

12-2013

# Exploring Preservice Early Childhood Educators' Self-Efficacy Beliefs and Preparedness to Teach Students with Autism Spectrum Disorder (ASD) in Inclusive Classrooms

Tricia H. Shelton

*Indiana University of Pennsylvania*

Follow this and additional works at: <http://knowledge.library.iup.edu/etd>

---

## Recommended Citation

Shelton, Tricia H., "Exploring Preservice Early Childhood Educators' Self-Efficacy Beliefs and Preparedness to Teach Students with Autism Spectrum Disorder (ASD) in Inclusive Classrooms" (2013). *Theses and Dissertations (All)*. 1143.  
<http://knowledge.library.iup.edu/etd/1143>

This Dissertation is brought to you for free and open access by Knowledge Repository @ IUP. It has been accepted for inclusion in Theses and Dissertations (All) by an authorized administrator of Knowledge Repository @ IUP. For more information, please contact [cclouser@iup.edu](mailto:cclouser@iup.edu), [sara.parme@iup.edu](mailto:sara.parme@iup.edu).

EXPLORING PRESERVICE EARLY CHILDHOOD EDUCATORS'  
SELF-EFFICACY BELIEFS AND PREPAREDNESS TO TEACH STUDENTS WITH  
AUTISM SPECTRUM DISORDER (ASD) IN INCLUSIVE CLASSROOMS

A Dissertation

Submitted to the School of Graduate Studies and Research

in Partial Fulfillment of the

Requirements for the Degree

Doctor of Education

Tricia H. Shelton

Indiana University of Pennsylvania

December 2013

Indiana University of Pennsylvania  
School of Graduate Studies and Research  
Department of Professional Studies in Education

We hereby approve the dissertation of

Tricia H. Shelton

Candidate for the degree of Doctor of Education

---

---

Mary Renck Jalongo, Ph.D.  
Professor of Education, Advisor

---

---

Beatrice Fennimore, Ed.D.  
Professor of Education

---

---

Joann Migyanka, D.Ed.  
Professor of Special Education  
& Clinical Services

ACCEPTED

---

Timothy P. Mack, Ph.D.  
Dean  
School of Graduate Studies and Research

---

Title: Exploring Preservice Early Childhood Educators' Self-Efficacy Beliefs and Preparedness to Teach Students with Autism Spectrum Disorder (ASD) in Inclusive Classrooms

Author: Tricia H. Shelton

Dissertation Chair: Dr. Mary Renck Jalongo

Dissertation Committee Members: Dr. Beatrice Fennimore  
Dr. Joann Migyanka

The purpose of this research was to explore the teacher self-efficacy beliefs of early childhood preservice educators and their preparedness to teach students with Autism Spectrum Disorder (ASD). Phase One of this mixed-methods approach asked preservice early childhood educators ( $N = 34$ ) to complete the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) as well as an open-ended vignette survey which described common academic, behavioral, and social challenges of students with ASD. Respondents were assigned the task of identifying goals, resources, and strategies to address each scenario. In Phase Two of this research, participants from the larger population ( $N = 6$ ) discussed their perceived preparedness to teach students with ASD in semi-structured interviews.

Results indicated preservice educators have moderately high levels of self-efficacy in instructional practices, student engagement, and classroom management. However, reported goals, resources, and strategies for students were broadly defined and lacked ASD specificity. Further, interviewees recognized the positive influence of experience with students with ASD on their preparedness to teach this population of students, but were cognizant of deficits in their knowledge and skills. Consequently, respondents expressed plans to pursue ASD-specific professional development.

This study demonstrated that early childhood educators complete teacher training with high self-efficacy, but are underprepared to address some of the challenges of teaching students with ASD. Implications of this research suggested several modifications in teacher preparation. First, preservice educators should have greater experience with ASD embedded into course assignments, discussions, and fieldwork. Second, novice educators need to learn to seek teacher-centered resources, such as collaboration with colleagues and families, to help address gaps in ASD understanding. Third, beginning teachers must commit to ongoing ASD professional development. The combination of these experiences encourages the reflective practices that foster mature teaching repertoires.

## ACKNOWLEDGEMENTS

Above all, I praise God for providing me with the strength and perseverance to see this dream to fruition. I have “delighted in the Lord, and He has given me the desires of my heart” Psalms 37:4.

A heartfelt thanks goes to my advisor Dr. Mary R. Jalongo, and the members of my committee, Dr. Beatrice Fennimore, and Dr. Joann Migyanka. I hope that my research has met the high expectations they set for me.

This work would not be possible without the support of my friends and family. I am so glad to have experienced this journey with my colleague, Épryl King. I am confident that this program has bonded our friendship for life.

I am so appreciative to my devoted parents, Reginald and Gloria Mathis, who instilled in me a value of learning and who motivated me to pursue a career in education. I would not be who I am without their unconditional love and support.

With certainty, I know this project has been sustained by the encouragement of my sister, Traci Jackson, who has been a model of faithful endurance. I am also grateful for the presence of my grandmother, Margaret Harper, whose ongoing support of my talents has been a constant in my life.

I am so very thankful to my husband, Charles Shelton, who gladly made my pursuit of this degree a family priority. He has been my greatest advocate, and I am so blessed to love and be loved by him.

I am grateful for my two precious youngest children, Nathaniel Charles and Shayleigh Elizabeth. The joy of finally completing this degree is greatly overshadowed by the elation of being their mother.

Lastly, I dedicate this work to my amazing oldest son, Christopher Matthias, whose challenges to achieve in school were the inspiration for this research. It is my greatest hope that someday he – and all children with autism – will attend schools where they are recognized for their potential, not their disability.

## TABLE OF CONTENTS

Chapter	Page
ONE	THE PROBLEM.....1
	Background.....1
	Statement of the Problem.....4
	Purpose of Study.....9
	Questions to be Researched .....13
	Significance of Study.....14
	Limitations .....15
	Definition of Terms.....16
	Summary .....17
TWO	REVIEW OF RELATED LITERATURE .....19
	Introduction.....19
	Historical Background of ASD .....20
	Development of Clinical Definition.....21
	Prevalence of ASD in the United States .....21
	Diagnosis & Evaluation of ASD.....23
	Early Warning Signs of ASD.....25
	Strategies for Children with ASD .....26
	TEACCH Model .....26
	Denver Model .....27
	LEAP Programming.....27
	Floortime.....28
	Applied Behavioral Analysis .....28
	Inclusion of Students with ASD .....29
	Benefits of Inclusion of Students with ASD.....29
	Collaboration Among Teachers .....30
	Social Development.....31
	Inclusive Classroom Interventions.....32
	Individual Supports for Students and Parents.....34
	Systematic Instruction.....35
	Structured Learning Environments.....35
	Specialized Curriculum Content.....36
	Functional Approaches to Problem Behaviors .....37
	Parent Involvement .....38



Chapter	Page
Teacher Preparation to Teach Students with ASD .....	40
Dual Certification Programs .....	41
Inadequacies in Teacher Knowledge and Skills .....	42
Developmental Maturity of Traditional Preservice Educators .....	43
Characteristics of Novice and Experienced Educators .....	45
Teaching Repertoires and Intentional Teaching .....	48
Challenges of Differentiated Instruction.....	49
Expectancy Theory .....	51
Theoretical Framework: Self-Efficacy .....	53
Sources of Self-Efficacy .....	54
Mastery Experience as a Source of Teacher Self-Efficacy.....	55
Vicarious Experience as a Source of Teacher Self-Efficacy .....	56
Social Persuasions as a Source of Teacher Self-Efficacy .....	57
Physiological/Emotional States as a Source of Teacher Self-Efficacy .....	58
Teacher Self-Efficacy and Inclusion.....	59
Teacher Attitudes, Values, and Beliefs Toward Inclusion .....	61
Antecedents to Teacher Attitudes and Teacher Attitude Levels.....	65
The Influence of Teacher Attitudes .....	68
Teacher Expectations for Students with Special Needs.....	69
Summary .....	71
<b>THREE</b> <b>PROCEDURES</b> .....	<b>75</b>
Introduction.....	75
Mixed-Methods Research .....	76
Survey Instruments .....	79
Semi-Structured Interviews .....	82
Selection of Research Participants.....	83
Purposeful Sampling.....	84
Sites of Research.....	85
Site A .....	85
Site B.....	86
Site C.....	86
Research Instruments .....	87
<i>Teacher Sense of Efficacy Scale</i> .....	87
Open-Ended Vignette Survey Instrument.....	89
Semi-Structured Interviews .....	91
Procedures for Data Collection.....	92
Plan for Data Analysis .....	94
Summary .....	96

Chapter		Page
FOUR	RESULTS .....	98
	Introduction.....	98
	Study Demographics .....	100
	Characteristics of Participants.....	100
	<i>Teacher Sense of Efficacy Scale</i> Results.....	103
	Teacher Self-Efficacy Beliefs of Preservice Early Childhood Educators .....	104
	Student Engagement, Classroom Management, and Instructional Practices: Self-Efficacy Beliefs .....	107
	Open-Ended Vignette Survey Design .....	108
	Description of Open-Ended Vignette Narratives .....	109
	Quality of Participant Responses to Open-Ended Vignette Survey.....	112
	Types of Learning Goals Set in Response to Vignette Scenarios.....	115
	Vignette #1: A Student Struggles with Reading Comprehension Skills .....	116
	Vignette #2: A Student Perseverates on Preferred Topic of Conversation.....	119
	Vignette #3: A Student Fails to Complete Classroom Assignment .....	122
	Vignette #4: A Student Perseverates on an Object .....	124
	Common Themes among Reported Learning Goals.....	126
	General focus .....	127
	Concentration on most immediate concern.....	127
	Types of Resources Suggested to Address Vignette Scenarios .....	127
	Vignette #1: A Student Struggles with Reading Comprehension Skills .....	128
	Vignette #2: A Student Perseverates on Preferred Topic of Conversation.....	130
	Vignette #3: A Student Fails to Complete Classroom Assignment .....	132
	Vignette #4: A Student Perseverates on an Object .....	133
	Common Themes among Reported Resources .....	135
	Student-centered resources .....	136
	Application of resources .....	136
	Types of Strategies Suggested to Address Vignette Scenarios.....	136
	Vignette #1: A Student Struggles with Reading Comprehension Skills .....	137
	Vignette #2: A Student Perseverates on Preferred Topic of Conversation.....	139
	Vignette #3: A Student Fails to Complete Classroom Assignment .....	141
	Vignette #4: A Student Perseverates on an Object .....	143
	Common Themes among Reported Strategies.....	145

Chapter	Page
	Misperception of classroom strategy .....145
	Limited use of ASD-specific strategies .....145
	Summary of Initial Phase of Research.....146
	Follow-up Interview Results.....148
	Analysis of Preservice Educators' Interviews .....150
	Concerns with Teacher Training Curricula.....151
	Deficits in Knowledge and Skills .....152
	Limited knowledge of ASD-specific strategies and resources.....153
	The Positive Role of Experience with Students with ASD.....156
	Field experiences/observations .....156
	Volunteer/work experiences .....158
	Personal relationships .....159
	Impact of experience on teacher attitudes toward Inclusion.....160
	Plans for Future Professional Development in ASDs.....161
	Mentors .....161
	Collaboration with colleagues.....162
	Personal endeavors.....163
	Partnerships with students and families .....164
	Pursuit of an advanced degree .....165
	Summary of Second Phase of Research.....167
	Summary .....168
FIVE	SUMMARY, DISCUSSION, AND RECOMMENDATIONS .....170
	Introduction.....170
	Summary and Discussion of Findings .....172
	Summary and Discussion of Findings Related to The First Research Question.....173
	Summary and Discussion of Findings Related to The Second Research Question .....176
	Summary and Discussion of Findings Related to The Third Research Question .....178
	Summary and Discussion of Findings Related to The Fourth Research Question.....180
	Additional Quantitative Findings Related to Research Questions 2-4.....182
	Summary and Discussion of Findings Related to The Fifth Research Question .....183
	Concerns with teacher training .....184
	Positive influence of experience with students with ASD .....186
	Plans for on-going professional development.....190
	Study Limitations.....193

Chapter	Page
Recommendations for Teacher Preparation Programs .....	194
Teacher Preparation Through Field Experience .....	196
Teacher Preparation Through Cultural Competency .....	197
Recommendations for Ongoing Professional Development.....	198
Peer Observation .....	199
Japanese Lesson Study.....	200
Collaboration through Co-Teaching .....	201
Collaboration through Professional Learning Communities .....	201
Collaboration with Parents.....	201
Research Implications .....	203
Recommendations for Further Research.....	207
Summary .....	209
REFERENCES .....	212
APPENDICES .....	240
Appendix A- <i>Teacher Sense of Efficacy Scale</i> .....	240
Appendix B- Open-Ended Vignette Survey Instrument .....	241
Appendix C- Guiding Questions for Follow-Up Interviews.....	244
Appendix D- Participant Cover Letter .....	245
Appendix E- Interview Cover Letter .....	247
Appendix F- Voluntary Consent Form .....	249
Appendix G- Interview Follow-Up Letter .....	250
Appendix H- Researcher-Developed Rubric for Open-Ended Vignette Survey Responses.....	251

## LIST OF TABLES

Table	Page
1	DSM-5 Levels of Severity for Autism Spectrum Disorders .....24
2	Survey Participant Response Results.....102
3	Demographic Characteristics of Participants.....103
4	Preservice Teachers' Perceived Self-Efficacy .....106
5	Preservice Teachers' Perceived High Levels of Self-Efficacy .....107
6	Preservice Teachers' Perceived Self-Efficacy by Factor .....108
7	Researcher-Developed Rubric for Open-Ended Vignette Survey Responses.....114
8	Quality of Participant Response to Vignette Sequences.....115
9	Quality of Participant Responses with Respect to Item Focus .....115
10	Participants' Reported Goals for Student with ASD Described in Vignette #1 .....117
11	Participants' Reported Goals for Student with ASD Described in Vignette #2 .....120
12	Participants' Reported Goals for Student with ASD Described in Vignette #3 .....123
13	Participants' Reported Goals for Student with ASD Described in Vignette #4 .....125
14	Participants' Reported Resources for Student with ASD Described in Vignette #1 .....129
15	Participants' Reported Resources for Student with ASD Described in Vignette #2 .....131
16	Participants' Reported Resources for Student with ASD Described in Vignette #3 .....133
17	Participants' Reported Resources for Student with ASD Described in Vignette #4 .....135

Table	Page
18	Participants' Reported Strategies for Student with ASD Described in Vignette #1 .....138
19	Participants' Reported Strategies for Student with ASD Described in Vignette #2 .....140
20	Participants' Reported Strategies for Student with ASD Described in Vignette #3 .....142
21	Participants' Reported Strategies for Student with ASD Described in Vignette #4 .....144
22	Interview Participant Response Results.....149
23	Demographic Characteristics of Interview Participants .....150
24	Emergent Themes Gathered from the Interviews .....166

## CHAPTER ONE

### THE PROBLEM

#### **Background**

Autism Spectrum Disorder (ASD) is a lifelong developmental disorder marked by difficulties in communication, social impairments, and repetitive or perseverative behaviors (Ashwell, 2009; Charman, 2002; Doris, 2012). ASD is nondiscriminatory, affecting all races, ethnicities, and social classes (Busby, Ingram, Baurin, Oliver, & Lyons, 2012). Because conclusive genetic markers do not yet exist, a diagnosis of ASD is commonly based on descriptions and observations of behaviors (Autism Spectrum Disorders, 2010; Doris, 2012). Although specially trained physicians and psychologists typically assign the formal diagnosis of ASD, insight from a multi-disciplinary team, including parents, educators, speech pathologists, and occupational therapists, is considered often (Doris, 2012; Ratajczak, 2011; Woodbury-Smith, Klin, & Volkmar, 2005).

