of special education; however, the programs did not provide enough specific information and skills to prepare them to teach students with ASD. Cynthia utilizes resources from her undergraduate courses in her classroom, “… there will be times where I go to a resource, a journal article or textbooks that I have that I’ll remember something about that, and we’ll look something up and say, ‘well, let’s try this,’” and she further states “I think that most knowledge is from having that experience as an aide (paraprofessional).” Anne, who graduated from a traditional certification program, commented on her program's level of preparation, “…it did to a certain level,” however, she credits her previous experiences (i.e., volunteering in high school, working as a paraprofessional, and as a mother of a child with autism) as the impetus for her success.

Without a lot of previous experience, I think I would have been scared and run out the door because there are no textbooks that tell you the ugly side of autism. It’s the higher functioning students that you read about in textbooks (that they teach you about.) Most of my students have an IQ between 30 and 50, so it’s a different ballgame.

Participants who received their teaching certificate through an ACP, agreed unequivocally that their ACP did not prepare them to teach students with ASD. Emily received a degree in general studies, with ABA and psychology as two areas of focus. She received training in behavior modification and ABA techniques in her undergraduate program. However, by taking this route, she did not receive a teaching certificate and pursued the certificate through an ACP. Her program required her to take one online course, and then pass the state special education certification test.
You have to go through their first online course, which took me less than a day to get through. Then you take their practice test for EC (Early Childhood) through twelve special education certification. Once you pass the practice test, then you can register to take the actual certification test. You take that certification test. If you pass the test, you are then employable as a teacher.

She confidently stated that her AC program did not prepare for teaching students with ASD.

Regarding her certification program:

It had nothing to do with special education at all. I made it about special education. I had a mentor who came six times that year. She knew absolutely nothing to help me. She came in the first day, and handed me a handout on ADHD and how to handle kids with ADHD – a handout. It had no useful information for me on it. She had never been in a classroom for kids with autism. She basically came in and observed and said, ‘you look like you know what you’re doing. Good job.’

Cynthia, whose undergraduate degree was in ABA, stated the following:

My alt cert program didn’t prepare me at all. It didn’t prepare me at all with these kids. My alternative certification stuff, I did it and got done with one course and threw that stuff away because I’m just not going to use it. I’m not going to go into general education. That is not going to happen. So it wasn’t useful at all. Not at all.

_Participant Recommendations_

The most common (n=4) recommendation made by participants from university-based programs was to provide students more specialized courses specific to students’ areas of interest, in this case, autism (Table 4). Additionally, participants would like to receive practical information, relative to teaching strategies for students with ASD; strategies that could be taken directly from the preservice program and applied in the classroom. A challenge that both Elizabeth and Anne reported was the desire to receive information on structured teaching work systems, such as “workboxes,” (an organization system contained in a "box" for presenting lessons and information to students that provide them structure, independence and self-direction). Elizabeth stated that she would have liked to have had “more real life examples, videos and this is how you work with a child that’s doing this.” She also would have liked to
receive instruction on how to make “workboxes,” as well as how to prepare and use them in a classroom. Elizabeth and others wished that they had more choices (i.e., assignments, practica, readings, modules) in their coursework that were specific to their future teaching preferences. Such choices and opportunities would give students an opportunity to enhance their knowledge base and provide focus and specific skills to their ASD teaching repertoire.

Much like the novice teachers in the university-based programs, teachers from the AC program recommend offering specific courses to develop their proficiencies to teach in specialized areas. Cynthia said the following:

There’s so much more to special education than the laws, and IDEA, and the least restrictive environment and the basics of an IEP, or basics of an ARD. There’s so much more than that. There are other things we could be learning. Evidence Based Practices. Let’s talk about visuals in your classroom, one about video modeling… give me a class on writing a social story.

Furthermore, providing a mentor who has specific experience working with students with special needs was recommended. Emily proffered, “If you’re going for special education, then that’s what should be offered… some expertise should be offered. Somebody who knows should be available for consultation.” Regarding his mentor from the AC program, Kyle shared that after a while, “I felt like I was more the expert (on ASD).” These suggestions and recommendations, coming directly from novice teachers, could provide opportunities for improvement in both university-based programs and AC programs. Such improvements will directly affect programming for future special educators, and future novice teachers of students with ASD.

Discussion

A phenomenological research design was utilized in the present study to examine novice teachers’ preparedness to teach students with ASD. Six novice teachers were chosen to be
participants in the study. To investigate teachers’ perceptions, the researcher completed three semi-structured, in-depth interview sessions per participant and analyzed the content of the six participants.

Knowledge of ASD

The first objective of the study was to explore participants’ knowledge of ASD. Schuermann et al. (2003) suggest that the complexities of ASD make it more difficult for novice general special education or alternatively certified teachers to teach students with ASD. The lack of specificity in their preservice instruction leaves little room for the specialization that is required to teach students with ASD. The novice teachers in the present study demonstrated considerable knowledge of ASD, including information associated with the core deficit areas of ASD. “Personal influence,” “preservice influence,” “preservice experience,” and “preservice training,” which were codes in the data analysis, provided participants with “knowledge of ASD,” which led to “confidence” in the classroom, and the ability to address “challenges” as they arose (Figure 2).

Prior experiences with individuals with autism were consistent across all participants. Three out of six participants had experiences as paraprofessionals in special education classrooms, two of which were in classrooms for students with autism. Furthermore, several participants worked as substitute teachers in special education classrooms. Others had personal experiences as high school students, volunteering in school-based special education programs (e.g., Circle of Friends and Special Olympics). Each participant gives great credibility to these experiences in providing him or her with fundamental knowledge of ASD.

The application of Ericsson and Smith’s (1991) theory of expertise is relevant as it relates to the participants’ knowledge of ASD. A well-developed knowledge about the students they are
teaching increased the likelihood that they will be successful and also increased their self-efficacy. Only two participants were required, as a part of their preservice preparation program, to participate in student teaching experiences. The third participant who graduated from a traditional teacher preparation program was not required to participate in student teaching. She was allowed to use her experiences as a paraprofessional as a substitute for student teaching. Kyriacou (1993) indicated that novice teachers need deliberate practice and opportunities for hands-on experiences prior to entering the classroom.

Confidence and knowledge are indicators of competence (Kane, 1991). Five of the six participants indicated that they believed they were effective teachers of students with ASD. Student progress, parent approval and satisfaction, peer teacher involvement with students, and approval by campus administrators were the indications of effectiveness. Motivation indicates competence and reinforces the idea of expertise (Ericsson & Smith, 1991). All six participants indicated that it was their goal, an indicator of initial motivation, to teach students with ASD upon graduation from their preservice preparation program or AC program. This motivation was suggested by the achievement of acquiring a teaching position in a classroom for students with ASD as a novice teacher. Lastly, confidence and knowledge are indicators of competence (Kane, 1991). Five of the six participants indicated that they believed they were effective teachers of students with ASD. Student progress, parent approval and satisfaction, peer teacher involvement with students, and approval by campus administrators were the indications of effectiveness.

Notably information on autism in university preservice preparation provided limited knowledge to participants about ASD. What university prepared participants received was foundational or functional knowledge of the core deficits of ASD. Participants in ACP indicated
that ASD was rarely mentioned and that program mentors did not have an understanding of ASD or knowledge of the skills necessary to teach students with ASD. While one participant took a course on ASD, other traditionally prepared participants were not exposed to knowledge of ASD other than generally in generic special education courses.

The results of the present study indicate that novice teachers, when given opportunities to work directly with students with ASD, have a substantive knowledge of ASD, which will prepare them to be effective and competent teachers. Generally, participants indicated that they believed they were effective and competent teachers of students with ASD. Without comprehensive knowledge of ASD, these six novice teachers would have had a much more difficult time making it through their first year of teaching students with ASD. Their experiences have given them a much better chance of continuing on and thriving into their second year, third year, and so on.

**Evidence Based Practices**

The second theme explored in the present study was the presence of knowledge in the area of EBP for students with ASD. Simpson et al., (2011) reported the following:

> Many service providers seem to lack an understanding of evidence-based practice and instead resort to an assortment of interventions based on the belief that employing a multiplicity of possible interventions increases chances for success, or they rely on a novel or untested method that they have read or heard about but do not fully understand. (p. 6)

EBP based on the NPDC (Wong et al., 2014) and the NAC (2009) National Standards Project were used as the standard for indicators knowledge of EBP. Codes emerging from the interviews related to EBP included “preservice training,” “professional development, “knowledge of EPB” and “knowledge of ASD”. Foundational knowledge of ASD was achieved through preservice preparation programs. General understanding was increased through professional development, which led to a deeper understanding of “established and emerging EBP”, which ultimately
expanded their “knowledge of EBP” (Figure 3). Indicators of knowledge of EBP were mentioned throughout the interviews and coded “established EBP” and “emerging EBP.”

The prevailing noted EBP were visual supports, ABA, and naturalistic teaching with all participants reporting knowledge of visual supports and ABA. Based on the level and depth of their interview responses, participants demonstrated a robust understanding of ASD. Therefore, not surprising visual supports ranked as the most mentioned EBP, as individuals with autism are typically visual learners (Ganz, Boles, Goodwyn, & Flores, 2014). Participants reported utilizing visual supports with students with autism as tools to support transitions, communication, and to manage behavior.