In recent years, the prevalence of ASD has grown tremendously. In fact, officials from the Center for Disease Control and Prevention (2012) reported that about 1 in 88 children have the disorder in the United States. This number reflects a significant increase from the previous statistic that identified 1 in 110 children with ASD (Center for Disease Control and Prevention, 2012). Furthermore, the prevalence of ASD among boys is even more pronounced; the condition affects males five times as often as females (Center for Disease Control and Prevention, 2012).

Coupled with this phenomenon has been the rise in the number of students with ASD entering public school settings (Safran, 2008; Stichter, Crider, Moody & Kay, 2007;

White, Scahill, Klin, Koenig, & Volkmar, 2007). According to the U.S. Department of Education, National Center for Educational Statistics (2010), from the 2002-2003 to 2007-2008 school years, students with autism supported by federally funded programs for the disabled rose from 137,000 to 296,000 students. The number of students with autism in public schools has correspondingly increased from 0.3% to 0.6% of the total enrollment during this same time period (U.S. Department of Education, National Center for Educational Statistics, 2010). Furthermore, many of these students with ASD in public school settings are assigned to general education classrooms for at least some portion of the school day (Friedlander, 2009; White et al., 2007).

Compounding the complexity of ASD is its variance in presentation within individuals (Scheuermann, Webber, Boutot, & Goodwin, 2003; Whitby, Travers, & Harnik, 2009). Autism is widely recognized as a spectrum disorder because its manifestation in individuals can vary from minor deficits in understanding and social function to pronounced disabilities (Ashwell, 2009; Willis, 2012). For example, communication deficits in ASD may include an absence of speech entirely or difficulty maintaining conversation successfully (Autism Spectrum Disorders, 2010). Variety also may exist among symptoms; a child with advanced language acquisition may exhibit challenging behaviors (Willis, 2012). Consequently, the unique strengths and weakness of a student with ASD must be considered to determine an appropriate educational plan (Scheuermann, Webber, Boutot, & Goodwin, 2003; Willis, 2012).

Some experts have concluded that the observed increases in ASD diagnoses may be a result of the recognition of universal traits (Charman, 2002). Furthermore, the acceptance of a broader spectrum of disorders among autism diagnoses offers two



explanations for its rapid increase in the population of contemporary school children (Charman, 2002). First, heightened awareness of the symptoms of ASD has corrected common misdiagnoses of disorders, especially in students with limited functioning ASD (Charman, 2002). In the past, children with more severe autistic symptoms were assigned an intellectual disorder or general developmental disorder far more frequently than an autism diagnosis (Charman, 2002). Second, acknowledging ASD as one of multiple diagnoses within one individual has become more commonplace among medical professionals (Charman, 2002). Thus, a child with cerebral palsy or Down syndrome could also maintain an ASD diagnosis.

Early diagnosis and treatment are often associated with improved functional behavior and symptom manifestation (Rogers & Vismara, 2008). For a child with ASD, this type of intervention may lead to long-term adjustment and achievement (Blane & Borden, 2008). An interdisciplinary team approach generally is used to evaluate the skills of children with ASD and the early intervention plans that result are designed to implement appropriate behavioral, academic, and social goals for students (Blane & Borden, 2008; Willis, 2012). Designed with consideration of family input, these student objectives strive to build collaboration among parents and school professionals (Blane & Borden, 2008).

Such goals are often included within an Individual Family Service Plan (IFSP) or an Individual Education Program (IEP) (Willis, 2012). Children with disabilities who are younger than three have early intervention services dictated by an IFSP while the local school district plans and implements the IEP for preschool and school-age children (Ray, Pewitt-Kinder, & George, 2009). Both the IFSP and IEP outline the educational and

developmental goals and ensure accountability by identifying explicitly who will deliver services, how progress will be monitored and assessed, and what classroom accommodations will be provided (Ray et al., 2009).

Most certainly, the inclusion of ever-increasing numbers of students with ASD in schools is exerting a major influence on teachers, support services, intervention practices, and curriculum (Whitby et al., 2009). The management of ASD for children and their families rests on effective educational interventions (Ashwell, 2009; Doris, 2012). Educators must match interventions to the unique academic profile of students to promote achievement (Whitby et al., 2009). Moreover, these strategies must be comprehensive and not only address academic achievement but also social and behavioral challenges (Ashwell, 2009).

### **Statement of the Problem**

The tenets of the Individuals with Disabilities Education (IDEA) act do not stipulate full inclusion, but rather mandate that students with disabilities learn in the “least restrictive environment” (Cook & Rumrill, 2000; Obiakor, 2011; Winzer, 2009). This concept refers to the inclusion of students with disabilities with their nondisabled peers to the maximum extent possible (Cook & Rumrill, 2000; Obiakor, 2011; Winzer, 2009). Further, students with special needs cannot be removed from general education classrooms unless their goals cannot be met in that environment with adequate support (Obiakor, 2011). This provision was made in the IDEA act to prohibit the exclusionary practices of educating students with disabilities in separate facilities (Obiakor, 2011).

Society has based the ideals of inclusion on the affirmation of social justice (Obiakor, 2011; Winzer, 2009). By assigning students with special needs to the least

restrictive environment, children with disabilities and their typical peers have greater opportunity to improve their social acceptance, academic progress, and self-confidence (Cook & Rumrill, 2000). Furthermore, inclusion holds the promise of social reform as it encourages students without disabilities to exhibit greater sensitivity and tolerance for individual differences among their classmates and peers (Cook & Rumrill, 2000; Winzer, 2009). Nonetheless, schools can inspire this type of student growth and impact only if professionals are well-prepared for their roles to teach in inclusive classroom settings (Obiakor, 2011).

Despite the importance of specialized training, teachers with ASD background knowledge frequently are absent from general education classrooms (Loiacono & Allen, 2008). Certainly, some educators will pursue professional development independently, but this instruction often proves inadequate to address the diverse learning needs of students on the ASD spectrum. The *No Child Left Behind* act of 2001 requires that schools assign highly qualified teachers to all content areas, and higher education has begun to consider the implications of this mandate for its special education teachers (Brownell, Sindelar, Kiely, & Danielson, 2010). Ignoring the connection between quality ASD teacher training and student success can be detrimental to the school community as a whole.

Opponents of inclusion for students with ASD cite the burden of increased professional responsibilities for general education teachers. These opponents' argument is that teachers are simply unprepared or underprepared to meet the needs of students with ASD and lack specialized training (Loiacono & Allen, 2008). Supporters of inclusion agree with these assertions. Educators who are poorly prepared will negatively

affect student access, equity, and inclusion (Obiakor, 2011). Accordingly, educators must learn to value all learners and their contributions to the classroom community (Obiakor, 2011; Winzer, 2009). In this way, teachers gain the knowledge and skills to address the needs of a diverse student population (Winzer, 2009).

Not only do the symptoms differ among students on the ASD spectrum but also learning needs (Autism Spectrum Disorders, 2010; Whitby et al., 2009). As school administrators plan for students with ASD, they must consider a wide continuum of needs (Autism Spectrum Disorders, 2010). Differences in age and developmental needs make a single plan of services inappropriate for individual schools and districts (Autism Spectrum Disorders, 2010). Instead, learning goals must be tailored to the unique needs of the student (Whitby et al., 2009). Students with ASD require teachers who take a cautious and intentional approach to instruction and who plan purposeful learning founded in student outcomes (Epstein, 2007; Scheuermann et al., 2003). In U.S. early childhood classrooms, it is often the case that general and special education teachers share responsibility for educating students with ASD (Busby et al., 2012). Yet, formal data about autism teacher training is severely limited (Scheuermann et al., 2003). Because professional standards for working with children on the autism spectrum remain undefined, teacher preparation programs, both in special education and general education, vary widely (Scheuermann et al., 2003). While general educators may have a basic familiarity of the disorder, few have had specialized training in autism (Busby et al., 2012). Such focused preparation is necessary not only to build knowledge and understanding, but also to access supports and resources (Leblanc, Richardson, & Burns, 2009).

In recent years, teacher preparation has evolved to address these deficits in its training programs (Brownell et al., 2010). As perspectives on disabilities and inclusion best practices have transformed so has the conceptualization of special education (Brownell et al, 2010). Additionally, challenges associated with high-stakes testing, rigorous standards, school accountability, and teacher shortages have inspired ongoing reevaluation of teacher preparation programs (Brownell et al., 2010). The result has been an integrated approach which combines general education and special education certification in a single program (Ashby, 2012; Brownell et al., 2012).

The purpose of a dual certification program is to prepare preservice educators to teach a diverse student population within an inclusive setting (Ashby, 2012). Without a distinction among general and special education, faculty have greater opportunities to collaborate (Ashby, 2012). Such partnerships offer novice teachers a wider resource base of knowledge, skills, assessments, and interventions (Brownell et al, 2012). Perhaps more importantly, integrated teacher preparation programs set clear expectations that educators are accountable for the education of all students, and that every student is entitled to a quality education (Ashby, 2012).

The state of Pennsylvania has recognized the importance of preparing novice teachers to work with a diverse student population. In 2007, the State Board of Education and the Pennsylvania Department of Education revised its certification guidelines for educators (Pennsylvania Department of Education, 2012). These revisions affect early childhood educators in particular (Pennsylvania Department of Education, 2012). The Early Childhood Education degree has been expanded to include fourth grade, creating an overlap between the Early Childhood and Elementary/Middle School

certificates (Pennsylvania Department of Education, 2012). More importantly, an Early Childhood Education degree dictates nine credits or 270 hours of special education course work and three credits of English Language Learning preparation (Pennsylvania Department of Education, 2012). Changes to the instructional certificates became effective January 1, 2013 (Pennsylvania Department of Education, 2012).

However, even integrated teacher preparation programs fail to address the challenges of teaching students with ASD adequately (Busby et al., 2003). Teacher preparation courses dedicated to ASD are often limited in scope and depth and can differ tremendously among institutions (Scheuermann et al., 2003). To help students with ASD progress in the classroom, professionals must have a full understanding of the complexity of the disorder (Leblanc et al., 2009). This type of professional development dictates comprehensive and on-going training in authentic classroom settings with frequent and specific feedback on the instruction of students with ASD (Scheuermann et al. 2003).

Research has shown that inadequate teacher preparation impacts self-efficacy (Lastrapes & Negishi, 2012; Leblanc et al., 2009; Swackhamer, Koellner, Basile, & Kimbrough, 2009). Perceived self-efficacy is based on how individuals judge their own ability to address the concerns of their environments (Bandura, 1982; Bandura, 1997). How one appraises his/her capabilities can profoundly impact his/her thought patterns, emotional responses, and behaviors in overwhelming circumstances (Bandura, 1982). Furthermore, judgments of self-efficacy can affect the level of effort and persistence an individual will devote to a task (Bandura, 1982). Only a strong sense of self-efficacy can endure failures and overcome stress effectively (Bandura, 1982).

Conversely, an absence of self-efficacy can undermine even the most proficient teaching skills (Lee, Patterson, & Vega, 2011). Educators with a high level of self-efficacy exhibit greater levels of resiliency in their teaching, maximizing student progress and achievement (Pendergast, Garvis, & Keogh, 2011). Such teacher competence is especially critical to elementary educators of inclusion classrooms, as traditional methods sometimes prove ineffective for students with special needs (Sari, Celikoz, & Secer, 2009; Lee et al., 2011). Consequently, both a strong sense of self-efficacy and quality teacher training are powerful influences on teacher effectiveness (Pendergast et al., 2011).

### **Purpose of the Study**

This research will explore the teacher self-efficacy beliefs of preservice early childhood educators and their preparedness to meet the demands of students with ASD. Self-efficacy plays an important role in building teacher effectiveness (Pendergast et al., 2011). Therefore, the perceptions of self-efficacy preservice teachers maintain can help gauge teacher impact within the classroom. Teachers with higher levels of self-efficacy can influence student achievement and progress in powerful ways (Pendergast et al., 2011). For students with ASD, this type of influence can have enduring consequences on personal and professional goals.

This is not to suggest, however, that teacher self-efficacy rests on extensive knowledge of ASD. Reflection and analysis of pedagogical beliefs are central to effective teaching, and acknowledging deficiencies in knowledge can help teachers better address student needs (Grierson, 2010). Authentic classroom experiences facilitate frequent opportunities to apply knowledge and skills and to build enduring understanding

(Downey, 2008; Dryfus & Dryfus, 1986). Such experiences help teachers acquire the well-organized pedagogical awareness necessary to decipher complex obstacles to student learning (Fogarty, Wang, and Creek, 1983).

These teacher beliefs of instruction and learning are founded in teacher education programs (Peterson, Schreiber, & Moss, 2011; Taskin-Can, 2011). Novice educators need access to content knowledge which will prepare them to provide instruction to learners with ASD which will result in achievement (Busby, et al. 2012). In addition, preservice educators need teaching experiences with diverse groups of students (Scheuermann, et al. 2003). Successful field experiences with students with ASD can promote greater self-efficacy in the classroom (Busby, et al. 2012).