ABA and naturalistic teaching, a technique associated with ABA, were additional EBP that were mentioned frequently by participants in this study. Notably two participants graduated with degrees associated with ABA, and two other participants work in school districts where ABA is the foundation for classroom instruction. Although ABA is an EBP typically associated with teaching students with ASD, Scheuermann, Webber, Boutout, and Goodwin (2003) caution that training in only one approach to teach students with ASD “sends the false message that only one approach will work with all children with the disorder” (p. 200).

Social narratives and video modeling were the two EBP that were the least mentioned. Video modeling is an EBP that has recently received considerable research attention (Gardner & Wolfe, 2013; Shukla-Mehta et al., 2010), which could provide an explanation for video modeling not being mentioned by participants as frequently as other EBP as they may have had limited exposure to the concept. The research-to-practice gap in the field of special education is elucidated by the lack of continuity of information between researchers and front-line practitioners (Dingfelder & Mandell, 2011; Reichow, 2012).
EBP learned in preservice preparation programs were mainly demonstrated and practiced in practica and internships. Participants who graduated from ABA programs indicated that they had opportunities to practice teaching strategies and interventions such as manding and shaping. Additional acquisition of knowledge regarding EBP was gained through courses on ASD, district-provided professional development, regional service center training, and online modules. Much like knowledge of ASD, the participants were motivated to seek additional information about effective programming through opportunities outside of formal university training.

The most important factor regarding EBP is that novice teachers are receiving information about EBP and using them in their classrooms. Participants who identify themselves as “self-learners” have initiated their own inquiries about EBP (self-learners) and are finding an abundance of online resources, such as the Autism Internet Modules, supported by the NPDC (Wong et al., 2014). Such efforts by participants help bridge the research-to-practice gap and places relevant information into the novice teachers’ hands.

**Role of Preservice Preparation**

The final theme explored in the present study was the role preservice preparation programs played in preparing novice teachers to teach students with ASD. NCLB (2002) requires teachers to be to be highly qualified in content areas; however, the content area specification excludes the specificity required to teach students with ASD (Brownell, Sindelar, Kiely, & Danielson, 2010; Kyriacou, 1993). Participants in the current study followed two paths to become educators of students with autism, including ACP and university-based special education preparation programs. Three participants followed the traditional route to teacher certification through an IHE and three followed the ACP route. *Theory of Expertise* (Ericsson & Smith, 1991) explores the role of deliberate practice, feedback, and motivation as precipitators
for success. University-based preparation programs recognize these as key factors in promoting effective teachers through field experience and student teaching (Leko, Brownell, Sindelar & Murphy, 2012). ACP, however, are often distance-based learning and leaves little room experience and hands-on opportunities.

Key factors that participants believed would promote effectiveness in preparation of special education teachers were opportunities for practical applications of EBP. Participants had fundamental knowledge of EBP for students with ASD, as they had been mentioned in their courses, however, they did not have opportunities to implement and practice the strategies, related to students with ASD. The lack of application further elucidates the concept of deliberate practice (Ericsson & Smith, 1991). Participants who took the traditional route to special education certification participated in observations; however they were appointed, rather than chosen, giving them classroom opportunities, but not opportunities specific to ASD. Choice in courses was an additional area of improvement the participants recommended. They would have liked to have courses specific to their area of interest, ASD, in their program. The implications of this would be preparation in knowledge of autism, as well as knowledge of EBP. One of the three participants in the traditional route did have a course in teaching students with autism; however, she still believed there could have been more practical implications of the knowledge she received.

There continues to be controversy regarding ACP as a favorable route for future special educators (Quigney, 2010). Pedagogical knowledge is often abated in special education programs, for the proliferation of content specific knowledge. Participants in this study who completed ACP reported that the information they received regarding special education was limited and directed primarily at law, lesson plans, and writing goals and objectives. Though this
information is an essential part of teaching students with ASD, it is lacking the explicit material that is most relevant to special education teachers, such as behavior management, accommodations and modifications, communication skills, and differentiating instruction. NCLB (2002) requires teachers to have a knowledge base of EBP. ACP are not addressing autism specific EBP, creating a gap between the learning process and the application of learning.

The three participants who participated in ACP all acknowledged the need for specialized courses that were specific to teachers’ areas of interest, such as autism. This was a recurring theme and was consistent across the three participants from ACP. Personal and professional experiences, such as working as a paraprofessional or university-based internships, provided the participants from ACP with the necessary skills to be effective teachers. Another area of concern for participants who followed the ACP route was the need for mentors who have experience working with students with ASD. Feedback from an experienced educator (TEA, 2008) is an indicator of quality programs (Scheuermann et al., 2003). This necessary element of teacher preparation was omitted in the ACP of the three participants in the present study. A mentor was provided; however, the mentors did not have the experience necessary to support the teachers in the program.

In summary, the results indicated that student choice, practical experiences, and experienced mentors constituted the three areas of improvement for preservice education programs (Figure 4). Teachers who followed a traditional route to certification were satisfied with their programs. They gained a subset of knowledge appropriate to their position as special education teachers; however, there continued to be a need for autism-specific information. Two of three novice teachers who followed the alternative route to certification were displeased with the program and spoke strongly of the need for disability specific coursework and mentors who
provide meaningful input and were appreciative of their personal experiences and collegial experiences they received in their undergraduate programs.

Implications for Practice

The current study extends the body of literature on teacher preparation programs for teachers of students with ASD. The increased prevalence rates in autism are directly associated with the need for qualified teachers. As noted by Simpson et al., (2011) teachers of students with ASD must be “highly qualified.” Research reports that teachers providing services to students with ASD lack the training necessary to provide quality services for students with ASD (National Research Council, 2001; Scheuremann et al., 2003; Simpson et al., 2011). The demand for well-trained teachers is escalating as the needs of students with autism who require specialized services increases. It is imperative that preservice teachers increase their understanding of autism and the EBP that support effective teaching of students with ASD (NAC, 2009; Wong et al., 2014). Current preservice programs offer singular courses that are often a general review of disabilities, offering basic strategies for accommodations and modifications of curriculum (Morrier, Hess, & Heflin, 2011), omitting the focus on strategies to support the core deficits of ASD, including language, social skills, and specific academic needs. Research by Hart and Malian (2013) indicates that preservice preparation programs possess an integral function and responsibility in preparing future special educators to teach students with ASD by providing instruction in EBP and offering opportunities for field experiences. Teacher preparation programs, preparing teachers to enter the field of special education, should be responsible for expanding the breadth of knowledge in ASD and related EBP by offering a course that provides an overview of the characteristics of ASD, along with in depth study of EBP. Additionally, field experiences and opportunities for classroom observations are recommended. The results of the
present study indicate that preservice teachers are recommending hands-on experiences for future teachers and credit their previous experiences with students with autism as a catalyst for their efficacy.

Professional development is one of the most common approaches to providing practitioners with information regarding ASD (Henderson, 2011). Local education agencies, regional service centers, and Internet resources provide professional development opportunities for teachers to receive training. Research in the present study and in a study by Morrier et al., (2011) indicated that teachers attend outside workshops and conferences to extend their awareness of EBP and strategies for implementation. In the era of technology, professional development opportunities are becoming more accessible via the Internet. The NPDC (Wong et al., 2014) teamed with Ohio Center for Autism and Low Incidence (OCALI) to publish a much-needed resource of online modules that present information on EBP and other autism specific topics. The activities provide support for beginners to advanced learners. This resource is provided free of charge and can be shared with paraprofessionals, related service providers, campus administration, and parents, all of whom are key stakeholders in the education of students with ASD.

Findings from this qualitative study provide data regarding the levels of understanding, beliefs, and perceptions of novice teachers of students with autism. Further development of this research could effectively augment preservice preparation programs, which will better prepare preservice teachers who aspire to be efficacious teachers of students with autism.
Limitations and Future Research

The results of this study are limited in three ways. First, qualitative research is founded in the sampling of participants who provide an information rich perspective (Sandelowski, 2000). In searching for novice teachers of children with autism, the researcher utilized her resources to locate participants. In her professional role of teacher support, the researcher has a small network from which to recruit. Facebook was a main source of recruitment, which is inherently connected to the researcher. As such, several participants were colleagues of the researcher. Although the participants were all asked the same questions, in the same sequence, relationships may have influenced the volume of participant information, implying that some participants were very comfortable and shared a wealth of information and conversely, some participants were less likely to share. Secondly, the small number of participants and the locality limit the generalizability of the findings. Third, individuals who do not enjoy their jobs are less likely to want to talk about what they do. The novice teachers in the study were all eager to share their contagious passion for teaching students with ASD. As such, the researcher cannot presume that the views from the participants in the study are indicative of the views of the larger population of novice teachers of students with ASD.

The results of this study suggest the need for further research in relation to five questions: (a) What is the role of mentors for novice teachers and how could this effect retention of effective teachers? (b) How many school districts utilize “autism specialists” in current school settings and how can this position proactively support novice teachers? (c) Consider replicating this study in a state that currently offers an autism certification in attempt to gain knowledge regarding the role preservice programs have in preparing novice teachers. (d) How can state guidelines be adjusted to support preservice teachers who have an interest in teaching students
with ASD? (e) What can universities to do facilitate autism specific programming for preservice teachers with an interest in working with students with ASD?