The challenge of generating a strong sense of self-efficacy for preservice educators of students with ASD begins with an appropriate and effective teacher training program (Leblanc et al., 2009). While preservice teachers bring idealism and enthusiasm to their roles in the classroom, they often maintain over-simplified career expectations (Downey, 2008). These belief systems become problematic when dissonance is apparent between how aspiring teachers are trained and their previous school experiences (Peterson et al., 2011). As novice teachers prepare to teach, they use new knowledge and understanding to shape their pedagogical views (Taskin-Can, 2011). Such personal growth is the result of authentic classroom experience that compels novice teachers to examine, test, and critique their existing teaching principles (Downey, 2008; Taskin-Can, 2011).

Yet, the developmental stage that many preservice educators navigate during their teaching training years can also heavily influence their beliefs and understandings of the



profession. Typically, parental guidance is reduced in late adolescence, and youth are exposed to varied information sources (Oda, 2007; Papalia, Olds, & Feldman, 2009). University settings, in particular, present unique factors that can impact adolescent development (Papalia et al., 2009). Beyond the curricular content which offers both novel insights and faculty role models, college adolescents also interact with peers of differing backgrounds and perspectives. (Papalia et al., 2009; Weisskirch, 2006). Adolescents use these experiences to create a system of beliefs that shape their learning, which sometimes can produce misrepresentations of the world around them (Weisskirch, 2006).

Such a distortion of reality can prompt adolescents to oversimplify complex challenges (Elkind, 1998). As adolescents mature cognitively, their world views become more idealistic (Elkind, 1998; Papalia et al., 2009). Yet, the daily behaviors and actions of adolescents do not always mirror idealist beliefs, creating what Elkind (1998) refers to as “apparent hypocrisy.” Additionally, egocentrism often characterizes adolescent development causing adolescents to assume that their own mental preoccupations are the same as those of others (Elkind, 1967). This self-centered perspective can make it particularly challenging for adolescents to consider alternative viewpoints from adults (Elkind, 1967).

Furthermore, as adolescents enter college they begin a transition to adulthood that motivates them to experiment with personalities and roles as they shape their identities (Arnett, 2007). Arnett (2008) terms this period “emerging adulthood” as youth abandon the structure parents provide to embrace the freedom to explore self. This self-focused time in life affords young people the greatest opportunity for self-development, including

education and career advancement (Arnett, 2007). Young adulthood is also a developmental stage characterized by high levels of optimism and hopefulness (Arnett, 2008). For novice teachers, this sense of idealism may create an unrealistic perspective of the educational profession (O'Sullivan, MacPhail, & Tannehill, 2009).

Similarly, emotional arousal and vicarious experiences impact the attitudes and values of preservice teachers (Pendergast et al., 2011). When teaching beliefs are too idealistic, daily classroom experiences easily overwhelm novice teachers as enthusiasm and a sense of humanity are inadequate substitutes for mastery of skills (Pendergast et al., 2011). Consequently, it is imperative that teacher preparation programs expose the beliefs of preservice teachers and engage these students in a reflective process to modify or abandon their previous teaching ideals (Peterson, 2011).

This type of reflective practice is crucial to the effective preparation of educators of students with ASD. Preservice teachers must become intensely aware of the wide diversity among students with ASD, and learn strategies to recognize individual student strengths (Leblanc, 2009). Further, novice teachers must acknowledge individual differences among students with ASD, and use this knowledge to inform their instructional practices (Willis, 2012). Because teacher behavior and understanding are interrelated, interventions that are implemented successfully can inspire change in how educators view the process of teaching and learning (Gersten et al., 2000). Such professional development is vital to the effectiveness of novice educators who are in the midst of building teaching repertoires (Garrett, 2007).

## Questions to be Researched

A mixed methods design uses both qualitative and quantitative approaches in a single study (Gay, Mills, & Airasan, 2009). The intention of a mixed method study is to capitalize on the strengths of both methods in order to explore a problem more comprehensively (Gay et al., 2009). This mixed methods research will examine teacher self-efficacy and educators' preparedness to teach students with ASD. In the quantitative portion, participants will respond to a Likert scale survey, the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001), while a series of open-ended questions based on short vignettes and a series of structured interviews will compose the qualitative section. Data from these instruments will be used to study the following questions:

1. How do preservice teachers majoring in early childhood describe their sense of self-efficacy with respect to student engagement, classroom management, and instructional practices?
2. What type of learning goals do preservice early childhood teachers report setting to meet the needs of young children with ASD in inclusive classrooms?
3. What types of resources do preservice teachers specializing in early childhood access to meet the needs of students with ASD in inclusive classrooms?
4. What strategies do preservice early childhood teachers report as part of their teaching repertoires that they would draw upon to meet the academic, social, and behavioral challenges of students with ASD?
5. What are the perceptions of preservice early childhood teachers concerning

their preparation to address the academic, social, and behavioral needs of students with ASD in inclusive classrooms?

### **Significance of the Study**

A quality teacher training program is paramount to producing skillful future educators. In the case of students with ASD, teacher effectiveness can be critical in realizing the academic, behavioral, and social goals of these students (Leblanc et al., 2009). Such achievement in the classroom can have long-term effects on productivity and adjustment of learners with ASD (Ashwell, 2009; Autism Spectrum Disorders, 2010; Blane & Borden, 2008). Management of the symptoms of ASD begins with educational interventions that appropriately address a wide range of needs including, functional communication, social skills, achievement, independent daily living, and problem behaviors (Ashwell, 2009). Further, when these interventions are implemented early in the educational careers of students with ASD, outcomes are both more improved and lasting (Ashwell, 2009; Leblanc, 2009; Rogers & Vismara, 2008). Consequently, preparing preservice early childhood educators to engage students with ASD effectively in the classroom can be crucial to the lifelong productivity for these students (Ashwell, 2009; Autism Spectrum Disorders, 2010; Leblanc, 2009; Whitby et al., 2009).

This study will attempt to examine the teacher self-efficacy of preservice early childhood educators and their perceived level of preparedness to teach students with ASD. This research is important because the quality and quantity of available literature in this area is severely limited. The findings of this study may prompt improvements to course content in teacher training programs with regard to effective curricula and strategies for students with ASD. Similarly, the results of this study could motivate

educators to make more deliberate attempts to seek diverse resources to develop viable classroom interventions for the ASD student population.

### **Limitations**

In the quantitative portion of this study, the researcher examined the self-efficacy of preservice early childhood educators and their level of preparedness to teach students with ASD. The researcher used a sample population of 34 preservice teachers. Although the sample size in this study was sufficient for research of this nature, a larger sample would have offered greater reliability and validity.

Furthermore, the qualitative survey required participants to report intervention and strategies for instructing students with ASD. This task assumed that the subject participants had adequate knowledge to suggest appropriate educational practices. Because the sample population consisted entirely of preservice early childhood teachers, the subject participants may have been limited in their knowledge of and experiences with students with ASD.

Finally, the results of this research are limited in their generalizability as the participants of this study were solicited from colleges and universities in a single state. While the course content varied among the institutions of learning, it was assumed that the standards of the teacher training program were uniform. Accordingly, students may have shared similar attitudes, beliefs, and/or experiences. Demographic questions in the data collection allowed the researcher to discern similarities and differences among the participants in their knowledge and understanding of students with special needs.

## **Definition of Terms**

1. Autism Spectrum Disorder (ASD) – Autism Spectrum Disorder is a developmental disorder marked by impairments in communication and social skills, and repetitive or perseverative behaviors (Charman, 2002). ASD refers to five neuro-developmental disorders including, autism, Asperger's Syndrome, Childhood Disintegrative Disorder (CDD), Rhett Syndrome, and Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS) (Doris, 2012).
2. Classroom interventions – instruction specially designed to meet functional and developmentally appropriate goals implemented within daily classroom learning. Classroom interventions address instructional procedures, classroom arrangement, scheduling, and development of class rules (Hemmeter, 2000).
3. Inclusive classroom – a classroom which provides effectively delivered educational services to students with special needs alongside typically developing peers (Winzer, 2009).
4. Preservice early childhood teacher – an educator who has not yet assumed the formal responsibilities of teaching and is enrolled in a 4-year teacher preparation program in the state of Pennsylvania that would lead to Pre-K-4<sup>th</sup> grade initial certification.
5. Teacher self-efficacy – perceived judgments of the effectiveness of one's actions in response to situational experiences. Self-efficacy determines how people behave, think, and respond under stressful conditions (Bandura, 1982).
6. Teacher effectiveness – instruction which yields student achievement via a cyclical process of data analysis, student goal setting, development of evidence-

based strategies, and reflective practice within a supportive network of colleagues (Hirsh, 2009).

7. Teacher preparedness – a collection of skills, knowledge, and understanding required for successful entry into schools and the professional community (Swabey, Castleton, & Penney, 2010).
8. Intentional teaching – thoughtful and purposeful teaching which promotes knowledge and skill acquisition for students. Intentional teaching combines judgment with expertise to plan learning experiences for children which are mindful of student goals (Epstein, 2007).
9. Teacher repertoire – the meaningful organization of instructional strategies related to specific learning outcomes and developed through ongoing practice and feedback (Garret, 2007).

### **Summary**

The population of students with ASD in public school classrooms is increasing (Safran, 2008; Stichter et al., 2007; White et al., 2007). Although general characteristics may define ASD, the disorder will present differently in each student (Stichter et al., 2007). As a result, universal intervention strategies are simply inappropriate for students with ASD (Autism Spectrum Disorders, 2010). Furthermore, specialized training in autism is often lacking or inadequate in educator professional development, making it difficult for teachers to implement successful learning adaptations independently (Liacono & Allen, 2008).

This study seeks to investigate the self-efficacy of preservice early childhood educators and their level of preparedness to teach students with ASD. Additionally, this

research will examine the knowledge, skills, and resources these novice educators access when meeting the needs of students with ASD. By studying these significant issues, it is hoped that this research will support efforts to reevaluate current teacher preparation programs with respect to autism inclusion practices.

In Chapter Two, a review of the literature is offered. It includes a discussion of ASD-specific inclusion practices, shortcomings in teacher training programs, and the impact of teacher preparedness and self-efficacy on attitudes toward students with ASD and the inclusion process.



## CHAPTER TWO

### REVIEW OF THE LITERATURE

#### **Introduction**

This literature review will examine the growing prevalence of Autism Spectrum Disorder (ASD) through historical and contemporary perspectives. The clinical definition of the disorder as defined by common symptoms recognized in the evaluation process will be outlined. Also noted are general strategies employed in Early Intervention settings. Further, the benefits and challenges of inclusion and classroom interventions implemented to address the needs of students with ASD will be discussed. Because educators hold significant accountability in executing inclusion policies, teacher preparation to educate students with ASD will be explored in this chapter.

Teacher training quality can critically influence teacher effectiveness for students with ASD. In particular, teacher preparedness can profoundly affect self-efficacy and attitudes toward inclusion. Moreover, teacher attitudes help to shape expectations for students with ASD. By examining theories of teacher self-efficacy, this chapter seeks to describe how novice teachers generate and maintain attitudes and beliefs. This review of literature discusses four themes pertinent to the theoretical framework of this research, including: (1) the value of expectancy theory on task motivation, (2) the impact of self-efficacy on instructional practice, (3) the development of teacher attitudes, and (4) the role of teacher expectations in inclusive classrooms. This literature review opens with a description of the historical background of ASD.

## **Historical Background of ASD**

At John Hopkins University, in 1943, Kanner observed a group of 11 children who presented a unique set of emotional and social deficits (Barrett, 2011). The children lacked emotional contact, normal relationships with peers, and functional language (Barrett, 2011). Kanner used the term “early infantile autism” to describe the symptoms with which the children presented (Autism, 1997; Barrett, 2011; Lyons & Fitzgerald, 2007). Also in 1943, Asperger used his observations of four young children to write about childhood autistic psychopathy (Lyons & Fitzgerald, 2007). Asperger described these children as being socially isolated and emotionally distanced from their peers (Frith, 1989). Both Kanner and Asperger used the term “autistic” which was first coined by Bleuler, a Swiss psychiatrist who used the term to note characteristics of individuals with schizophrenia (Lyons & Fitzgerald, 2007). Kanner and Asperger shared other similarities in their observations, as each researcher noted stereotypical behaviors and inconsistent cognitive development (Firth, 1989).

Without a biological marker to account for the manifestation of autism, parenting styles were blamed for autism diagnoses during the middle of the twentieth century (Barrett, 2011). In particular, mothers were targeted for causing autism because of an obsession with perfection, authoritarian personality, and/or aloof demeanor (Barrett, 2011). Such maternal influences were thought to motivate the child to regress emotionally and to become extremely introverted (Barrett, 2011). The introduction of nuclear medicine during the 1980s, however, generated a new perspective of autism as a neuro-developmental disorder (Barrett, 2011).

## **Development of Clinical Definition**

Published by the American Psychiatric Association (APA), *The Diagnostic and Statistical Manual of Mental Disorder, Fifth Edition (DSM-5)* is used to diagnose and categorize mental disorders (APA, 2013a). Although discovered much earlier, autism was not recognized as a mental health disorder by the APA until the 1980s (MacFarlane & Kanaya, 2009). The clinical definition of autism is described as a lifelong developmental disorder marked by difficulties in communication, social impairments, and repetitive or perseverative behaviors (Ashwell, 2009; Charman, 2002; Doris, 2012).

Published in May 2013, the DSM-5, made significant changes to the autism category (APA, 2013a). Alterations included an ASD category which eliminated the five separate diagnoses previously under the autism heading (APA, 2013a). Additionally, the newly implemented diagnostic criteria take into consideration the range of severity within the disorder, offering a more detailed assessment (APA, 2013a). Such amendments will help professionals not only to diagnose ASD more accurately, but also to acknowledge person-specific symptoms and behaviors (APA, 2013a).

## **Prevalence of ASD in the United States**

In recent years, the prevalence of ASD has grown tremendously in the United States (Baio & Center for Disease Control, 2012; Kopetz & Lee, 2012; Posserud, Lundervold, Lie & Gillberg, 2010). The Autism and Developmental Disabilities Monitoring (ADDM) Network estimates the prevalence of ASD based on data taken from 14 sites in the United States (Baio & the Center for Disease Control, 2012). In 2008, the overall prevalence of ASD among the ADDM Network sites was 11.3 per 1,000 or approximately, 1 in 88 (Baio & Center for Disease Control, 2012). In comparison to

earlier surveillance years, these data reflect a significant increase (Baio & Center for Disease Control, 2012). The current statistics increase 23% from data collected in 2006 and 78% from data collected in 2002 (Baio & Center for Disease Control, 2012). Further, the incidence of ASD among boys is even more pronounced, with the condition affecting males five times as frequently as females (Center for Disease Control and Prevention, 2012).