In relation to the first question, the role of mentors play for novice teachers should be explored. Participants in the current study reflected on mentors, indicating that the presence of, or conversely, lack of, mentors significantly impacted their status as novice teachers. Critical mentors in the field of teaching extend “practical training into the classroom” (Brown-DuPaul, Davis, & Wursta, 2013; p. 808), which directly influences confidence and job satisfaction as novice teachers. Teacher preparation programs should consider recruiting teacher leaders with background in autism to cultivate preservice teachers who express an interest in the field of ASD. Regarding the second question, in recognition that novice teachers are a vulnerable population, the role of autism specialist may present itself as a path to teacher support (Scheuermann et al., 2003). Further research on the role of autism specialists, as classroom support, should be considered. Lastly, inquiries into state level guidelines, which directly effect university based programming, for preservice teacher preparation, and the consideration of establishing disability specific programming should be considered. Perhaps identifying opportunities for autism specific programming at the university level will establish framework of support for future educators of students with ASD.
APPENDIX D

RESEARCHER FIELD NOTES
Anne

Anne graduated from a 4 year university with a degree in interdisciplinary studies, and is certified EC -12 special education. Her degree program was as a “generalist.” This is her first year teaching, however, she was a paraprofessional for 6 years. She has 9 students grade first through sixth.

She first became interested in working with students with special needs in junior high. In college she worked at a childcare facility and had several students with ASD. Additionally she volunteered at the Autism Treatment Center with students who were “severe.” She has also worked with students at church and Special Olympics. She actively sought out working with students with ASD. *It’s really interesting to me how for people who genuinely WANT to work with these students, it just takes a couple of early experiences and you’re “hooked.” That’s all it took for me. Looking into the eyes of a 2 year old with autism and knowing that this is what I was meant to do is an experience that can never be replaced. He inspired me to learn more.* She finds students with autism “intriguing” and tries to find out how to “get to them, and how to communicate with them, in their world.”

When asked “what is autism?” she had the following responses: difference in processing and communication. “So many of my students have so many gifts, it’s just hard to get it out.” She explained that many of her student’s routines are work/break, and the break is typically a sensory activity. She incorporates tactile activities when working with the students. They also use
kinesthetic activities, such as jumping up and down, hanging upside down on the therapy ball, which she believes helps her students perform better.

Regarding social skills, she says she uses a lot of Social Stories, teaching them how to be social. However, she states that “you can’t make them want to be social, which is why you have to keep doing it over and over again.” I agree! I’ve said this to many parents. “We can teach him to greet the crossing guard, but that doesn’t mean he wants to. It’s just a part of his routine.”

Regarding behavior – “Behavior is communication for all of my students with autism.” This is so true and something that I wish all teachers could understand. It’s hard to not take behavior personally sometimes, but if you can wrap your brain around the fact that if you don’t have language, you have to do SOMETHING to get people to understand that your needs are not being met. Behavior usually does the trick.

Regarding her undergrad program and it’s role in preparing her to teach students with ASD – Anne believes that she learned a lot from her program, despite the fact that it was an all online program. Her university did provide a class that was dedicated to teaching students with ASD. This is rare. I’ve only found one university that does this for undergraduates. Most of the time these classes are available for graduate students only. She said that her program didn’t necessarily influence her decision to work with students with ASD because she already knew this is what she wanted to do.
When asked specifically if she felt prepared to teach students with ASD after graduation she responded that she feels like her prior experience helped her the most. “There are no textbooks that tell you the ugly side of autism.” Most of the information she read was about higher functioning students.

Regarding EBP – She did receive training in ABA in a course at her university. The whole course was on ABA and she learned a lot in this course. She doesn’t know a lot about “structured teaching” but would like to learn more. She has not received any training in PECS or PRT.

She does not receive much training from her school district. She wishes she did, so that she would have some specific strategies to work with her students. She has attended trainings at the regional service center, as well as the local ARC. The regional service centers provide great trainings for teachers. They’re typically free if you live in the region. There are often national speakers who are renowned for working with students with ASD. They also present information on EBP. Great opportunity!

She ended by saying that her undergraduate program was very supportive, however, it really provided more of a “big picture” of learning rather than an autism specific program. She still is in contact with the professors who help her out when she has questions. I think this is indicative of a good program. As a teacher educator, your role goes beyond the 4 years the student’s are there. I remember within my first year or so of graduating I contacted a very influential professor I had, who was able to give me supports and information that I used in my classroom.
Emily

Emily is a teacher who truly loves her job. She was very eager to meet with me and worked her schedule to make it happen. *Her enthusiasm was contagious!* I had some time before the interview to observe her teaching. She was very organized and planned in her instruction and the students responded well. When we discussed her major, I had not heard of the degree in “general studies” yet I liked that she was able to pick 3 specialization areas, which included psychology, learning technology, and applied behavior analysis. While this is not a traditional route to teaching, I can see how this combination would give a future teacher a set of skills that might be missed in an interdisciplinary studies program. To move on to special education, she received her alternative certification program through an online program. This participant spoke adamantly that her undergrad did provide her with some skills that she could use in the classroom, because she is teaching students with autism, and the ABA piece gave her behavior training, and the psychology piece gave her some insight into autism. However, she was indignant that her alternative certification program did not provide her any support or functional skills that contributed to her classroom teaching.

Her initial interest in teaching students with autism came when she was a substitute teacher in a classroom designed for students with autism. She was a paraprofessional in a resource class for a year, then a paraprofessional in a class for students with autism. She did all of this while in school finishing her undergraduate degree, and all with the goal to be a teacher of students with autism. *What a great opportunity to have hands on experience while working toward her goal of teaching students with ASD.*
She explained that most of her students are nonverbal and that communication is a main component of her classroom. Additionally, they work on social skills, self help skills, such as toileting and dressing. The age range in her classroom is kindergarten to fourth grade. All of the students in her classroom have an eligibility of autism and speech impairment. *This range of students and abilities creates a unique challenge for novice teachers.*

Emily explained that while she always knew she wanted to work in special education, it wasn’t until she substituted in a class for students with autism, that she realized that this is where she wanted to be. *I had a very similar experience, however, mine was through providing child care for a student with autism. When you know, you just know.*

She shared that after she substitute taught, this was when she “just knew” that this is what she wanted to do. She never entertained the idea of teaching in a resource classroom, and thought that she might be interested in a Life Skills class, but only if she couldn’t get a classroom for students with autism. She spent a year as an assistant for a teacher, who she considered a “master teacher”, and took that opportunity to learn as much as she could. She reports “She taught me everything I know about working with kids with autism. Everything. I learned from being her aide.” She goes on further to say that “you can’t learn how to teach kids with autism by sitting in any classroom regardless of how good that classroom is or how good the teacher in that classroom is because kids with autism, they’re different, and there’s nothing that replaces hands-on.”
Emily was able to give a great explanation of what autism is. She mentioned “lack of ability to communicate, lack of language, lack of social skills, a lot of isolation, a lot of stereotypical play and behaviors, and sometimes acting out behaviors…frustrations…over the communication piece.” She really has a great understanding of the core deficits of ASD. It’s hard for some teachers to understand that communication and behavior often go together.

She shared the use of an EBP, PECS in her classroom. She discussed sensory issues and how they can be different for every student. She had one student who had to smell paper towels. They had to move the paper towels out of the classroom. She also mentioned that some students are hypo-active, rather than hyperactive, implying that they don’t get up and move or transition or anything, without a teacher prompt. Regarding behavior, she says that a lot of this comes directly from lack of communication. Again, the recognition that there is a connection is not something that all teachers understand. “I can’t tell you what I want. I can’t tell you what I need. You told me know. I really, really want that thing you just told me know, so this is what I’m going to do to try to get it!” She’s had students behaviors involve bodily fluids, such as spit, urine, and even feces. She’s had students remove clothing, throw things. She mentioned that she had had some training on the use of visual supports from the Regional Education Service Center and uses those strategies in her classroom. Free and inexpensive workshops at the service center! This novice teacher has learned to utilize her resources.

Regarding experience through her alternative certification, she mentioned that the word autism may have been mentioned once “in a blurb.” She did learn some ABA techniques in her undergrad studies and is grateful for that. She emphatically said that she didn’t have any
preservice experiences that influenced her decision or desire to teach students with ASD. She mentioned several times that her mentor from the alternative certification program provided her with no information that would help her as a special education teacher, or specifically as a teacher of students with autism. The mentor actually came to observe and said, “You look like you know what you’re doing” and encouraged her to continue collaborating with the other teacher on her team. She gives complete credence to her experience to her substitute teaching and ultimately her experiences as a paraprofessional. *What a disservice to a teacher who was so eager to learn. It’s a shame that the a preservice preparation program that expects novice teachers to teach with very little formal education and certainly little experiences in the classroom, doesn’t provide more effective mentors.*

*As I reflect on this summary, the key points to me are that she received all of the knowledge she has from her hands on experiences as a sub and as a paraprofessional. I was lucky enough to have a professor who presented her passion for working with students with autism, which was contagious. I sought out babysitting opportunities with students with ASD and this is what ultimately lit the fire for me. Much like Emily, I thought, yes...yes...this is what I want to do. And I did.*

I gave Emily the opportunity to really share about her students and the make up of her classroom. She grinned proudly when she shared about the students in her classroom. She spoke of the students and the characteristics of autism that they had. All of the students in her class had an eligibility of autism. *I remember my first class. I had the only class for students with autism in Irving ISD. I had 6 students, majority of the students were very effected. It was so challenging*
to meet the needs of all the students, who fell across the entire spectrum of autism. She spoke of using visual structure in the classroom and how this was a strategy that her school district supported.

The purpose of this interview was to review what a “typical day” is in the classroom. Emily shared that because of the differences in her students, the day looks very different! She has one student that requires 1:1 instruction throughout the day. She starts the day with circle time, which is prime opportunity for gross motor, social skills, and communication skills. I miss circle time! This was my favorite time of the day. It’s hard to get and keep the attention of 6 students, especially when several are non-verbal, but I liked this challenge and I liked knowing that I my job was to reach each of them through this activity! She discussed the importance of taking data and that she and her assistants all take student data. This also provides opportunities for the assistants to know what it is the students are working on. She talked about how she strained her assistants on things as they come up. She spoke of recognizing that her assistants each have their own strengths and that she uses those strengths when she gives them their assignments/students to work with, for the day. I think this is genius. She is using their experience to increase the student’s learning experiences. She runs her class in stations. The student’s stay in one spot and the staff move to them. This is the system that works best for her student’s this year. She discussed that her students have difficulty with transitions, so this system works best. She referred to the strict Gluten/Casein Free diets that many of her students are on and how lunch can be challenging. I’ve been working with students with autism for 20 years and GFCF has been around forever. There are some parents who believe that this diet effects student behavior and there are some students who it definitely affects…but not all of them. She shared about the
science and social studies objectives that she does with her students. This is a big task and one that often takes extra legwork from the teacher. She discussed how she spent time over the summer reviewing K-4 science and social studies TEKS and through that established the most appropriate objectives to be taught. She talked about notebooks that she sends home with the students to establish communication between home and school. *Teachers often miss this. It’s not easy writing in a notebook for 6 students at the end of a long day, but this communication is imperative when working on the generalization of skills between school and home.* The last classroom routine she discussed was the schedule that one particular student follows. It’s different that the rest of the students and requires 1:1 staff support. This student has a lot of sensory issues and lacks communication skills. He often gets aggressive. She discussed using a sensory diet with him and working on simple activities such inset 1-2 piece puzzles. She believes that his sensory and cognitive issues keep him from learning. He is unable to complete independent activities. *This type of student is hard to work with. You have to be creative when coming up with activities that he’s both able to do and reinforced by doing. You also have a to have a staff who is willing to take the extra mile with the student, as aggressive can be an issue.*

Emily sounds like she does a fabulous job with this student and understands the complexity of his needs.

Regarding evidence based practices; she spoke of using ABA, positive reinforcement, shaping, repetition, discrete trial teaching, visual schedules, work jobs, PECS, routines, Social Stories™, and incidental teaching.
When asked what her best day look like? Her response, “that it looked like I described it. It hardly ever looks like that.” As teachers, we all have a “perfect day” in our heads. We wake up every day and hope that today will be that perfect day. That the stars will align, and it’s not a full moon, and that everyone slept the night before! We all want the perfect day. It does happen, and when it does, it’s like the choir is singing. It’s almost as if everyone in the building can tell that things are going well in “that room down the hall.” It’s a good day…and it happens.

Emily had a lot of great information to offer today. She spoke of evidence-based practices with great confidence and seemed to be applying them within her classroom.

The purpose of this interview was to establish how the participant believed her preservice education prepared her for teaching students with autism. This is what I’ve been waiting for…we’ve learned what you know and what you do with what you know, now we need to find out HOW you know what you know!

Emily shared, definitively, that she learned from experience. Her experiences as a paraprofessional under the guidance of a master teacher provided her with the bulk of the knowledge that she has today. She did learn some from ABA classes in her undergraduate program. Most of this information was technical, rather than practical. She was emphatic about the fact that she did not learn anything practical from her alternative certification program. “That had absolutely no bearing on anything.” Wow…WOW! This is where our teachers are coming from? How sad. I presume that our teacher’s sign up for the program to not only GET the certification, but to learn something from it. It doesn’t sound like that is the case here. She also
expressed that her preservice education did not have a bearing in her “desire” to work with students with ASD. This developed through the experience she gained substitute teaching. She did share that she learned some information regarding ABA and positive reinforcement from her undergraduate program in ABA. When I asked her if she believed she was an effective teacher, she tentatively said “yes.” *It sounds like this teacher is a fabulous teacher!* I asked her what data she had to support her conclusion, and she responded, “Sheets and sheets and binders of data that show progress.” *This itself is a sign of a good teacher! She has data and knows how to use it!* When discussing parent interactions and how these are an indicator of her success, she got teary eyed. She sniffled and said how she prides herself in the relationships she has with her parents. She cited specific examples of how the parents will share their child’s successes in public forums, such as Facebook, and how as a teacher, this makes her happy. She sniffled again and said, “I care. I really, really care about all my students. It’s not just a job.” *Hearing from a parent how proud they are of their child is a great indicator of student success.* *I loved hearing from parents, and still love when I get the Christmas letter in the mail with the list of accomplishments from former preschoolers that I had who have now graduated.* A lot of times, as special educators, we don’t get direct feedback from our students, so we rely on our parents to *keep us going!* When asked what universities and/or alternative certification programs could do differently, she replied that they could have provided a mentor – someone with some experience working with students with autism or with strategies associated with working with students with autism. She believes that the alt-cert programs should be more specialized, by grade level or by ability levels. *I think the mentor piece is huge. Most people going through alt cert programs have not completed any student teaching, so they are “thrown to the wolves” with their first classroom teaching experience.* *There is a huge skillset necessary to teach special
education, and a more refined skillset to teach students with ASD. The thought that these programs are missing out on providing this kind of training is disconcerting. My last question was “If there’s one thing you could tell a novice teacher teaching students with ASD, what would you tell her?” Her response, “I would tell her to try and get in the classroom before you’re a teacher.” Experience! Hands on experience! I started babysitting children with ASD in college and feel like that experience helped guide me, ultimately, into the field. I also requested to do my student teaching in a class for students with ASD. While they’re a dime a dozen now, there were not many classrooms 20 years ago. The university had to make some special adjustments for me to be able to do this, but they were willing to, because they recognized the need in the field. It was a great experience and one I would not trade.

Cynthia

Cynthia is a young teacher who graduated with an undergraduate degree in Applied Behavior Analysis, and then received her teacher certification through an alternative certification program. She elaborated on how her undergraduate program, while not specific to students with autism, did provide information regarding behavior analysis. I think this is a great route for teachers to take. The ABA skillset is definitely utilized in a classroom for students with ASD. Her current classroom is at a high school. She has four students, all of whom have an eligibility of ASD. She shared that her students fall on the moderate to severe end of the autism spectrum. All students have a method of communication, though for some it’s very minimal. She shared that the classroom is set up with structure and supports that are designed for students with ASD. Cynthia became interested in working with students with ASD after her mother began working in a special education classroom. Me too! My dad taught high school special education and this
definitely influenced my decision to go into the field. She also began volunteering in special Olympics and in the special education classroom on her high school campus. After she graduated from high school she got a job working during summer school, which lead to her getting babysitting jobs. Again, this is similar to my story. I babysat through a parent organization in college, then began regularly babysitting for the only family in my small college town that had a child with ASD. After establishing herself as a competent babysitter, Cynthia began doing in-home ABA therapy with students. This was another great opportunity to get hands on experience. The ABA therapist came from UCLA and trained the team working with this individual. Cynthia worked with this family for 10 years before they moved away. “It just opened up this whole other world to me.” She eventually became a paraprofessional in a classroom for students with ASD, which guided her to working in a classroom rather than continuing the in-home programs. Once she started this job, she knew that this was her goal, to be a teacher. She was able to see what teaching, and being in the classroom was all about. She mentioned that the teacher she was working with knew that this is what she wanted to do, so she taught her while working. She had a mentor built into her job! What a great opportunity! To know that you have someone to ask, almost try things out on, before you get into the classroom? This is ideal! She made a specific choice not to get a degree in education. She had previous experience with this at the first university she attended and didn’t believe that that type of program would provide what she needed. She stated that she sat through education classes and said, “not gonna use this. Not gonna use this. Not gonna use that.” With that, she transferred to another university and entered the ABA program. Her dream is to open a center or a children’s home and believed that an undergraduate degree in ABA would provide her with a stronger skill set to accomplish this. She did eventually go through an alternative certification program to
receive her teacher certificate and stated that she believes there needs to be an alt cert program specialized in special education. She said she did what she had to do to get through the online classes, with the goal of getting that certificate. There was one course that provided her with enough information to help her pass the teacher certification test. She stated that she was “very, very unhappy with” the program. Again, this is a concern, as we have many alt cert teacher candidates who have NOT had the prior experience who just come into the field and think it’s going to be easy!

When asked to describe autism, she used the following terms: communication, language, social skills, behavior (and communication). She also talked about the sensory differences her students have. She spoke to the importance of recognizing that each student has different sensory needs. She shared that her undergraduate program (in ABA) was “fantastic.” She did have initial concerns that an undergrad degree in ABA might not be well received in the field of education, and because often teachers with alt cert may not be well received. She stated that she feels like she made the right decision. “It helped me tremendously. I can’t make a bulletin board to save my life. I didn’t get that part of the education, but for what I’m doing with my kids with autism, it’s exactly what I needed.” Interesting that she equates a degree in education with putting up bulletin boards. Perhaps this is a common conception? I know I made a lot of “song cards” in school and that spacing and lettering, and even coloring was graded. She reiterated that in her alt cert program didn’t prepare her at all. Regardless of the special education setting she taught in, “the alternative certification program wouldn’t have done anything for me.” She took 2 courses in her undergrad program that were directly related to individuals with autism. Within
the course they learned to write programs after being given scenarios. They would have to video tape themselves teaching the skills to another student. *This is a great way for preservice teachers of students with ASD to get involved, without directly working with a student.* Additionally, they would read research articles and did observations in local centers that served students with ASD. This lead to a practicum experience at the center. *GREAT!!! Hands on! I would have loved to have had some practitioner guided training in my under grad years.*

Regarding her confidence to step into a classroom as a novice teacher, she says that she had an advantage because she worked as a paraprofessional. She had created a strong cohort of teachers who used the same language she was using in the classroom, and had used as a paraprofessional, which gave her a place to go for questions.