The complexities of ASD, along with the absence of a biological marker for diagnosis, pose a challenge in monitoring overall prevalence (Baio & Center for Disease Control, 2012). However, current research offers several explanations for its rising incidence (Baio & Center for Disease Control, 2012; Charman, 2002; Kopetz & Lee, 2012; Posserud et al., 2012). First, heightened awareness of the symptoms of ASD has corrected misdiagnoses of disabilities (Charman, 2002). Second, revisions to the clinical definition of ASD have significantly affected estimates of ASD prevalence in the population (Baio & Center for Disease Control, 2012). Since its discovery, a diagnosis of ASD has evolved from a narrowly-defined impairment to include social deficits across various levels of intellectual functioning (Kopetz & Lee, 2012; Posserud et al., 2010). Universal acceptance of variance in manifestation of ASD in individuals has led to a dramatic increase in the number of children diagnosed (Posserud et al., 2010). Third, ASD is more commonly acknowledged as one of multiple diagnoses within one individual (Charman, 2002).

Nonetheless, the rise in ASD diagnoses has influenced many social organizations and their effect on individuals with ASD (Kopetz & Lee, 2012). Among the social institutions the most profoundly affected are public schools (Kopetz & Lee, 2012). The

number of students with ASD in public school settings is growing in tandem with the rising incidence in the disorder (Safran, 2008; Stichter, Crider, Moody & Kay, 2007; White, Scahill, Klin, Koenig, & Volkmar, 2007). According to the U.S. Department of Education National Center for Educational Statistics (2010), from the 2002-2003 to 2007-2008 school years, students with autism supported by federally funded programs for the disabled rose from 137,000 to 296,000 students. The number of students with autism in public schools has correspondingly increased from 0.3% to 0.6% of the total enrollment during this same time period (U.S. Department of Education, National Center for Educational Statistics, 2010). Furthermore, over 90% of students with ASD in federally funded public schools spend some portion of the school day in the general education classroom (U.S. Department of Education, National Center for Educational Statistics, 2011).

### **Diagnosis and Evaluation of ASD**

Typically, observations for an ASD diagnosis come from multiple professional personnel, including therapists, physicians, and educators (Doris, 2012). Since no objective diagnostic test exists for ASD, specially trained physicians and psychologists assign a clinical diagnosis based on observations of behavior using the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5; APA, 2013a). To receive an autism diagnosis, an individual must have a history of childhood symptoms, even if diagnosis occurs later in development (APA, 2013b). Under the DSM-5, other criteria for an ASD diagnosis include social deficits, restrictive behaviors, and impairments in social function (APA, 2013b). Further, social and communication deficits may not be attributed to an intellectual disorder or global development delays (APA, 2013b). As

outlined in Table 1, social and communication impairments are measured by degree of severity (APA, 2013b).

Table 1

*DSM-5 Levels of Severity for Autism Spectrum Disorders*

Severity Level	Social Communication	Restrictive Behaviors
Level 3 Requires very significant support	Considerable deficits in language which impair social interaction	Regimented routines defined by intensely focused interests which impact daily functioning
Level 2 Requires significant support	Recognizable impairments in expressive and receptive communication that persist even with support	Regimented routines defined by intensely focused interests which frequently impact functioning in multiple settings
Level 1 Requires some support	Difficulty maintaining social engagement without individual support	Regimented routines defined by intensely focused interests which impact functioning by hindering the development of personal autonomy

*Note.* Adapted from American Psychiatric Association, 2013b

Despite the availability of diagnostic testing, the process of diagnosing ASD is tremendously complex (Autism, 1997; Ratajczak, 2011). However, autism is a spectrum disorder, and as such, its manifestation ranges from subtle deficits to profound disabilities (Ashwell, 2009). Accordingly, individuals with the same ASD diagnosis can have behaviors and achievements that are distinctly different from one another (Busby et al., 2012). This absence of a universal model of ASD presentation in individuals further complicates the diagnosis process.

## **Early Warning Signs of ASD**

Early diagnosis is often associated with improved functional behavior and symptom manifestation (Bryson, Rogers & Fombonne, 2003; Rogers & Vismara, 2008). Further, when early detection services provide insight to relevant treatment services, the individual prognosis of achievement and adjustment improve (Ashwell, 2009; Blane & Borden, 2008; Bryson, et al., 2003; Doris, 2012; Willis, 2012). Although individual maturity levels do vary and some symptoms of ASD may also be phases in typical development, persistent emotional, social, and communicative deficits should be viewed cautiously (Bryson et al., 2003). Accordingly, it is critical that parents and caregivers are aware of the early warning signs that may point to an ASD diagnosis.

Young children with ASD will often exhibit impaired social and communication development prior to age three (Autism, 1997). While the presence of one or two of the following behaviors does not dictate an ASD diagnosis, “Autism” (1997) suggests that the manifestation of several of the following early signs of ASD might warrant further evaluation:

- an aversion to touch;
- limited signs of empathy;
- lack of eye contact;
- repetitive and/or solitary play;
- difficulty engaging in imaginative play;
- intensive reliance on routine;
- echo speech;
- difficulty maintaining conversation or functional speech;

- stereotypical, repetitive behaviors (stimming);
- self-injurious behaviors;
- frequent tantrums for incomprehensible reasons; and/or
- difficulty distinguishing familiar people from strangers.

### **Strategies for Children with ASD**

Educational interventions that address communication, social skills, daily living, and problem behaviors are critical to the management of ASD (Ashwell, 2009). Seeking results similar to those achieved by assistive preschool programs for at-risk students, Early Intervention programs for young children with ASD similarly began in the 1980s (Bryson et al., 2003). These programs included highly focused and student directed activities designed to address developmental delays in a variety of areas (Bryon et al., 2003). The most successful Early Intervention programs featured curricula with a developmental orientation (Bryson et al., 2003). The following section headings will review some of the most effective treatment methods.

### **TEACCH Method**

In 1972, Eric Schopler developed the Treatment and Education of Autistic and Related-Communication-Handicapped Children (TEACCH) Method (Bryson et al., 2003). His methods use the strengths of children with ASD to inform instruction (Bryson et al., 2003). Often referred to as “structured teaching,” TEACCH instruction is based on evidence that individuals with ASD share characteristics that can facilitate learning (Mesibov & Shea, 2010). The most critical elements of structured teaching include, (1) a clearly defined learning environment, (2) access to individual strengths and interests, and (3) support for functional communication. For students with ASD in



particular, object manipulation, visual-spatial awareness, and commitment to highly-structured independent tasks comprise the autism-specific strengths supporting TEACCH methods (Bryson et al., 2003).

### **Denver Model**

Focused on the development of social skills, the Denver Model stresses intrapersonal relationship skills (Bryson et al., 2003). Created by Sally Rogers, the Denver Model uses the developmental timeline for children without disabilities to address developmental delays in students with ASD (Vismara & Roger, 2008). By establishing a positive social environment, teachers using the Denver Method attempt to build trusting relationships between children and adults throughout the learning process (Vismara & Roger, 2008). Shared engagement is maintained via joint activities with adults and children with ASD, and parent involvement is encouraged for success across multiple settings (Bryson et al. 2003).

### **LEAP Programming**

The Learning Experiences: An Alternative Program for Preschoolers and Parents (LEAP) program is a federally funded model which began in 1982 to serve both students with ASD as well as their typically-developing peers (Greshan, Beebe-Frankenberger, & MacMillian, 1999). The underlying basis of the LEAP model is that students with ASD can readily learn from non-disabled peers (Bryson et. al, 2003; Grechan et al., 1999). Four components set apart the LEAP model from other Early Intervention programs for students with ASD: (1) an integrated preschool classroom, (2) parent behavior skills training, (3) autism-specific teacher training, and (4) implementation of ongoing research on autism-specific best practices (Greshan et al., 1999).

## **Floortime**

As its name implies, the Floortime model, which was developed by Greenspan and Wieder, involves engagement of students with ASD and caregivers on a floor setting (Bryson et al., 2003). Representing both an intervention as well as a philosophy for interaction, Floortime uses playtime to provide opportunities to practice social skill development (Ryan, Hughes, Katsiyannis, McDaniel, & Sprinkle, 2011). One-on-one interaction with parents and children with ASD create experiences to challenge child adherence to routine and stereotypical behaviors while also developing socialization through parent modeling and prompting (Ryan et al., 2011).

## **Applied Behavioral Analysis**

Applied Behavioral Analysis (ABA) uses well-established techniques and common principles of behavior to target the specific needs of the individual with ASD and his/her family (Borden, 2011). Using observations and data collection of the child's behaviors with respect to age-appropriate goals, ABA uses a systematic process to shape behavior (Borden, 2011 & Ryan et al., 2011). ABA theory identifies behavior as a composition of three components, antecedent to the behavior, the behavior itself, and the consequence to the behavior (Ryan et al., 2003). The success of ABA is based on the fidelity with which it is implemented and the consistency of feedback on the behavior of the child with ASD (Ryan et al., 2003). Additionally, the support of caregivers is paramount to the generalization of new behaviors across environments (Ryan et al., 2003).

### **Inclusion of Students with ASD**

Federal mandates have influenced the way students with disabilities are educated in U.S. schools profoundly (Loiacono & Valenti, 2010). In particular, the Individuals with Disabilities Act (IDEA) has provided students with disabilities greater access to quality educational curricula and resources. (Cook & Rumrill, 2000; Obiakor, 2011; Winzer, 2009). Explicitly defined in IDEA, the concept of “least restrictive environment” has discouraged the removal of students with disabilities from general education classrooms without clear evidence of unsatisfactory progress toward educational goals with adequate support and services (Obiakor, 2011). As a result, students with disabilities are educated with their nondisabled peers to the maximum extent possible, making indiscriminate assignment of students with disabilities to separate educational facilities illegal (Cook & Rumrill, 2000; Obiakor, 2011; Winzer, 2009). Consequently, many students with ASD are included in general education classrooms for at least some portion of the school day (Friedlander, 2009; Loiacono & Valenti, 2010; White et al., 2007).

### **Benefits of Inclusion of Students with ASD**

The ideals of inclusion are based on social justice and equity (Obiakor, 2011; Winzer, 2009). Public schools should be a place where all children, regardless of ethnicity, economic status, or disability can receive a quality education (Winzer, 2009). As such, inclusion should be more than a treatment for students with special needs; it should also be a means to teach values, understanding, and skills necessary to be a productive citizen (Cook & Rumrill, 2000; Jordan, 2008). Furthermore, inclusion holds

the promise of social reform as it facilitates functional interaction among diverse populations of students (Cook & Rumrill, 2000; Winzer, 2009).

### **Collaboration Among Teachers**

Gaps in teacher training leave many beginning teachers ill-prepared to educate students with ASD in inclusive classrooms (Loiacono & Allen, 2008; Loiacono & Valenti, 2010; Low & Lee, 2011). While the *No Child Left Behind* act (NCLB) requires that schools assign highly qualified teachers to all content areas, this mandate has yet to prescribe specialized training for teachers of students with ASD (Loiacono & Allen, 2008; Loiacono & Valenti, 2010). In the United States, only about 15% of in-service teachers report receiving specialized ASD training in their preservice teacher courses (Morrier, Hess, & Heflin, 2011). Accordingly, teacher collaboration is both a necessity and a benefit of inclusion practices (Loiacono & Valenti, 2010; Chandler-Olcott & Kluth, 2009).

When special and general education teachers work together, they are better able to address the specific needs of students with ASD in an inclusive setting (Chandler-Olcott & Kluth, 2009; Winterman & Sapona, 2002). Teacher collaboration allows educators to contribute expertise to instruction that assists students with ASD to meet specific learning objectives (Winterman & Sapona, 2002). In the process, general education teachers develop knowledge and skills that open new paths of learning for typical peers (Chandler-Olcott & Kluth, 2009; Jordan, 2008). In addition, because teachers are also working to identify effective strategies for students, teachers learn to plan for learning outcomes rather than activities, and become more reflective practitioners in the process (Chandler-Olcott & Kluth, 2009).

## **Social Development**

Nonetheless, the benefit of inclusion most often acknowledged is social development (Obiakor, 2011; Winzer, 2009). Inclusion creates an environment whereby students with and without special needs learn from one another (Dixon, 2005). As students with ASD look to non-disabled children as models, typical students learn to appreciate diversity in the school community (Cook & Rumrill, 2000). While improving learning opportunities for all students, inclusion also helps students with disabilities learn strategies to effectively engage with others (Cook & Rumrill, 2000; Dixon, 2005). This type of experience has valuable application to future citizenship (Cook & Rumrill, 2000; Dixon, 2005).

Students with social deficiencies, such as ASD, learn skills through direct instruction, observation of peer models, and facilitated interaction (Dixon, 2005; Jones & Schwartz, 2004). Looking to their non-disabled peers as models, students with ASD can learn to participate more fully in classroom and social activities (Jones & Schwartz, 2004). Jones and Schwartz (2004) conducted a study to test the influence of peer, sibling, and adult models on the behavior of students with ASD. Their research indicated that peer models were found to be at least as effective, and often more effective, than adult models (Jones & Schwartz, 2004). Additionally, the students with ASD retained and generalized information more readily (Jones & Schwartz, 2004).

When teachers provide cooperative activities, students, both disabled and non-disabled, learn to interact in functional ways (Gelston, 2004). Similarly, including students with ASD in the classroom broadens teacher and peer understanding of autism (Humphrey, 2008; Owen-DeSchryver, Carr, Cale, & Blakeley Smith, 2008). Owen-

DeSchryver et al. (2008) studied the effect of providing ASD-specific training to typical elementary-aged children to increase their social interaction with students with ASD. Findings showed increased social initiations from both typical students and students with ASD (Owen-DeSchryver et al., 2008). Further, non-trained typical peers also initiated social interactions with students with ASD more frequently (Owen-DeSchryver et al. 2008). These data seem to suggest that addressing questions and curiosity about ASD for young students demystifies the disability, and makes students with ASD more approachable. (Gelston, 2004; Humphrey, 2008; Owen-Deschryver et al., 2008).

Students with ASD need a learning environment that accommodates their needs to adapt language, communication, and social interaction (Guldborg, 2010). Students with ASD, in particular, need experiences that can provide greater access to social activities and peer relationships (Renzaglia, Karvonen, Drasgow & Stoxen, 2003). However, the challenge in organizing peer-related interaction is the need for a naturalistic approach with the support of teacher intervention (Boyd, Conroy, Asmus, McKenney & Mancil, 2008). Boyd et al. (2008) sought to identify naturally occurring variables that promote social interaction between students with ASD and their peers. The observational study suggested that small group, child-directed activities with limited teacher engagement prompted the most social interaction (Boyd et al., 2008).

### **Inclusive Classroom Interventions**

The increased prevalence of ASD has placed significant demands on general education teachers (Low & Lee, 2011). Students with ASD require supports and services that are grounded in specialist knowledge and understanding of ASD (Guldborg, 2010). However, because ASD affects individuals differently, appropriate accommodations or

modifications can vary with each student, and in each classroom (Stichter et al., 2007). Consequently, students with ASD rarely benefit from a uniformly set curriculum (Olley, 1999). Furthermore, classroom adaptations more frequently focus on shaping particular patterns of behavior in students with ASD rather than on modifying content learning (Olley, 1999).

General education teachers do a disservice to students with ASD when they employ general strategies to accommodate academic, behavioral, and social needs (White et al., 2007). In order to promote achievement, educators must coordinate interventions to the unique academic profile of students (Whitby et al., 2009). For optimal learning to result, teachers must address several communication and behavioral challenges of students with ASD (Murray, Baker, Murray-Slutshy & Paris, 2009). This is of tremendous importance because these difficulties can easily overshadow true intellectual strengths (Jones et al., 2009). As a result, the management of ASD for children and their families rests on effective, comprehensive educational interventions (Ashwell, 2009; Doris, 2012).

Teachers of students with ASD must employ a variety of strategies to meet unique and challenging learner needs (Iovannone, Dunlap, Huber & Kincaid, 2003; Stichter et al., 2007; Whitby et al., 2009; White et al., 2007). Despite a growing increase in research focused on effective instructional practices for this student population, attempts to integrate these findings into a curriculum format that is readily accessible to schools have been limited (Iovannone et al., 2003). Iovannone et al. (2003) have identified core elements that are essential to an effective and comprehensive instructional program for students with ASD. These elements include: (1) individual supports and

services for students and families, (2) systematic instruction, (3) structured learning environments, (4) specialized curriculum content, (5) functional approaches to problem behaviors, and (6) parent involvement (Iovannone et al., 2003).

### **Individual Supports for Students and Parents**

Individualized support for learners with ASD can come from their school planning teams (Sonnenmeier, McSheehan & Jorgensen, 2005). Sonnenmeier et al. (2005) led a case study with an elementary student with ASD to assess the effectiveness of the overall instructional environment for the student. This study used a four phase planning model which assessed current practices, explored new techniques, documented student responses, and reviewed student progress (Sonnenmeier et al., 2005). The use of this four-phase planning model yielded student advantages in terms of individual supports: First, it prompted meaningful collaboration among each member of the student's support team (Sonnenmeier et al. 2005). Second, it clarified learning expectations, resulting in greater student engagement and performance (Sonnenmeier et al. 2005).

Likewise, when parents are taught effective strategies for teaching social-communication skills, students with ASD can make gains in language and interpersonal goals in daily activities and routines (Ingersoll & Dvortcsak, 2006). In a series of group and individual sessions, parents of children with ASD were instructed on developmental and naturalistic techniques for interacting with their children at home (Ingersoll & Dvortcsak, 2006). Pre- and post-quizzes used in this study indicated that parents increased their awareness of social-communication skill development, and felt valuable to their child's overall progress (Ingersoll & Dvortcsak, 2006).



## **Systematic Instruction**

Systematic instruction assists students with ASD because it provides a structured instructional plan which provides for more time on task and learned skills (Iovannone et al., 2003). O’Conner and Klein (2004) studied this model in relation to reading comprehension, typically an area of difficulty for students with ASD. The study provided step-by-step instruction of various reading comprehension strategies to students with ASD in inclusion classrooms (O’Conner & Klein, 2004). While some strategies proved more valuable than others, the study demonstrated the value of targeting meaningful skills and devising effective scaffolding for students to attain those skills (O’Conner & Klein, 2004).

Further, systematic instruction can help students with ASD whose true intellectual ability is shadowed by their academic achievement. In a comparison study of IQ and academic achievement, 73% of the student sample had at least one achievement level that was 14 standard score points or more lower than their IQ levels (Jones et al., 2009). Implications of this study suggest that students with ASD may fare better in the classroom when instruction is based on academic strengths and addresses learning needs methodically (Jones et al., 2009).

## **Structured Learning Environments**

Many parents, teachers, and administrators view structured learning environments as crucial to the success of students with ASD (Callahan, Henson, & Cowan, 2008). A structured environment showcases a clear pattern of routines which are comprehensible to both teachers and students (Shelton, 2012). In researching effective interventions for students with ASD, Callahan et al. (2008) found educators and caregivers supported

interventions that were based on maintaining a structured learning environment. In particular, teachers and parents deemed interventions with five critical elements as most effective: (1) individualized programming, (2) data collection, (3) the use of empirically-based strategies, (4) active collaboration, and (5) a focus on long-term outcomes.

Additionally, a structured environment can facilitate student engagement (Callahan et al., 2008). When students with ASD are engaged in learning, skill acquisition can improve (Iovannone et al., 2003). In fact, progress toward both academic and behavior goals relies heavily on student engagement (Blackwell & McLaughlin, 2005). Increased opportunities for students with ASD to participate and respond in the classroom can increase time on task, and decrease interruptions to the learning process (Blackwell & McLaughlin, 2005; Shelton, 2012). One example of a strategy used to increase student engagement is student response cards (Blackwell & McLaughlin, 2005). Response cards illustrate a predictable answer set that students use to respond to questions directed to the class as a whole (Blackwell & McLaughlin, 2005). Skibo, Mims, & Spooner (2011) found that when response cards were used to support the learning of students with ASD, the instructed skills were readily mastered and retained.

### **Specialized Curriculum Content**

Because ASD is a disorder with many social, behavioral, cognitive, and communicative challenges, specialized curricula could begin to address the learning needs of students with this disorder most appropriately (Olley, 1999). Browder et al. (2008) developed the Early Literacy Skills Builder (ELSB) to study literacy development in students with ASD (Browder, Ahlgrim-Dezell, Courtade, Gibbs & Flowers, 2008). The ELSB curriculum promotes phonemic awareness through scripted lessons, repetition

of skills, and direct instruction supported by visual referents. These features of the ELSB curriculum were considered ideal because many students with ASD benefit from the pairing of phonemic and visual reference during their literacy development (Browder et al., 2008). Findings indicated that the specialized curriculum helped students with developmental disabilities gain literacy skills (Browder et al., 2008). Furthermore, the unique course of study advanced the phonemic awareness of the students, as well as other foundational skills which promote early reading (Browder et al., 2008).

In traditional classrooms, teachers use verbal language to communicate information about content, rules, and routines (Carnahan, Musti-Rao, & Baily, 2009). However, this approach is ineffective for students with ASD who have difficulty processing complex verbal information (Carahan et al., 2009). To raise student engagement in students with ASD, it is necessary to design learning experiences with an awareness of communicative and cognitive needs (Carahan et al., 2009). Researchers Carnahan et al. (2009) found that interactive reading activities increase student interest and better engaged students with ASD than traditional read-aloud activities (Carnahan et al., 2009).

### **Functional Approaches to Problem Behaviors**

Students with ASD will often need behavioral supports to achieve success in inclusive classrooms (Macintosh & Dissanayake, 2006). Deficits in assertion, self-control, and cooperative behaviors can hinder the progress of students with ASD as well as distract peers (Macintosh & Dissanayake, 2006). Moreover, repetitive incidents of misbehavior can affect teacher motivation to work with students with ASD (Robertson, Chamberlain & Kasari, 2003). Such effects on teacher attitudes can have a profound

impact on teacher expectations of student performance (Berry, 2010; Ivey 2007; Park & Chitiyo, 2011;Robertson et al., 2003).

However, general education teachers can implement strategies that positively influence undesirable behaviors with minimal effort (Conroy, Asmus, Sellers, & Ladwig, 2005). Researchers, Conroy et al. (2005) conducted a study with a single male participant with a hand-flapping behavior that interfered with mathematics lessons. The study found that using visual cues helped to limit the number of stereotypic behaviors (hand-flapping) considerably (Conroy et al., 2005). Further, this technique was one that could be easily transferred to a paraprofessional within the classroom (Conroy et al., 2005). Training teachers and others who work with students with ASD to use effective tools that help manage distracting behaviors can have a dramatic effect on the success of these students within the classroom (Conroy et al., 2005).

Social Stories™ represent another option for the educator to use to address problem behaviors within the classroom (Chan & O'Reilly, 2008). In a study of two kindergarten students with ASD included in a regular education classroom, Chan and O'Reilly (2008) used Social Stories™ to help these students modify classroom behaviors, such as non-functional vocalizations and inappropriate social interactions. The researchers used a three-step intervention with each subject participant at each session: 1) reading the social story, 2) asking comprehension questions, and 3) role play (Chan & O'Reilly, 2008). Results showed an increase and maintenance of appropriate behaviors in both subjects (Chan & O'Reilly).

### **Parent Involvement**

While partnerships among teachers are a necessary element of the inclusive

classroom, it is important that schools do not overlook parental insight when building collaborations for students with ASD (Blane & Borden, 2008). Parents of children with ASD typically are intensely aware of their children's strengths and weaknesses, and use this insight to manage the daily challenges of the disability (Blane & Borden, 2008; Harte, 2009). Moreover, parental involvement greatly influences the extent of child progress (Levy, Ae-Hwa, & Olive, 2006). To determine which interventions held the most promise for young (ages 3-8) students with ASD, Levy et al. (2006) examined the empirical results of research on intervention strategies. Findings suggested that the most positive outcomes were connected to interventions that were significant in duration and included parental involvement.

Parents of children with ASD have a vested interest in their children (Harte, 2009). Using long-term goals to inform their decision-making, parents of children with ASD plan for their children to experience success in many settings and help them to function in the outside community (Harte, 2009). Similar to the classroom environment, parents of children with ASD focus on meeting needs, finding interest motivators, and organizing the environment prior to teaching individual skills (Harte, 2009).

In a research study of mothers of children with ASD, Harte (2009) found that parents can offer knowledge that is particular and specialized to their children (Harte, 2009). Harte (2009) used photovoice, a research method pairing participant-created photographs with interviews, to determine how children with ASD showed engagement with a task or activity in the home setting. Findings indicated that mothers used their specialized knowledge of their children to limit distracters and increase focus to task

(Harte, 2009). Such information could be valuable to teachers as they structure the classroom environment to increase student engagement (Harte, 2009).

Specialized home intervention programs for students with ASD have several benefits that school-based services simply cannot offer (Ozonoff & Cathcart, 1998). First, parent-led home therapy increases the number of hours of services for the child with ASD, with no additional economical cost to the family (Ozonoff & Cathcart, 1998). Second, because most parents are constants in the lives of their children, home therapy provides continuity of service and strategies (Ozonoff & Cathcart, 1998). Lastly, involving parents in home therapy increases their feelings of self-efficacy, allowing them to better advocate for the needs of their children (Ozonoff & Cathcart, 1998).

In a study of family-focused interventions, Ozonoff and Cathcart (1998) used TEACCH programming to examine the effectiveness of parent-led interventions in the development of young children with ASD. Children with ASD who received TEACCH therapy from their parents improved significantly more in functionality than the control group (Ozonoff & Cathcart, 1998). Implications of this study seem to suggest that parents can be trained to provide useful treatment strategies to their children with ASD (Ozonoff & Cathcart, 1998).

### **Teacher Preparation to Educate Students with ASD**

Changing perspectives of disability and instructional best practices have modified how special education is conceptualized, and as a result, how teacher preparation programs are organized (Brownwell et al. 2010; Taskin-Can, 2011). The *No Child Left Behind Act of 2001* has set rigorous standards and increased teacher accountability for the performance of students, including those with special learning needs (Brownwell et al.,

2010). In addition, the *Individuals with Disabilities Act* (IDEA) and its recurrent reauthorizations have provided students with disabilities increasing access to quality educational curricula and resources. (Cook & Rumrill, 2000; Obiakor, 2011; Winzer, 2009). Teaching students with disabilities is no longer the sole responsibility of the special education teacher, but instead, an assignment shared with general education teachers (Ashby, 2012; Busby et al. 2012; Gentry, 2011). Yet, especially for students with ASD, existing teacher education programs do not adequately train teachers to meet academic and behavioral needs (Busby et al. 2012; LeBlanc et al., 2009; Hemming & Woodcock, 2011; Scheuerman et al., 2003). Consequently, it is critical that educators increase their knowledge and understanding of ASD and gain access to supports and services that will promote success for students with the disorder (Guldberg, 2010; Leblanc et al., 2009).

### **Dual Certification Programs**

Dual certification programs are a proposed solution to gaps in training for educators. The purpose of a dual certification program is to prepare preservice educators to teach a diverse student population within an inclusive setting (Ashby, 2012). Collaboration among general and special education faculty provides beginning teachers with dual perspectives of their roles as inclusive educators (Ashby, 2012). Such partnerships expand the resource base of novice teachers, extending knowledge and skills (Brownell et al, 2012). Furthermore, integrated teacher preparation programs promote school wide equity and stress the importance of valuing the achievement of every student (Ashby, 2012).

In recent years, several states in the U.S. have begun to revise their teacher certification programs to prepare teachers to instruct diverse student populations more effectively (Brownell et al., 2012). In the state of Pennsylvania, for example, the Early Childhood Education degree currently requires 270 hours of special education course work and three credits of English Language Learning (ELL) preparation (Pennsylvania Department of Education, 2012). These changes, which became effective January 1, 2013, were designed to provide beginning teachers with a basic foundation of knowledge and skills to impact the achievement of students with special learning needs positively (Pennsylvania Department of Education, 2012).