She did have a mentor through her alt cert program, but feels certain that she taught the mentor more than she learned from her. She said, ‘it was a huge waste of my time.’ She did provide her with ideas and activities, however these activities were not appropriate to the group she was teaching.

When asked if she believed if she was an effective teacher, she said that she thought so. *I confer. Listening to her talk about her experiences both in the classroom and before she became a teacher, indicates that she has a skillset that will support her belief.*
She stated that she has received some training from her school district and also attends local conferences and trainings. She sees herself as a lifelong learning and believes that there is always more to learn.

In closing, she said that she believes that there has to be a better program to offer teachers who need an alt cert type of program. She would have loved to have taken a class on how to write a good IEP, really good goal and objective. In the alt cert program “you’re not learning about what an ARD looks like and all of these things we do on a daily basis, you don’t know that.” Regarding additional training, “There needs to be something else for us. Something that’s more specific for us. Some training or while you’re in school, that’s going to help you with that part of it.” She has a lot of really great ideas regarding training both at the undergrad level and the alternative certification level. There is a gap. These teachers need more information. They need to have more than just the information that will be on that special ed test. They definitely need something more.

Cynthia reviewed the make up of her classroom. *The purpose of today’s interview is to get an idea of a typical day in her classroom.*

Her students are able to get off the bus and come to class without incident. They put their things away and then can participate in activities of preference, such as iPad or computer. Cynthia then reviews the student communication folders to see if there is any pertinent information from the parents. *This is a great strategy for keeping the lines of communication open between home and school.* Often the parents will let you know that they student didn’t sleep the night before, which
definitely effects the behavior at school! You can adjust the student’s programming for the day based on this information. However, if you don’t know, your expectations will be different, in regards to student behavior.

The next activity is what she calls the “Jungle Book.” This is her “journal time” for the boys. It has 1-2 activities/worksheets in it that is easy for the students to do. Maintenance activities. This gets the students ready for the day. Love this! This sets them up for success and gives them some momentum for when the work gets hard!

Her next activity is “Morning Meeting.” She uses a power point that is projected on the whiteboard. This includes calendar and Social Stories that are relevant to her students. EBP! She recognizes the importance of Social Stories and how to use them for her students. She also works on vocabulary for the week. Lastly there are student specific slides that they will read over and work on identifying information. Great life skill!

After this point, her day is dependent on what activities they have. She has a schedule that delineates which student is working on math, which one is in independent work, which is on the computer, etc. This is time she works on the students IEP’s. I love the idea of having a master schedule so that everyone in the room, including the students, knows who has to be where. This is a great strategy for the assistants as well. There is no guessing, Assistant A, you’re with Johnny working on Math. Assistant B, you’re with Susie working on Science. Etc. Great plan!
With this being a high school class, they do have Activities of Daily Living (ADL) such as cooking, following directions, hygiene, etc. But the group remains subject oriented within their schedule, much like all high school students. Her students have opportunities to be with typical peers in Adaptive PE, and also at lunch.

She stated that as much as she likes to stick to the schedule, it’s often dependent on the day and student behavior. Sometimes when a student has a meltdown, this throws the whole group off, which takes some time to recover. Which really leaves them on a day/day basis. She said there are some days they get a lot of work done and things flow very easily and others where there may not have been much academics completed, but you’ve preempted a meltdown or two, and that’s a success. I agree. Behavior is such a component for our kids. Often they work so hard to manage their own behavior, that there are just days that they can’t keep it together anymore. When I taught PPCD, we could just let them have the tantrum and work around them, however, with high school boys, you have to be more careful because a tantrum can turn aggressive very quickly.

She reiterated that behavior drives her day. If one student shows up to school and is irritated, that’s going to set the tone for the day. She stated that she takes it easier on that student. They work toward preventing a meltdown. Basically her typical day is not ever very typical, because of the behavioral component.

Regarding EBP, she stated, “that’s a hard question.” In her classroom she uses a lot of ABA strategies. Not the one on one direct instruction that you typically think of when you hear ABA.
They use discrete trial, but on more functional things like how to use an oven, or the vacuum cleaner. She uses naturalistic teaching, which she believes is more relevant to students of this age than direct instruction.

Visual Schedules – they do use a version of visual schedules, using words, rather than pictures, because her students are readers. For several students it is Task 1, Task 2, Task 3, and Break (reinforcer). They physically need to move the information from one column to the other column as a clear indicator of being finished.

Token Economy – When he does sit down work, he earns tokens. After he earns so many tokens he can have his free time (reinforcer).

Regarding ABA, “I feel like there is a lot of ABA that’s just in our everyday, in our everyday lives that people don’t know what it’s labeled. I just do it on a daily basis. I don’t even think about it. I feel like it’s just part of everyday life that others would view as not.” She used the terms shaping and modeling and reinforcement.

Social Stories – she uses these to target specific behaviors students are having a hard time with. She’ll write a social story and review it daily. She used one to help a student stop touching his friends materials. She wrote one both for the student who was touching the materials and for the student whose materials were being touched. *I like this! The student on the receiving end needs strategies to cope with the other student’s behavior, as much as the original student needs to know what’s ok to touch and what’s not. This is a great strategy. Often these Social Stories are*
providing students with language to use in situations, so while they seem like a “social” event, it’s also a language teaching moment.

When asked about her perfect day, “I think that if we were able to get through a day where we had great communication with all of our students, that they were able to communicate to us their wants and needs, and not have any meltdowns because of the lack of communication. And we were able to get through the goals and objectives that we were supposed to get through that day without having to take a break or stop completely due to meltdowns.” This does sound ideal! I think she has a grasp on what is best and what is reality and how to meet in the middle on days that aren’t going the way they’re supposed to!

She shared that they have been using Video Modeling on behaviors and emotions, helping students to understand what “angry” looks like, etc. This is a strategy she wants to continue working on with her students, because the ones she’s done have been so successful.

The purpose of this interview was to follow up on her experiences and how they shaped her as a teacher.

She shared that she’s able to tweak what she’s learned and make it applicable to the current classroom she’s in. She uses more from her hands on experience than in her sitting in a classroom “learning.” Her ABA classes very hands on, which she found beneficial and uses that information in her current classroom.
Regarding preservice program and influence to teach students with ASD, she stated that her experiences played a role in working in this field than the coursework she took in college.

“I find kids with autism…on the spectrum…fascinating. I love it that I’ve never met two of them that are the same. They may be similar, but they’re not the same.” *When you’ve met one child with autism, you’ve met one child with autism.*”

Regarding alt cert program – it did not influence her entering the field of education and didn’t see how that program helped her at all as a special education teacher. *Wow. Scary.* They teach to the test. She shared that what she learned about Erickson and Piaget have no relevance to the class she’s teaching now. She acknowledged how it does teach you were kids are developmentally, and use it as a reference, but it has to be broken down to truly make it practical in her setting.

One thing she learned in alt cert program – I learned how to address a class of 30 identifying and working with their learning styles. However, in her current class that doesn’t work. They don’t work well in a group, and need all of those pieces, auditory, kinesthetic, etc all at the same time.

Do you consider yourself effective? Why? “Yes, I don’t think I’ve messed anyone up! My evidence is my students. One student wouldn’t make eye contact or look at anyone, but now he invites people to look at his work and is friendly when new people come in.” Parents have shown her a lot of support as they’ve seen their students make progress. She’s had one student whose parents have asked if he could stay in her classroom another year rather than
move on to the districts transition program. She’s had administration has indicated that they are pleased that she has past experiences that she’s applying in her classroom.

She shared that she gives credit to her undergraduate program for preparing her to work with students with ASD. She keeps her textbooks and journal articles on hand to use as a resource to help her through problems she gest stuck on. This is great to hear! How nice to know that undergrads are actually using the information they gained and revisiting it along the way!

She stated that she always knew she wanted to work with this population, though the form of where she would work has changed. The idea of working with families in the home changed when she realized how much they were having to spend on therapies. She likes being in the public setting because she has the opportunity to effect more students. Good point! What a great attitude. I understand this. I did private therapies for years, and my scheduled filled up very quickly because I wanted to help! But eventually I ran out of time and had to refocus my energies on my classroom.

She does consider continuing her education. She juggles following through with her Masters in ABA and getting a Masters in Special Education with Autism Intervention. She has to put a lot of thought into which route to take, and which will help her most in her future. She’s a “lifelong learner” and would love to be a “professional student.”

Most rewarding thing – “Everything. With these kids, every little positive thing is a huge thing. And I feel like every day there is some little reward or huge reward with these kids.” I love this
attitude. I remember those days. There are some days that those little rewards are big enough to make you smile!

Kyle

Kyle is a 30-year-old teacher who is in his first year of teaching. He received a degree in physical education from an out of state university and became certified as a special education teacher through an alternative certification program. This seems to be the trend.

He began working with students with special needs in an Adaptive PE class in college. They were given the opportunity to work with the students 1:1 in PE classes. He shared that this was how he first became interested in working with students with special needs. I love this! How great that a student comes into a program not realizing that this is the direction he wants to go. He gets the experience and learns that this is what he wants to do!

Kyle did work as a teaching assistant in a PE program and had the opportunity to interact with students from the special education program, including students with ASD.

Kyle is in his first year teaching a self-contained classroom that is designed for students with ASD and works primarily on social skills and communication. The students have IEPs that support the student’s academic and functional needs. Most of his students are 1-2 years below grade level and some are even “further than that.” His main focus is to teach his students to function in gen ed. “Trying to figure out how to act, how to behave, what’s appropriate and working on the hidden curriculum, things we kind of learn automatically that these kids don’t.”
Kyle seems to have a good grip on what he’s working on in his classroom, which is great for a novice teacher. Often these novice teachers aren’t sure what they’re working on in the first year!

Kyle knew he always wanted to be a teacher and once he had the opportunity to work with students with special needs he knew that this is what he wanted to do. He shared that he believed it was be something “worthwhile” to do. His experiences working with students with autism in his internship lead him to his path to the classroom. He didn’t seek out students with autism, “it just kind of happened that way.” It’s amazing to me how these kids just find us. It’s like they know who is ready and willing to work with them. They know who “gets them.” I’ve seen this throughout my life both professionally and personally. Kyle shared that he definitely pursued working with students with ASD based on his experiences in his preservice program.

When asked, “what is autism”? Kyle’s response was “That’s a great question.” He went on further to explain that the spectrum is so wide. He explained core deficits as communication and social skills. He explained that most students with ASD are visual learners. They have some repetitive behaviors. He shared that many students have sensory differences and need a sensory “diet.” “These kids need this input just like we need our food, and it can vary so much.” This is a great analogy and impressive that a first year teacher can understand this concept.

Regarding social interactions, Kyle shared that some of his students have repetitive play alone, but he has others who are able to engage with other students, but sharing often become a problem.
When asked about his alternative certification program, he mentioned that as a special ed program that is very broad, you have to prepare yourself, because you’re working alone. “I went out, by myself, and looked at other ways to learn about autism on my own, because there were parts that were helping prepare me within the program, but there was also a lot more that I needed to know.” His AC program did “touch on” autism. He said there would be a chapter on it. The chapter explained what the classroom would look like, the basics of visuals. However, he said “I wouldn’t have felt prepared just on that alone.” It’s great that they even talked about it. This is my first AC participant who really got any info other than just hearing the word mentioned. He also mentioned that his program encouraged all students to seek additional knowledge and to “make yourself a lifelong learner as a teacher.” I love this! I wish more programs did this! Often novice teachers expect things to just work and when it doesn’t, they quit. Kyle has a great work ethic and thirst for additional knowledge. He does believe that he has more experience and knowledge about autism than his mentor from his AC program. She had some special ed knowledge, regarding paperwork and goals/objectives, but “after a while, I felt like I was more the expert.”

Kyle believes that he was confident when leaving his undergrad program to teach and had the motivation to learn more. He knew he needed to prepare himself. “I was confident that I would be successful.”

He does believe he’s an effective teacher. He received complements from teachers and parents about the progress of the student’s in his class. However, he believes he can get better. He also believes that in 5 years he’ll look back and wonder if he was the best teacher he could be, but
that right now, “I think I’m doing a good job.” It’s exceptional that he has such confidence as a novice teacher. He will continue to be a good teacher and will only get better. These are the kinds of teacher we WANT in our classrooms!

Regarding training outside of the university and AC program, Kyle has participated in webinars including the Autism Internet Modules. He also did the Region 13 online autism trainings. He did all of these the summer before he started the job. “I thought that really gave me the good foundation.” He also attended the state autism conference and workshops provided by his school district. Specifically, he received training in TEACCH/Structured Teaching, ABA, and PECS. The AIM and Region 13 modules are very comprehensive and ones that we recommend to teachers and parents all the time.

When asked once more about his preservice programming, he said he would have preferred to have a mentor who could relate to his position. I think this is an integral piece of the puzzle for novice teachers. You wouldn’t throw a reading teacher into the classroom without a mentor with experience in reading. We know that AC students are there for very specific areas of concentration. Students receiving their special ed certification should have a special ed experience mentor to guide them. This could make/break a novice teacher.

When describing a “typical day”, Kyle mentions that his room has “so many moving pieces.” What a great way to describe it! He begins his day with “morning meeting” which is a language activity where they work on social skills as well. His students are out in general education inclusion settings. His classroom is set up very visually, using visual schedules, clearly defined
areas, independent and teacher work areas. There is also a quiet area and a computer area. “It’s clearly defined for the students.” It sounds like a fine oiled machine. He has a good understanding on the importance of structure for students with ASD.

He’s arranged his schedule so that he has students out in gen ed and students in his classroom. While in the room, there are one or two students in independent work and 1 working with him in direct instruction. Independence is something that he has had to teach his students. He mentioned that often students are looking for attention, so they may act like they don’t know what they’re doing.

When asked about EBP, Kyle mentioned the use of visual schedules and how he believes they are effective in teaching students to be independent learners. He also believes that it schedules help with behavior, as they know that the routine is there and what’s coming, “there’s no surprises in a day.”

He also mentioned Social Stories as an EBP. He explained that Social Stories are often “highly successful.” He creates many of his own, but he also uses ones from the Carol Gray book. He understands the principles of ABA. He spoke of reinforcement. He also mentioned that many of the strategies associated with ABA were things he was already familiar with or was actually doing, however, it wasn’t until he attended an ABA training that he realized he was doing these things already! This is exactly how I felt about many of the strategies of ABA. Who knew some of the things I’d learned from my parents, both retired teacher, were actually very specific teaching
strategies! He uses token economy systems with his students, which are also ABA based programming. He discussed teaching social skills in the naturalistic setting.

When asked what his BEST day would look like, Kyle said that all students would have positive behaviors, students would be able to generalize the skills they’re learning, and they will be successful in general education classrooms. Those are very high expectations, but ones that I think are attainable for this successful novice teacher.

We began this interview with the question of “how has everything that you’ve shared and your experiences, shaped you as a teacher?

Kyle’s responded that he believes his personal experiences as a professional basketball player taught him to be a self-learner. He stated that it prepared him by teaching him that there is more to teaching than the 8 hours you’re in the classroom. “There’s so much preparation, and I think that, having that mindset, you’re not looking at the clock and thinking, ‘well, it’s time to go home now.’ It’s time to go home when you’re done, when you’re ready for the next day or when everything’s done.” What a strong work ethic this novice teacher has! This is exactly how I operated as a teacher. I was often at work until 9:00 working on new materials, planning the perfect circle time, or writing a book because the books we had were no on the level my students needed. Everything wasn’t done, until it was done.

Regarding his undergrad program and it’s influence on working with students with ASD, he shared that the internship he had with special needs students really helped him understand that
this was the direction he wanted to go in. “I found a connection… and though it would be
something that would be very rewarding for myself.” The connection is the best thing! Once you
realize that you have that connection, it changes how you look at your future. I remember being
at a camp and working with the toughest kid at camp. They gave her to me every day because
we had a connection. I could get her to do things behaviorally that others couldn’t. I could
understand her when the other counselors couldn’t handle being around her. I knew. I knew
that this is what I wanted to do.

Regarding students with autism and how he feels it’s rewarding to work with them, he said,
“they always use the analogy of the puzzle with autism and just kind of finding that thing that
gets them going or get clicking. Working with them and finding that. It’s a challenge, but it’s
also rewarding; and seeing them succeed from that puzzle, it’s just great.” This teacher loves his
job! He gets it and he truly wants to see these student’s succeed. And this is his first year… he
will truly only get better.

His learning about autism in his undergrad completely came from the hands on experiences in
his AC program. He learned the majority of his knowledge about ASD from online modules and
trainings provided from his school district.

He knows he’s a successful teacher because his student’s are making progress. The parents are
sharing the student successes at home. He shared that one student is completely different at
home than he is at school. His mom shared that the gap between the two is getting smaller and
the student is generalizing to school.
When asked what his preservice programs could have done differently, he shared that because he knew going into the AC program that it was generic special education, he had to work on his own to keep his options open. He wishes they had given students an opportunity to pick a specialty area, rather than just skim over everything. GREAT idea!!! Regarding his university based program, he feels like they could have done more observations and classroom observations. This is a theme. Students need to be observing classrooms.

When asked what he would say to a new teacher of students with ASD? “Find an experience teacher and stick to them like glue for a bit. Find someone to talk to and bounce ideas off of, and someone you’re comfortable with, because you may have questions that you think – this is a silly question, but they’re probably not. They’re probably not. They’re probably something you need to know.” He reiterated that the mentor piece is important.” Another theme...find a mentor and work with them...relentlessly!

Melanie

Melanie graduated from a 4-year university with a degree in interdisciplinary studies, special education. Additionally she has a general education EC-6 and ESL. She teaches an elementary class for students with ASD that focuses mainly on “language, language development and social skills.” Students ranging in age from Kindergarten to 5th grade along all levels of the spectrum.

She became interested in working with students with autism because her mom taught students with autism. Me too! My dad taught high school special ed and through my experiences with him, I knew I wanted to work within the field of special education.
She was originally an engineering major, then came home for the summer and worked at a “camp” for students with special needs. After working here, she knew this was what she wanted to do. *I had the same experience. At 15 I worked at a camp for students with special needs and walked away knowing that this was what I wanted to do. I had not refined what that would look like, but I knew I wanted to work in the field of special education.* Her response, “I just kind of fell in love with the ones that had autism.”