### **Inadequacies in Teacher Knowledge and Skills**

Unfortunately, even integrated teacher preparation programs fail to address the challenges of teaching students with ASD adequately (Busby et al., 2003). The complexity of ASD is compounded by its diverse presentation within individuals (Scheuermann et al., 2003; Whitby et al., 2009). Furthermore, the lack of professional standards in autism preparation creates wide variance in teacher programming (Scheuermann et al., 2003). Inadequacies in teacher training are further compounded when coursework is limited in scope and depth and in specialized knowledge about ASD (Busby et al., 2012; Scheuermann et al., 2003). The results are often universal classroom interventions that are not successful for the vast majority of students (Scheuermann et al., 2003).

Additionally, the teaching philosophies of novice teachers often lack sophistication (Peterson et al., 2011; Shaw et al., 2007). Although well-intended, beginning educators oversimplify career expectations (Downey, 2008). When teaching



beliefs are too idealistic, daily classroom experiences overshadow enthusiasm and highlight ineffectiveness (Pendergast, 2011; Taskin-Can, 2011). In a qualitative research study of ASD-specific implementation strategies, Stahmer, Collings, and Palinkas (2005) found that although the educational service providers expressed a desire to use effective techniques, they failed to investigate the research base for the selected student programming. Bain, Brown and Jordan (2009) reported very similar results with 351 teaching candidates who endorsed teaching interventions for students with ASD without evidence-based research. These data imply the need for critical evaluation skills to better prepare beginning teachers to analyze the effectiveness of instructional practices for students with ASD (Bain et al., 2009; Stahmer et al., 2005).

Similarly, field experiences can play an important role in shaping teacher beliefs about students with ASD (Busby et al., 2012). Interacting with students with ASD prior to beginning their teaching careers offers beginning educators the opportunity to integrate new skills and abilities into their existing teacher philosophies and to reflect on attitudes and ideals (Taskin-Can, 2011). Further, contact with many different students with ASD during the teacher preparation process broadens the understanding of the exceptionality and the complexity of its manifestation (Leblanc et al., 2009). Such insight is critical to student success as treatment plans often center on specific student needs (Autism Spectrum Disorders, 2012).

### **Developmental Maturity of Traditional Preservice Educators**

Many preservice teachers begin their teacher preparation programs at a very volatile time in their development. Late adolescences grapple with existential concerns that can promote stress and impact decision-making and processing (Bermans, Weems,

and Stickle, 2006; Elkind, 1998). In addition, the student culture inherent in most university settings can challenge adolescent beliefs and values, influencing the way youth interpret content information (Oda, 2007; Papalia et al., 2009). Such an impact can be particularly critical for novice educators because professional growth is founded in frequent analysis and revision of pedagogical beliefs (Downey, 2008; Taskin-Can, 2011).

Adolescent egocentrism also can play an important role in shaping career development (Elkind, 1967). Adolescents can have a very difficult time isolating differences between their own thinking and those of others (Elkind, 1967). In fact, Elkind (1967) describes the self-conscious feelings of older teenagers as an “imaginary audience.” Preoccupations with behavior and appearance give adolescents the false notion that others share their personal obsessions (Elkind, 1967). Furthermore, a sense of invulnerability makes young adults susceptible to high risk behaviors (Elkind, 1967). This egocentrism in adolescence can be detrimental in career development because it can prevent students from considering perspectives beyond their own established views (Elkind, 1998).

Additionally, identity formation in youth influences adolescent viewpoints profoundly (Berman et al., 2006). As adolescents begin to form a sense of self, they also define life direction and purpose (Berman et al., 2006). Youth envision their future in adolescence and make reasonable predictions of what is required to have a good life and to be a good person (Bronk, 2008). In a series of interviews with 25 adolescents, Bronk (2008) found that the youth defined a good life and being a good person with idealistic objectives, such as maintaining supportive and caring relationships, helping others, and valuing the needs of others.

However, many of these idealistic beliefs do not translate into action and can lead to misrepresentations of society (Elkind, 1998). For novice teachers, this sense of idealism may create an unrealistic perspective of the educational profession (O'Sullivan, MacPhail, & Tannehill, 2009). In a study of 68 first-year education undergraduates and 57 student teachers, Jung (2007) found that students had much more favorable attitudes toward inclusion prior to student teaching, indicating discord between their expectations and the realities of working in inclusive classrooms. Elkind (1998) asserts that such dissonance between the ideal world and actuality creates a sense of strife, and youth often blame adults for this conflict (Elkind, 1998). Consequently, adolescents view their competence as superior (Elkind, 1998). Such attitudes can affect teacher training significantly because collaboration with educators with unique experience and knowledge is crucial to effective inclusion practices (Loiacono & Valenti, 2010; Chandler-Olcott & Kluth, 2009).

### **Characteristics of Novice and Experienced Educators**

While developmental age can play a role in professional growth, other significant differences exist between novice and experienced educators. Reflection that motivates the analysis of beliefs and assumptions about learning is the foundation of effective teaching (Grierson, 2010). As educators revise instructional beliefs they can effect change not only on their own attitudes, but also on student progress and achievement (Grierson, 2010). This type of conceptual change can only result from frequent opportunities to test knowledge and skills in authentic situational experiences (Dryfus & Dryfus, 1986). Dryfus and Dryfus (1986) assert that these situational experiences are instrumental in guiding individuals through five stages of skills from novice to expert.

These five stages include: (1) novice, (2) advanced beginner, (3) competence, (4) proficiency, and (5) expert (Dryfus & Dryfus, 1986).

As novices, teachers rely on their training to determine rules for instructional practices and to judge their success (Dryfus & Dryfus, 1986). Although many preservice teachers will enter the field with basic teaching abilities, their teaching repertoires are far less defined, especially in respect to complex skills (Han, Housner, & Wayda, 2011). Accordingly, novice teachers most often implement basic instructional methods with proven success (Dryfus & Dryfus, 1986). Furthermore, how novice teachers perceive the organizational environment can limit self-confidence and professional development (Gavis & Friedman, 2010). The stress of adjusting to a new career, building a support system, and acclimating to the school culture can hinder the transfer of learning for novice educators (Scott, 2003).

Yet, when teachers are advanced beginners, they gather more experiences that help them to recognize and address gaps in knowledge and skills (Dryfus & Dryfus, 1986). Because it is situation-specific, teacher training can never be comprehensive (Kyoung-AeKim & Roth, 2011). Until they are placed in an unfamiliar situation, novice educators may be unaware of gaps in understanding and skills (Kyoung-AeKim & Roth, 2011). To remedy these feelings of incompetency, novice teachers use more experienced teachers as models of appropriate teacher behavior patterns, emulating what they believe are logical teacher responses (Kyoung-AeKim & Roth, 2011). When these methods prove unsuccessful, novice teachers can become confused and frustrated (Dryfus & Dryfus, 1986; Kyoung-AeKim & Roth, 2011).

Similarly, teachers in the competence stage can become overwhelmed with increasing responsibilities, as teachers must begin to make decisions to improve the learning environment and their own effectiveness (Dryfus & Dryfus, 1986). Beginning teachers struggle to understand school policies and to use assets to promote student learning (Gavish & Friedman, 2010), making it difficult for them to plan effective learning strategies for students (Tobin, 2008). Novice instruction of students with special needs, in particular, lacks purposeful planning (Dee, 2011). Furthermore, novice teachers are likely to use fixed, rather than flexible grouping to differentiate instruction for special populations of students (Dee, 2011; Tobin, 2008).

As teachers become more comfortable within their roles in the proficiency stage, they begin to recognize the similarities among daily teaching experiences and implement teaching strategies appropriately (Dryfus & Dryfus, 1986). Fogarty et al. (1983) found that the greatest difference between novice and experienced teachers focused on discrepancies between their instructional practices. While beginning teachers tended to ignore student performance history and prior knowledge, expert teachers were more aware of pedagogical principles and used more complex teaching strategies to meet student goals (Fogarty et al., 1983). Similarly, Ni and Li (2009) found that expert teachers were more likely than their novice counterparts to give students greater opportunities to lead their own learning process.

Finally, at the expert stage, teachers become proficient at problem-solving and apply appropriate techniques without awareness of the process (Dryfus & Dryfus, 1986). Expertise is characterized by a well-organized pedagogical understanding which informs decision-making in response to diverse cues within the classroom (Fogarty et al., 1983).

Expert teachers have developed a clear perception of the school culture, and use that knowledge to seek resources to improve their performance (Gavish & Friedman, 2010). Consequently, situational classroom experiences impact the skill set of expert educators, shaping instructional practice and student learning positively (Dryfus & Dryfus, 1986).

### **Teaching Repertoires and Intentional Teaching**

Experienced educators may also have more extensive teaching repertoires and reflective practice. Teaching repertoires are the purposeful organization of instructional techniques and strategies (Garrett, 2007). As teachers become more familiar with instructional routines, they are more comfortable experimenting with innovative practices (Gersten, et al., 2000; Scott, 2003). Consequently, the teacher repertoires of more experienced teachers are often more developed (Garrett, 2007; Gersten et al., 2000; Scott, 2003). Further, more seasoned teachers learn to recognize that each teaching context requires specific instructional techniques (Coffey & Gibbs, 2002). This realization comes from the process of critical reflection on the interaction between comprehensive strategies and specific student outcomes (Garrett, 2007; Coffey & Gibbs, 2002).

An extensive collection of researched-based practices are crucial to a successful inclusion program (Gersten et al., 2000). Using a wide repertoire of methods displays sensitivity to learning differences among students and builds teacher effectiveness (Coffey & Gibbs; Scott, 2003). In particular, varied models of teaching provide students with greater opportunities to take responsibility for their learning (Scott, 2003). In a study of a teacher preparation program, Scott (2003) found that teachers who successfully used two or more complex strategies in classroom settings had high levels of self-efficacy, established self-reflection skills, and steady levels of emotional stability. Such

research results suggest that preservice teachers could benefit from teacher preparation experiences that provide opportunities for innovative instructional strategies to be practiced and coached (Garrett, 2007).

Quality teachers need not only a repertoire of instructional strategies, but also must possess the insight to know when to use a particular technique to accommodate different student needs (Epstein, 2007). Because of their multiple learning challenges, students with ASD require teachers be intentional in their teaching (Scheuermann et al., 2003). Such thoughtful and purposeful instruction uses planned outcomes to inform instruction and transform student thinking (Epstein, 2007). Intentional teaching uses everyday experiences, social interaction, and the learning environment to promote student understanding (Fleer & Hoban, 2012). Developing intentionality in teaching is an ongoing process for beginning teachers and requires reflective practice (Putman, Smith, & Cassidy, 2009).

### **Challenges of Differentiated Instruction**

Differentiated instruction is one example of intentional teaching techniques. Combining practical knowledge and theory, differentiated instruction highlights the complexities of both teaching and learning (Goodnough, 2009). When implemented properly, differentiated instruction provides challenging curricula to all learners by offering varying levels of teacher support, assignment complexity, task pacing, and/or paths of learning (Tomlinson, 2000). By adjusting instruction appropriately, differentiated instruction provides many opportunities for students to process content effectively (Pham, 2012). Because of their diverse skill sets and cognitive abilities,

students with special needs can benefit from differentiated instruction especially (Dee, 2011).

Nonetheless, differentiated instruction does pose challenges for novice educators (Dee, 2011; Goodnough, 2009). In a classroom-based action research study, Goodnough (2009) used a series of interviews and teacher journal entries to identify the challenges preservice teachers encounter when applying differentiation instruction to science lessons. While the 32 preservice educators acknowledged the value of diverse instructional practices, the novice teachers recognized several challenges in practicing differentiated instruction, including time restraints in planning and implementation, high levels of teacher effort, and wide variance in student assignments (Goodnough, 2009). In particular, many preservice teachers reported feeling overwhelmed by the complex integration of aspects of curriculum, instruction, assessment, and learning inherent in the differentiated instruction process (Goodnough, 2009).

Furthermore, effective use of differentiation instruction depends on a wide base of instructional knowledge and skills as well as highly developed reflective practice (Goodnough, 2009). Successful differentiated instruction dictates a focused understanding of individual student learning goals with respect to curriculum standards (Tomlinson, 2008). Accordingly, it is vital that educators are highly aware of student strengths and weaknesses (Tomlinson, 2008). Dee (2011), however, found preservice teachers have an underdeveloped understanding of the needs of students with disabilities. In a review of preservice educators' lesson plans and work samples of their students, Dee (2011) reported that preservice educators relied heavily on special education teachers to adjust curricular goals, and failed to implement differentiated instructional methods with



fidelity in the classroom. Further, preservice teacher reflections most often focused on teacher behaviors rather than student understanding (Dee, 2011).

### **Expectancy Theory**

Teacher self-efficacy has its roots in expectancy theory. Expectancy theory suggests that conscious expectation rather than response to stimuli often rules human behavior (Mohrman & Lawler, 1996; Tolman & Postman, 1954). Tolman used the term “cognitive map” to describe individual perception of the external environment (Sahakian, 1976). Using the cognitive map, individuals secure cues that help to shape their expectancies about permanent and conditional elements of the world around them (Sahakian, 1976). The basis of the expectation is that selected behaviors will ultimately lead to the desired goal or outcome (Tolman & Postman, 1954). However, when expectations are not sufficiently met, performance declines significantly (Tolman & Postman, 1976).

Motivation to exert effort to a task is the function of two expectations along with the value an individual assigns to the outcomes of achieving a desired goal (Mohrman & Lawler, 1996). Individuals must believe that their efforts will deliver success and that such achievement will afford them personal gain (Mohrman & Lawler, 1996). Because personal needs differ, achievement values are distinct to individuals (Mohrman & Lawler, 1996). Furthermore, work tasks will most likely elicit both positive and negative outcomes (Mohrman & Lawler, 1996). Motivation ensues when individuals are able to find a balance among multiple outcomes (Mohrman & Lawler, 1996).

According to expectancy theory, positive and negative values are interwoven with expected intrinsic and extrinsic outcomes which hold significance for the individual

(Mohrman & Lawler, 1996). For instance, teachers may expect to feel a sense of fulfillment from successfully implementing strategies that help students with ASD progress, yet they also recognize the loss of personal time and added work responsibilities. Motivation to complete a task is a combination of expectations and the value assigned to expected outcomes (Mohrman & Lawler, 1996). From an educational perspective, expectancy theory suggests that when teachers believe that they can inspire student learning and expect students to achieve, teachers will engage in efforts to help students reach their potential (Finnigan, 2012; Mohrman & Lawler, 1996).