She did have experiences babysitting the most challenging student from camp. She really liked working with students who had behavioral issues. She recognized the challenge and saw it as a problem she needed to solve. She agrees that these experiences lead her into the field of autism. She also stated that it was her intent to teach students with autism after she graduated from her 4-year degree program.

Melanie was able to describe autism and used the following words: an impairment in communication and language and social skills. Stereotypical behaviors. Each student in my class is so different from the other. *Enter spectrum! Many classrooms for students with autism have students all along the spectrum, creating a whole new set of issues!*

She discussed sensory issues, saying that almost all of her students have sensitivities to noise. She has a student who eats crayons and ones that put anything in their mouth. Some students like music, while the other doesn’t, which creates it’s own challenges.

Regarding her undergraduate training – She says that her undergraduate degree didn’t prepare her the “most”, it was rather the experiences she had in her mother’s classroom. She did learn
about discrete trial training and learned information regarding behavioral strategies through workshops and conferences. She did mention that when she went to conferences and they referenced her professors from her undergraduate program that it was exciting to see! *I get this!* *I had a professor who significantly influenced my interest in autism and my career path!*

She mentioned that her undergraduate classes at her university taught generic information, such as “teaching reading for students with learning disabilities” and as she understood it, there were graduate classes on ASD. Her “internship” was not with students with ASD, despite the fact that that is what she wanted to do. She shared that she didn’t learn about teaching in the “self contained” setting in college. She believes that if she didn’t have her mom and her experience to back her up, and the training from her school district, that she would have struggled.

When she graduated from college she was have said, “No way. No way.” She believed that she had an understanding of how to work with students with autism, but when throwing in working with paraprofessionals, it was different.

She does believe that she’s an effective teacher of students with ASD. She sees the progress her students are making and the fact that the parents are happy as indicators of success.

She receives training from her school district once a month, which is primarily a “verbal behavior” program. She said that when she walked into the program she wondered where the “visual schedules” were. She did a lot of reading on her own to catch up with where her school district was regarding programming. *I see this as an issue. We have said, for years, that you*
can’t dictate programming within a school district, then you have a school district that ONLY prescribes to one type of programming? We know that there is a wealth of EBP for students with ASD and what works with one student, doesn’t work with another. Seems a bit hypocritical for a school district to unilaterally say that they are a “verbal behavior” only district.

Each student has a “work station” which implies that they provide the student direct instruction. The students also receive some small group instruction and incidental teaching.

She receives training once a month from her local school district on the programming that they expect. I wish ALL school districts could/would do this! I’d love to have my teachers once a month!

When I asked her about “TEACCH” programming she mentioned that she had experience with it form working with her mother, however, it is not a program that her school district supports.

She was able to speak about Pivotal Response Training (PRT). Her school district supports the STAR curriculum, which uses PRT. Her interpretation of this was getting language out of students through play and fun activities.

When asked about PECS, she mentioned that she was familiar with it, but her school district didn’t support its use. She mentioned that the key was that if she used it, she was not replacing language with the visual, rather using it to support language. Wow. As a proponent of visuals, and knowing that individuals with autism need visual supports, it’s hard for me to believe that a
school district unilaterally decides that PECS, which is a EBP, can't be used. She does have students who use Augmentative/Alternative Communication (AAC) such as Proloquo2Go on the iPad. She also uses sign language with her students.

Lastly, she believes that her undergraduate program provided her with an “umbrella of things”, however, it did not give her specific information regarding students with ASD.

*When asked to describe a typical day in her classroom, which includes things that distinguish her classroom from another self-contained classroom, Melanie said the following things:*

She referred to being Medicaid providers for her students, which requires a hand in hand escort to the classroom. She also shared that this is something they would do anyway because her students would want to “run into the street, touch the bus, try and get underneath it, touch the wheels” etc. She has a “backpack” routine that the students follow, which includes getting out their folders and putting them in a specific place, lunches, etc. She starts the day with language activities that require the students to request items that are reinforcing. *This is a great idea!* Requesting is so hard for many of our students, but if they're going to do it, they're going to request items of preference! She uses specific songs to assist with transitions between activities, which she indicates are hard for her students. She also uses visuals to transition and some students only need a verbal to transition. Next on their schedule is circle time. She works on sitting in a group, responding to questions, and other “routine” activities. *When I taught I embedded many IEP goals/objectives such as colors, numbers, days of the week, etc. and it was*
typically the same...or a close version...of the same activity each day. I even had students who could recite exactly what I was going to say at the beginning of each activity!

She discussed the need for structure/routines. She stated that with her students you’re not able to say, “go to your desk and then do this, and then do this, and then look at the whiteboard, and then get this out, and then look at the picture and follow all these directions.” Her students need one step directions, routine-based so that they know what is coming next.

She does direct instruction with her students and these activities are different for each student. They vary based on the student’s goals/objectives. She uses 1:1 (direct instruction) for all new learning. She uses “applied behavior analysis”, such as errorless teaching. She described errorless teaching as a strategy where “you want them to be successful on their first try, which is basically it, and then we’ll reinforce when they’re successful without a prompt.” This is one of those things that I always did as a teacher, but didn’t know it was called something until much later in my career. It’s a great strategy and one that is very successful.

She further explained that they use discrete trial and natural environment teaching in her classroom, which encourages language. She spoke to the fact that some students don’t do well with instruction that is provided at the table, and the natural environment is the most optimal place for learning. This provides opportunities for generalization. She mentioned that she did learn some of these skills in a college course. She also learned some of it when she got her teaching position, and other than that she “looks up videos online.” I wish I had resources like
the ones on the internet when I was a novice teacher. What a great concept that you can just “google” it and figure out how to implement a specific EBP! Wow!

When speaking about EBP she mentioned that if anyone ever asks her why she’s using the EBP that she uses, such as ABA practices, she let’s them know that it is “science” and that it’s backed up by the science.

Specific EBP – She uses visuals, but overtly, as her school district does not support this as a strategy for the students. She uses the iPad or her iPhone and pulls up pictures to assist with transitions or with visual prompts for language. She recognizes that students with ASD need visual supports. Regarding visual schedules, she says that she follows a routine, and if the routine changes they explain the changes in the way the child understands. She uses “mand training” to assist with language development. She also uses Social Stories to “prepare them for what to do and what to expect. She has also started using video modeling. She shared that she creates visual Social Stories. She uses the children of teachers at her school to act out the activity. She shared that she learned about some of these strategies in her undergraduate program, but much of it she’s learned as she’s gone along. It’s nice to teachers fresh out of college knowing some of the cutting edge technology and programs that are considered EBP.

When asked about her “best day” she said that it would all depend on one student. If that student didn’t have any self-injurious behaviors, and was happy the entire day, this would be a good day. She has had support from “instructional support” in her school district. She takes data on behaviors, graph the data, and the support team comes in to assist. Instructional support can
make a big difference in the longevity of a novice teacher in the field. If they feel like they have
the support and aren’t just swimming upstream, they may choose to come back. Not all school
districts have this kind of support. I encourage teachers to ask for help. Keep asking for help. A
good school district will provide this kind of teacher/student support.
APPENDIX E

CODE BOOK
<table>
<thead>
<tr>
<th><strong>Alternative Certification</strong></th>
<th>Participant references participating in an alternative certification program after gaining an undergraduate degree. Any references to this program will be coded.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Challenges</strong></td>
<td>The participant referred to any difficulties they are having regarding teaching students with ASD once they have entered into the teaching role. These include behavioral challenges, difficulty with classroom management, issues related to managing adults in the classroom, and concerns with curriculum.</td>
</tr>
<tr>
<td><strong>Confidence</strong></td>
<td>The participant referenced indicators of success in the classroom related to their abilities as a teacher. Implications of success include reports from parents and administrators; teaching awards received, and student progress.</td>
</tr>
<tr>
<td><strong>Evidence Based Practices</strong></td>
<td>Participants referenced strategies that are documented as established or emerging evidence based practices, based on the National Autism Center and the National Professional Development Center on Autism Spectrum Disorders.</td>
</tr>
<tr>
<td><strong>Knowledge of ASD</strong></td>
<td>Participant referenced any defining characteristics of students with ASD. When referring to knowledge of ASD, participants will use language associated with the DSM IV-TR criteria, including social, communication and repetitive and stereotyped patterns of behavior.</td>
</tr>
<tr>
<td><strong>Novice</strong></td>
<td>Participant referenced any defining characteristics of students with ASD. When referring to knowledge of ASD, participants will use language associated with the DSM IV-TR criteria, including social, communication and repetitive and stereotyped patterns of behavior.</td>
</tr>
<tr>
<td><strong>Personal Influence</strong></td>
<td>The participant referenced any personal influences they had at any point before entering teaching that led them to the field of ASD. This includes any family member who either has an ASD or has worked with students with ASD.</td>
</tr>
<tr>
<td><strong>Prior Experience</strong></td>
<td>The participant referred to any opportunities they had to work with students with ASD prior to their novice teaching years. This includes school experiences, as well as opportunities in social settings, such as church. Additionally, any experiences in the work setting, such as a paraprofessional are included.</td>
</tr>
<tr>
<td><strong>Preservice Influence</strong></td>
<td>The participant referred to any preservice training related to ASD. This includes internships or student teaching experiences that took place as a part of their four-year traditional IHE experience. This refers to university personnel who provided encouragement or served as a mentor, which lead them into the field of ASD.</td>
</tr>
<tr>
<td>Preservice Training</td>
<td>Participant refers to anything that pertains directly to any training, classes, or experiences during preservice (undergraduate) training.</td>
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<tr>
<td>---------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Professional Development</td>
<td>The participant references any training they have received either formally or informally after they have entered into the teaching role.</td>
</tr>
</tbody>
</table>
Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