Many influences can shape expectancies (Mohrman & Lawler, 1996). Because previous outcomes of behavior help form expectancies, past experiences are tremendously significant (Mohrman & Lawler, 1996). If teachers implement inclusion goals with high personal sacrifices and little reward, they learn to expect few positive outcomes for this behavior. Additionally, the policies and structure of the organization can influence expectancies (Mohrman & Lawler, 1996). Teachers who feel supported through resources, leadership, and school policies maintain more positive performance expectations (Mohrman & Lawyer, 1996). However, teachers must believe students are capable and willing to learn in order to maintain the expectancy that their efforts will affect student achievement (Ivey, 2007; Mohrman & Lawler, 1996).

Nevertheless, instruction is paramount to student progress, and teacher qualities can influence effectiveness. In a survey of 622 teachers in schools under accountability sanctions, Finnigan (2012) noted teacher characteristics that can affect teacher expectancy. First, novice teachers had higher levels of expectancy than their more experienced peers (Finnigan, 2012). These results are supported by research that

indicates that novice teachers enter the profession with a sense of idealism that may create an unrealistic perspective of a career in education (O'Sullivan et al., 2009).

Secondly, teachers with advanced education also maintained higher expectancy levels (Finnigan, 2012). These data seem reasonable because teacher knowledge and skills can inform teacher expectations (Park & Chityo, 2011). The following segment will discuss how expectancy gives rise to teacher self-efficacy.

### **Theoretical Framework: Self-Efficacy**

Bandura (1982, 1997) defines self-efficacy as the extent to which individuals believe they are able to complete a task successfully. From an educational perspective, student self-efficacy plays an important role in determining achievement (Bandura, 1997); however, teacher self-efficacy is strongly related to effective instruction and innovative methods (Bandura, 1997; Tschannen-Moran & Barr, 2004; Tschannen-Moran & Woolfolk Hoy, 2001). Teachers who maintain high levels of self-efficacy devote more classroom time to academic endeavors, guide students with learning challenges, praise student achievement, and communicate high expectations for student performance (Bandura, 1997; Gibson & Dembo, 1984; Pendergast et al. 2011; Tschannen-Moran & Barr, 2004; Tschannen-Moran & Woolfolk Hoy, 2001). Conversely, teachers with lower levels of perceived self-efficacy are less likely to foster cognitive development in their students (Bandura, 1997; Gibson & Dembo, 1984; Pendergast et al., 2011; Tschannen-Moran & Barr, 2004; Tschannen-Moran & Woolfolk Hoy, 2001).

In his research, Bandura (1997) recognized two elements of self-efficacy: personal self-efficacy and outcome expectancy. Personal self-efficacy is the belief that one has the knowledge and skills to plan successfully a sequence of behaviors to address

situational occurrences, whereas outcome expectancy speculates the consequences of such behaviors (Bandura, 1997). From an educational standpoint, Bandura (1997) referred to personal self-efficacy as Personal Teacher Efficacy (PTE) and outcome expectancy as General Teaching Efficacy (GTE). When teachers have a high level of PTE, they are more willing to expend effort to attain goals and persist longer at tasks (Bandura, 1982; Bandura, 1997). GTE takes a more global perspective of teaching, viewing teachers as a collective element (Bandura, 1997). Teachers with low levels of GTE assign blame to student motivation and other external factors when class performance is poor (Bandura, 1997).

### **Sources of Self-Efficacy**

Sources of self-efficacy can negatively or positively affect teacher effectiveness (Bandura, 1997). When self-efficacy is unrealistically high, preparatory efforts for instruction may be insufficient, but resilience in response to failure is present (Bandura, 1982). Conversely, low self-efficacy avoids disappointment, but may also be the source of high levels of stress which divert attention from challenges (Bandura 1982; Ruble, Usher, & McGrew, 2011; Schwarzer & Hallum, 2008). Because acting on misjudgments of self-efficacy can lead to unfavorable consequences, it is important to give some consideration to the development of self-efficacy in teachers (Bandura, 1982). Self-appraisal of capabilities is rooted in thought patterns and emotional responses which determine four sources of self-efficacy: (1) mastery experience, (2) vicarious experience, (3) social persuasions, and (4) physiological/emotional states (Bandura, 1997). The following sections discuss each of these influences as they relate to teacher behaviors.

## **Mastery Experience as a Source of Teacher Self-Efficacy**

Mastery experience refers to the manner in which individuals interpret previous performances (Bandura, 1997; Ruble et al., 2011; Tschannen-Moran & Barr, 2004).

Bandura hypothesized that the manner in which individuals drew meaning from past behaviors would accurately predict self-efficacy (Bandura, 1997). According to this hypothesis, teachers who experienced success with a struggling student would interpret their behaviors positively, and would maintain higher levels of self-efficacy (Bandura, 1997; Ruble et al., 2011; Lastrapes & Negishi, 2012). In contrast, teachers with poorer classroom performance would maintain lower levels of self-efficacy (Bandura, 1997; Ruble et al., 2003).

Research has shown that teacher preparation, especially field experiences, can strongly influence mastery experience (Cantrell, Young, & Moore, 2003; Lastrapes & Negishi, 2012; Leblanc et al., 2009; Lee et al., 2011). In a study of 46 preservice educators, Lastrapes & Negishi (2012) surveyed teachers before and after diversity training and mandatory field experiences with cultural diversity students. Preservice teachers reported that successful interactions with students as well as guidance from effective cooperating teachers promoted their sense of efficacy (Lastrapes & Negishi, 2012). Implications of this research suggest frequent and successful interaction with diverse groups of students can help shape the belief systems of novice teachers (Lastrapes & Negishi, 2012).

Because successful application of knowledge and skills can promote favorable interpretations of efforts, teacher education and skill training can impact mastery experience (Cantrell et al., 2003). Consequently, well-prepared lessons paired with

positive instructional experiences can affect teacher self-efficacy (Cantrell et al. 2003). Further, acquiring content knowledge helps to generate feelings of preparedness, promoting greater self-efficacy (Swackhamer, Koellere, Basile, Kimbrough, 2009). Research with middle school teachers has suggested that ongoing training and professional development raises teacher self-efficacy (Swackhamer et al., 2009). In a study of 95 middle school teachers, Swackhamer et al. (2009) found teachers who had completed four or more content courses in math or science diversified their instructional strategies, and increased their outcome efficacy.

### **Vicarious Experience as a Source of Teacher Self-Efficacy**

The experiences collected from observations of the successes and failures of others create vicarious experiences on which to build self-efficacy (Bandura, 1997; Ruble et al. 2003). To determine their own effectiveness, teachers may compare their competencies with the capabilities of their colleagues (Bandura, 1997; Ruble et al., 2003; Billingsley, Carson, & Klien, 2004). Given the interconnectedness of personal and observed experiences, vicarious experiences may also influence collective teacher efficacy (Bandura, 1997). Collective teacher efficacy (CTE) refers to the school-wide perception that teachers can affect change in students, rivaling the influences of home and community (Bandura, 1997; Tschannen-Moran & Barr, 2004).

Schools are highly social environments which facilitate interaction among several participants integral to school achievement (Tschannen-Moran & Barr, 2004). Collaboration among staff builds teacher self-efficacy as beliefs and social norms are developed (Bandura, 1997). Sharing successful techniques, student work samples, and instructional techniques provide opportunities for vicarious experiences in school

(Tschannen-Moran & Barr, 2004). These experiences create a collective impact on both teachers and schools, generating both individual and shared self-efficacy (Tschannen-Moran & Barr, 2004). Furthermore, a positive and significant relationship has been noted between CTE and student achievement (Tschannen-Moran-Barr, 2004).

Teacher induction programs are another source of vicarious experience for teachers (Billingsley et al., 2004; Ruble et al., 2003). Designed to reduce teacher attrition and improve instructional effectiveness, teacher induction systems provide responsive support during the initial years of teaching (Billingsley et al., 2003). Such guidance is critical for novice teachers who are shaping their philosophy of teaching and pedagogical views (Taskin-Can, 2011). Induction systems also provide proficient, skilled models for inexperienced teachers to imitate when addressing challenges in the classroom (Ruble et al. 2003). Research studying the impact of induction support on teacher self-efficacy found that special education teachers with higher levels of induction support described greater job manageability and success (Billingsley et al., 2003).

### **Social Persuasions as a Source of Teacher Self-Efficacy**

How individuals perceive messages from others constitutes social persuasion sources of self-efficacy (Bandura, 1997; Friedman, 2003; Ruble et al, 2003). Throughout their professional careers, educators receive feedback from a number of sources. The positive evaluations teachers receive from parents, students, colleagues, and administration work to enhance self-efficacy whereas disapproval undermines confidence (Bandura, 1997; Ruble et al., 2003). Such self-efficacy generated from social persuasion tends to make teachers more resilient in their teaching and more focused in attempts to help students reach learning potential (Pendergast et al. 2011).

Similarly, perceived support from the school community can affect teacher self-efficacy (Bandura, 1997; Elliott, Issacs, & Chugani, 2010; Friedman, 2003; Ruble et al., 2003; Stipek, 2012; Ware & Kitsantas, 2007). A nurturing environment for beginning teachers not only builds teacher confidence, but also job satisfaction (Elliott et al., 2010). Recent research on school leadership has indicated that perceived support from principals was positively associated with teacher levels of self-efficacy (Stipek, 2012; Ware & Kitsantas, 2007). Moreover, administrative recognition for efforts within the classroom created greater job commitment (Ware & Kitsantas, 2007). The ability of the teacher to assume the role of a functioning member of the school community is important to self-efficacy as well (Friedman, 2003). Receiving assistance and support from colleagues builds interpersonal and organizational efficacy, generating teacher confidence and student achievement (Friedman, 2003).

### **Physiological/Emotional States as a Source of Teacher Self-Efficacy**

Emotional responses to performance also impact teacher self-efficacy (Bandura, 1997; Ruble, 2003). When job responsibilities overwhelm educators, classroom effectiveness is negatively impacted (Bandura, 1997; Billingsley et al., 2004; Friedman, 2003; Ruble et al. 2003; Schwarzer & Hallum, 2008). An abundance of anxiety can persuade teachers that they lack the competence to help students achieve (Bandura, 1997; Friedman, 2003; Ruble, 2003). In contrast, teachers who have confidence in their abilities report lower stress levels and hold a greater commitment to students (Schwarzer & Hallum, 2008).

Several factors can influence the physiological/emotional state of teachers (Bandura, 1997; Friedman, 2003; Ruble et. al, 2003; Lee et al., 2011). The teaching



environment, in particular, can lower teacher self-efficacy (Friedman, 2003; Lee et al, 2011). Lee et al. (2011) found that unresponsive support from the school district, insufficient resources, unmanageable class sizes, and heavy workloads can build devastating stress levels in teachers. These challenges create a lack of control for teachers that negatively affect their view of the school culture, ultimately affecting their self-efficacy (Tschamann-Moran & Hoy, 2007). In contrast, research from Schwarzer & Hallum (2008) indicated that teachers with confidence in their abilities had low stress levels, useful coping resources, and high self-efficacy.

### **Teacher Self-Efficacy and Inclusion**

Amidst diverse school populations, teachers must be able to assess their abilities to address special learning needs accurately (Sari, Celikoz, Secer, 2009). Students with disabilities can exhibit challenging behaviors and learning difficulties in the classroom, and teachers with high levels of self-efficacy are more resilient when widely-accepted interventions prove unsuccessful (Billingsley et al., 2004; Gao & Mager, 2011). Consequently, building and maintaining high levels of teacher self-efficacy are critically important for inclusion teachers (Billingsley et al., 2004; Gao & Mager, 2011; Sari et al. 2009).

Teacher training is highly influential on self-efficacy (Leyser, Zeiger, & Romi, 2011; Shaw, Dvorak, & Bates, 2007). As novice teachers prepare to work with students with special needs, they adjust beliefs and understanding about learning (Pendergast et al., 2011; Shaw et al., 2007). Support and guidance is critical for novice teachers who do not yet have a diverse teaching skill set (Billingsley et al., 2004). Research has shown that self-confidence in teaching skills is highly related to perceived teacher efficacy,

making a well-designed teacher education program integral to the effectiveness of future inclusion teachers (Lee et al., 2011). In a study of 64 teachers of students with ASD, Jennet, Harris, & Mesibov (2003) found that training in specific autism-specific interventions developed pedagogical self-efficacy. The implications of this research seem to state that an understanding and commitment to a theoretical approach inspires feelings of effectiveness in inclusion educators (Jennett et al., 2003).

Authentic experience with students with disabilities in classroom settings is another significant force which shapes teacher self-efficacy (Busby et al.; 2012; Leyser et al., 2011). Mastery experience is grounded in prior behaviors and learning opportunities (Bandura, 1997; Ruble et al., 2003). Accordingly, inclusion teachers must have experiences with diverse students to build and maintain high levels of self-efficacy (Leyser et al., 2011). In a large scale international study of 992 preservice teachers, Leyser et al. (2011) found that teachers with experience working with students with special needs had greater self-efficacy than preservice teachers who had no contact with students with disabilities.

Finally, a definite relationship exists between teacher attitudes and self-efficacy. When teachers are more confident in their abilities they appear to maintain more positive attitudes toward the inclusion process (Gao & Mager, 2011; Sari et al., 2009). Teachers with positive teacher self-efficacy also willingly include children with a wide range of disabilities in the general classroom and maintain strong professional and personal views on diversity (Gao & Mager, 2011). In a study investigating the perceptions of self-efficacy and the attitudes of preservice teachers toward inclusive education, Sari et al. (2009) noted a positive relationship between teacher self-efficacy and attitudes toward

inclusion. Specifically, Sari et al (2009) theorized that as self-efficacy increases, attitudes toward inclusion positively change. In the proceeding section, teacher attitude development and its impact on student learning will be discussed.

### **Teacher Attitudes, Values, and Beliefs toward Inclusion**

From a psychological perspective, attitudes are predisposed expressions of approval or disapproval directed at a particular object or person (Eagly & Chaiken, 2007). Likewise, beliefs maintain validity of certain principles based on specific prior contingencies (Hammond, 2010). Values, however, represent beliefs so internalized that they drive behavior (Oyserman, 2002). Personal experiences, daily routines, and past events can influence the development and permanence of attitudes and beliefs significantly (Eagly & Chaiken, 2007). Consequently, interactions with others can shape attitudes, beliefs, and values as much as formal instruction (Garriott, Miller, & Synder, 2003).