**Title of Study:** A Study of Novice Teachers’ Preparation to Teach Students with Autism Spectrum Disorders

**Principal Investigator:** Bertina Hildreth Combes, Ph.D., University of North Texas (UNT) Department of Educational Psychology

**Key Personnel:** Stacey Callaway, M.Ed., Doctoral Candidate, University of North Texas (UNT) Department of Educational Psychology

**Purpose of the Study:** The purpose of this study is to identify novice teacher’s perception of their preparedness to teach a class designed for students with an Autism Spectrum Disorder (ASD) after graduation from a traditional university based special education program or a special education alternative certification program. The researchers will gather data from you about your preparation program. Your preparation program is the course of study (courses, practicum, internships) that you went through to become a special education teacher at your university or alternative certification program.
**Study Procedures:** You will be asked to participate in three face-to-face interviews lasting approximately 90 minutes each over a 30-day period. The interviews will take place outside of the school day and will be arranged at your convenience of time and place.

Total expected time for participation in the study in approximately 4.5 hours.

**Foreseeable Risks:** No foreseeable risks are involved in this study.

**Benefits to the Subjects or Others:** This study is not expected to be of direct benefit to you. However, the information gathered from your interview may assist with designing the curriculum for undergraduate preservice teachers at four-year institutions. Additionally, information gained may help structure content in alternative certification programs about ASD. Upon completion of the study, you will be notified and given the opportunity to learn of the study’s results and ask additional question about the study and your role in it.

**Incentives:** You will receive a $25 Visa gift card as compensation for your time. Additionally, you may choose to participate in a drawing for a *Kindle Fire*.

**Procedures for Maintaining Confidentiality of Research Records:** Every effort will be made to protect your identity and individual information. You will not be mentioned by name in the written or oral summary of the results of the study. Neither will your school or the district’s name be used in reporting study results. After conducting the study, records from this research will be maintained for 7 years.

**Questions about the Study:** If you have questions about the study, you may contact the study’s key personnel, Dr. Bertina Combes (principal investigator) 940-565-2628 or Stacey Callaway, 972-345-5772.
Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 if there are questions regarding the rights of research subjects.

Research Participants’ Rights:

Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

• Bertina Combes or Stacey Callaway has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.

• You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.

• You understand why the study is being conducted and how it will be performed.

• You understand your rights as a research participant and you voluntarily consent to participate in this study.

• You have been told you will receive a copy of this form.
Printed Name of Participant

Signature of Participant

Date

For the Principal Investigator or Designee:

I certify that I have reviewed the contents of this form with the subject signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

Signature of Principal Investigator or Designee   Date
Preservice Teachers’ Preparedness to Teach Students with ASD

Interview Questions

Interview 1

Demographic Information

1. Male/Female
2. Age
3. From which university did you earn your undergraduate degree? OR Which ACP program did you complete?
4. Did your undergraduate degree have a disability focus or emphasis area? If so, what was the emphasis area?
5. How many years have you been teaching special education?
   • Did you have teaching experiences prior to teaching special education?
6. Tell me about your current classroom. Students served, focus on the class, student population, etc.
7. During your years as a teacher of students with ASD, what is the largest number of students you have had in your class with ASD? What about the fewest number of students with ASD?
8. How many students are currently in your class?
9. How many paraprofessionals do you have in your current class?
10. How did you become interested in working with children and specifically in the field of education?
11. I’d like to hear how you became specifically interested in teaching students with ASD.
• Did you have early experiences with children with ASD? Babysitting, family members, etc?
  ○ Tell me about those experiences.
  ○ How much time did you spend with those families/children?
  ○ What was the nature of your interactions?
• Did these experiences influence your decision to pursue a career in working with students with ASD? Explain

12. What was your teaching goal after graduating or completing your ACP program?
  • How did your desire to work with students with ASD factor into your teaching goal?
  • Can you share with me how you acquired a teaching position in a classroom for students with ASD?
  • Did any of your past experiences (personal interactions, university coursework, etc) with students influence your teaching goals?

13. How would you describe the characteristics Autism Spectrum Disorders? Can you share with me what it is in laymen’s terms, one you might share with a parent or a friend who might ask.
  • Tell me what you know about communication and children with ASD.
  • Tell me what you know about sensory differences and children with ASD.
  • Explain how behavior is affected when a child has been diagnosed with ASD.
  • Tell me what you know about socialization and students with ASD.
14. What are your thoughts regarding how your undergraduate teacher preparation program (or ACP) prepared its candidates to teach students with ASD?

15. Were there factors in your preservice preparation that influenced your desire to work with students with ASD?
   • Please explain.
   • Did you have a professor who had a passion or special interest for working with students with ASD?
   • Did you do an internship where you were placed in a classroom for students with ASD?

16. Based on what you’ve shared with me, do you believe that your preservice education program prepared you to teach student’s with ASD?
   • Why or why not?
   • Upon graduation, how confident did you feel as a SPECIAL EDUCATOR to teach a class (self-contained) that included student with ASD? And why?
   • When you graduated from your teacher preparation program or (completed the ACP) did you know that you wanted to teach students with ASD?
     o If yes, please explain.
     o If no, please explain at what lead you into the field of ASD.

17. Do you consider yourself an effective teacher of students with ASD? Why or Why not?

18. Tell me the primary source of your knowledge about teaching students with ASD.
• Tell me about ASD training you received outside of your preservice preparation program (independent training, school district training, direct services with a student with ASD).
• Have you participated in ABA training?
• Have you participated in Structured Teaching training?
• Have you participated in PRT training?
• Have you participated in PECS training?


describe a typical day in your classroom from beginning to end. Be as detailed as possible, sharing the things that you believe identify this a class specifically for students with ASD. Discuss student specific decisions and how those decisions are made. Discuss any specific interventions or programs that you use to support student learning.

2. There are many interventions; some have evidence and some that are highly controversial. Talk to me about which EBP you’re familiar with that you use in your classroom.
   a. What evidence-based practices do you utilize in your classroom?

3. Has your knowledge of evidence-based practices influenced how you teach students with ASD? Please explain.

**Now we are going to talk about some specific evidence based practices that you may or may not use in your classroom.
4. Do you use visual schedules in your classroom? Please explain how this system works in your classroom.
   
   a. How you believe it benefits students with ASD.
   
   b. What are your thoughts on students using schedules throughout their lifespan?
   
   c. Tell me about visual supports and structure and their role in learning for students with ASD.

5. Do you use the basic principles of applied behavior analysis (shaping, chaining, mand training) in your classroom? If so, please explain in detail. If not, please explain why you are not using these strategies.
   
   • How do you believe these principles of ABA affect the students in your classroom? Give me examples of how these principles of ABA are directly affecting the students in your classroom.
   
   a. What are your thoughts on students using ABA throughout their lifespan?
   
   b. Tell me about ABA and its role in learning for students with ASD.

6. Do you use Social Stories or Story-based interventions in your classroom? If so, please explain in detail.
a. How do you believe these interventions affect the students in your classroom? Can you give me some examples of Social Stories you’ve used?

b. What are your thoughts on the effectiveness of using Social Stories in the classroom?

7. Are there other evidence-based practices that you are aware of that you utilize in your classroom, and if so, what are they? Where did you learn these strategies?

8. You’ve told me about your typical day, now let’s end by your telling me about your BEST day! Describe what a “best day” would look like in your current classroom?

Interview 3

1. Given what you have shared about your life before working with students with ASD, how do you think that your experiences have shaped where you are now as a teacher.

2. Were there factors in your preservice preparation that influenced your desire to work with students with ASD? Please explain.

   a. Did you have experiences with students with ASD as a part of your program?

   b. Did you have experiences with students with disabilities other than ASD as a part of your program?
3. When you consider your preservice preparation program (four-year special education or alternative certification), how has it impacted your classroom programming?
   a. How has the information you gained in these programs affected your experiences as a novice teacher of students with ASD?
   b. Please tell me one thing that you learned in your preservice program, either undergrad or alternative certification.

4. Do you consider yourself an effective teacher of students with ASD?
   a. What evidence would you offer in support of your view?
   b. Talk to me about student progress in your classroom.
   c. Have you had parent interactions that were positive in regards to your effectiveness as a novice teacher? What about other teachers and administrators?

5. Did your preservice preparation contribute to your perceptions of your effectiveness? Please explain.
   a. When you think about how successful you are at this point, do you look back at your preservice program and think about how prepared you were because of your program?

6. When you graduated from your teacher preparation program did you know that you wanted to teach students with ASD, was this a passion for you?
a. If yes, please explain.

b. If no, please explain at what lead you into the field of ASD.

7. What is the most rewarding thing about being a teacher of students with ASD?

8. What could your University have done to have better prepared you to be effective in your current position?

a. What recommendations do you have to generic special education teacher preparation programs to effectively prepare teachers to teach students with ASD?


Bölte, S. (2014). Teacher power of words: Is qualitative research as important as quantitative research in the study of autism? *Autism, 18*(2), 67-68.