Teacher attitudes have been defined in terms of bias toward students based on teacher- student relationships (Willis & Brophy, 1974; Silberman, 1969). Both personal characteristics of students and their interactions with teachers can affect teacher attitudes (Willis & Brophy, 1974). Further, seminal research on teacher attitudes has recognized the importance of teacher perceptions of student behaviors as significant in attitude development (Good & Brophy, 1972; Silberman, 1969; Willis & Brophy, 1974). In particular, personal rapport with the teacher and conformity to school rules influence teacher attitudes toward individual students (Willis & Brophy, 1974).

Examining the attitudes that inform teaching practices can provide insight that can predict student achievement (Berry, 2006). Because teachers are instrumental in the

inclusion process, their attitudes toward students with special needs are especially critical (Park & Chityo, 2009). Teachers with positive attitudes toward students with disabilities are often more effective at meeting the needs of these students and facilitating inclusion programming (Sze, 2009). As such, a sense of commitment powered by positive attitudes is imperative to teacher effectiveness with students with special needs (Berry, 2010).

As more students with disabilities are assigned to general education classrooms, teacher instruction must accommodate the different attributes of a diverse group of learners (Berry, 2010; Combs, Elliott, & Whipple, 2010). In particular, the rising prevalence of students with ASD has heightened concern about teacher attitudes and beliefs toward this growing population of students (Park & Chitiyo, 2009). If inclusive classrooms are to be effective, teachers must envision inclusion as both necessary and valuable (Berry, 2010; Diken, 2006). Teacher attitudes toward students with autism can profoundly impact student progress by influencing teacher expectations for student performance (Park & Chitiyo, 2011). Further, such expectations can play an important role in developing and maintaining student confidence (Park & Chitiyo, 2011).

Several factors can shape the attitudes preservice teachers hold for the inclusion process (Hemming & Woodcock, 2011; Woodcock, Hemmings, & Kay, 2012). In a recent study of the attitudes of preservice teachers, Woodcock et al. (2012) reported that preservice educators had many concerns about teaching in inclusive classrooms, including availability of resources, acceptance by peers, increased work responsibilities, and adherence to academic standards. These results are consistent with the findings of Ahsan, Sharma, and Deppeler (2012) whose survey data of preservice teacher attitudes

toward inclusion indicated moderate apprehension of increased workloads and of inequity for students without disabilities.

Moreover, teacher personal beliefs and values can deeply affect teacher attitudes toward inclusion (Brandes & Crowson, 2009). For instance, preservice educators with more conservative views maintain more negative attitudes toward students with disabilities and are less supportive of inclusion practices (Brandes & Crowson, 2009). Brandes and Crowson (2009) assert that conservative preservice teachers can view inclusion as a menace to school systems, inhibiting natural competition among students and depleting resources. Converting such strongly held views mandates successful interaction with diverse groups of students that prompt novice teachers to analyze the impact of their beliefs on student performance (Brandes & Crowson, 2009; Lastrapes & Negishi, 2012).

Yet, field experiences in inclusive classrooms alone do not always create sufficient motivation to shape preservice teacher attitudes positively (Diken, 2006; Hemming & Woodcock, 2011). Hemming and Woodcock surveyed preservice teachers both before and after inclusion training and field experiences with students with identified special needs. Results indicated that while the knowledge base of the teachers increased, 70% of the novice educators still considered themselves not prepared or only partial prepared to teach in inclusive classrooms after training and teaching experiences (Hemming & Woodcock, 2011). Nonetheless, the preservice educators did acknowledge the importance of collegial support, cooperation, and acceptance from their experiences in inclusive classrooms (Hemming & Woodcock, 2011).

An absence of teaching experiences with diverse students can promote an unrealistic portrayal of inclusive classrooms (Diken, 2006). Diken (2006) found that preservice teachers training to work with students with intellectual disabilities graduate from their teaching preparation programs with generally positive attitudes toward these students. Yet, once beginning their teaching career and experiencing the challenges of working with students with disabilities, the attitudes of the novice teachers were more negative (Diken, 2006). Implications of this study would suggest that preservice teachers could benefit from direct instruction on how to address concerns in inclusive classrooms as well as observations of experienced teachers who have implemented successful instructional practices with students with special needs (Woodcock et al., 2012).

In many classroom situations, attitudes predict behavior (Berry, 2010). Combs et al. (2010) found significant differences between the instructional practices of elementary physical education teachers who held negative and positive attitudes toward inclusion. Teachers with positive attitudes toward inclusion used an extensive teaching repertoire to help students meet multiple learning objectives and improve motor development (Combs et al., 2010). Conversely, the teachers with negative attitudes toward inclusion did not make efforts to adapt lessons to meet the physical needs of the students (Combs et al., 2010). Instead, these teachers centered their lessons on occupying student attention and avoiding student behavioral triggers (Combs et al., 2010).

For educators of students with special needs, in particular, attitudes can determine effectiveness (Park & Chitiyo, 2009; Silverman, 2007). When teachers view inclusion as a burden, they may act in ways that hinder student progress (Berry, 2010). Such teacher beliefs are undesirable because they inhibit an accessible curriculum for all students (Park

& Chitiyo, 2009). In order to study how teacher attitudes towards students with ASD are formed, Park and Chityo (2009) designed a comprehensive conceptual framework. Their research identified three major elements that persist in the development of teacher attitudes toward students with ASD: (1) antecedents to teacher attitudes, (2) maintenance of multiple attitude levels, and (3) influence of attitude levels on individual and program goals.

### **Antecedents to Teacher Attitudes and Teacher Attitude Levels**

Antecedents of teacher attitudes towards students with ASD can include personal and social components (Park & Chitiyo, 2009). Using the Autism Attitude Scale for Teachers in a quantitative research study, Park and Chitiyo (2011) uncovered a relationship between teacher attitudes toward students with ASD and teacher age and gender. Findings suggested that females viewed students with ASD more positively than male teachers, and teachers younger than 56 tended to have more positive attitudes than their older counterparts (Park & Chitiyo, 2011). For preservice teachers, especially, cultural and social values may also affect attitudes toward inclusion (Naggar Gaad, 2004). In interviews with preservice educators, Naggar Gaad (2004) found that preservice educators were concerned with how peers and others viewed them as teachers. Negative opinions of career selection from members of their social network undermined the commitment and effort of preservice special education teachers (Naggar Gaad, 2004).

Additionally, classroom experience may also play a role in attitude formation, although results are more varied (Cook, 2004; Park, Chitiyo, & Choi, 2010). Cook (2004) found that teachers with greater classroom experience and advanced instructional skills were less likely to reject students with special needs. Preservice teachers, however,

depend on their teacher preparation to guide their instructional practices because their classroom experience is limited (Burke & Sutherland, 2004). Alternatively, Park et al. (2010) identified no difference between the attitudes of preservice and inservice teachers toward students with ASD. Based on these data, it is inconclusive whether teaching experiences with students with ASD during teacher training influence attitude formation (Park et al., 2010). Nevertheless, contact and exposure to students with ASD may serve as a foundation to positive teaching attitudes (Park et al. 2010).

Frequent opportunities to engage with students with ASD may also explain differences in attitudes among special and general education teachers (Park et al., 2010). Although both general and special education teachers can be overwhelmed with the possibilities and challenges of inclusion (Lopes, Sil, Rutherford, & Quinn, 2004), special education teachers have more positive attitudes toward students with ASD in comparison to general education teachers (Avramidis, Bayliss, & Burden, 2000; Park et al., 2010). Garriott et al. (2003) attribute some of the difference in attitudes between general and special education teachers to successful teaching experiences. Observing the effect of inclusion interventions on student learning can have a greater impact on attitude formation than teacher training course work alone (Garriott et al., 2003).

Moreover, while preservice general education teachers may support inclusion in theory, they do not consider inclusion to be appropriate for many students with disabilities (Garriott, et al., 2003). Surveys of 239 undergraduate and graduate students indicated that preservice teachers viewed the practice of inclusion favorably, but nearly half (45%) believed that special education classrooms better suited students with mild disabilities, promoting greater individualized attention for students with needs and fewer



distractions for the general education population (Garriott et al., 2003). Implications of this research suggest that collaboration among general education and special education teachers would be beneficial to creating a common philosophy of inclusion (Garriott et al., 2003). When regular and special education teachers work together, students with ASD can attain pro-social and pro-academic goals (Goodman & Williams, 2007).

As a representation of several interconnected variables, school characteristics can influence teacher attitude development (Berry, 2010). When school ethos and norms establish clear and equitable inclusion policies, teacher attitudes toward students with ASD are more likely to be positive (Avramidis et al., 2000). The composition of the student population can also influence teacher attitude development toward students with disabilities (Cook, 2004). Cook (2004) researched teacher attitudes using four classifications of attitude: attachment, concern, indifference, and rejection. Results indicated that teachers from schools with high social economic status (SES) were more likely to hold concern or reject students with disabilities (Cook, 2004). Because schools with higher SES were also likely to maintain higher academic expectations for students, teacher tolerance for struggling learners decreased significantly (Cook, 2004). The educational level of the school can also make a difference in attitude formation as teachers of elementary schools often have more positive attitudes than educators in middle school or high school settings (Park & Chitiyo, 2011).

Both positive and negative attitudes toward students with disabilities are linked to complex, interconnected variables (Berry, 2010; Park & Chitiyo, 2009). The preceding paragraph described how personal traits, contact with students with disabilities, social and cultural factors, and school characteristics can impact attitude formation as

independent variables. However, the interaction of multiple variables is important in attitude development (Park & Chitiyo, 2009). The extent to which these factors shape attitude development can impact the level of teacher attitudes (Park & Chitiyo, 2009). As such, the strength of teacher attitudes occurs along a continuum with varying degrees of favorability and disapproval (Park & Chitiyo, 2009).

### **The Influence of Teacher Attitudes**

Teacher attitudes translate to behaviors that influence the inclusion process for students with ASD comprehensively (Park & Chitiyo, 2009). The manner in which teacher attitudes inform instruction can affect both individual and program inclusion goals (Park & Chitiyo, 2009; Park & Chitiyo, 2011). When teachers hold more positive attitudes toward students with disabilities, they are more likely to commit time and effort to student success (Al-Shammari, 2006; Avramidis et al., 2000; Park & Chitiyo, 2009). Additionally, favorable attitudes inspire confidence in teachers that allow them to interact and instruct students with disabilities more effectively (Avramidis et al., 2000). Avramidis et al. (2000) studied attitudes of 81 primary and secondary inclusion teachers. Results indicated that teachers who viewed students with special needs positively facilitated and implemented inclusion policies and IEP goals (Avramidis et al., 2000).

In contrast, negative teacher attitudes toward students with disabilities can easily stifle the inclusion process (Avramidis, 2000; Park & Chitiyo, 2009). Unlike teachers who hold positive attitudes toward students with ASD, teachers with unfavorable attitudes are far less likely to offer constructive feedback on present inclusion strategies or contribute to the development of novel instructional approaches (Park & Chitiyo, 2009). Further, teachers with negative attitudes toward students with ASD are generally

less supportive of inclusion and lack confidence in their knowledge and skills with respect to teaching students with ASD (Park & Chitiyo, 2009). As a result, teachers with disapproving attitudes impact the progress and achievement of students with ASD negatively (Park & Chitiyo, 2009).

### **Teacher Expectations for Students with Special Needs**

Teacher attitudes can play an important role in shaping expectations for students with special needs (Berry, 2010; Ivey 2007; Park & Chitiyo, 2011). When teachers maintain positive attitudes toward inclusion, they strive to improve their knowledge and skills to work with all students, especially those with identified special needs (Titone, 2005). Furthermore, high expectancies for student performance are founded in a specialized belief system with the following tenets: (1) all students can/want to learn, (2) the teacher can influence student learning, and (3) colleagues within the schools have a similar influence on student learning (Finnigan, 2012).

One of the most seminal works in the area of teacher expectations is the research of Rosenthal and Jacobson (1966). Assuming that student information from a seemingly credible source would influence elementary school teachers' expectancies for students, Rosenthal and Jacobson (1966) provided false data to teachers regarding student potential. Rosenthal and Jacobson (1966) correctly hypothesized that the teachers would act in ways that would subtly encourage or facilitate progress for the students with the most promising talent, generating a self-fulfilling prophecy. As a result, a small group of students experienced success at the expense of other students for whom the teachers held lower expectations (Rosenthal & Jacobson, 1970).

Brophy and Good (1970) also explored teacher expectations and attitudes. Unlike

Jacobson and Rosenthal, these researchers were interested in studying the expectations that classroom teachers formed naturally, independent of outside information whether accurate or fabricated (Brophy & Good, 1970). Through an observation process, the researchers recorded dyadic interactions between the teacher and individual students (Brophy & Good, 1970). Results indicated that teachers encouraged high levels of achievement from students for whom they held higher expectations (Brophy & Good, 1970). Conversely, the teachers were more likely to accept poor performance from students from whom they expected less academic achievement (Brophy & Good, 1970).

In comparison to their general education students, teachers tend to assign differing expectations to their students with special needs (Ivey, 2007; Sazak Pinar & Sucuoglu, 2011). Recognizing students with special needs as different from their typical peers in learning goals and social skills, teachers adjust their expectations for students with disabilities (Sazak Pinar & Sucuoglu, 2011). Sazak Pinar and Sucuoglu (2011) administered the Social Skills Rating System-Social Skills test to 172 general education inclusion teachers to determine if a difference existed in the social skill expectations teachers maintain for general education and special education students. Results indicated that while teachers named none of the social skills as critical for school success for students with special needs, ten of the thirteen skills were labeled crucial for general education students (Sazak Pinar & Sucuoglu, 2011).

In inclusive classrooms, differing expectations for students with ASD are also present (Ivey, 2007). Further, there often exists a gap between the importance of student goals and actual teacher expectations (Ivey, 2007). In private and public school settings, Ivey (2007) administered a survey that evaluated the importance and likelihood of student

outcomes for students with ASD. Teachers reported differences in likelihood and importance of several student outcomes (Ivey, 2007). Survey results were statistically significant in eight areas: friendships, community services and acceptance, safety, law abiding, caretaker roles, independent living, citizenship, holding a job, happiness, financially secure, and highest education possible (Ivey, 2007).

Moreover, low teacher expectations are detrimental in the classroom because of their effect on student self-concept. Through teacher communication patterns and behaviors, students are very aware of teacher confidence in their abilities (Ivey, 2007). When students perceive low teacher expectations, they begin to believe they do not possess the talent or skills to achieve (Ivey, 2007). Such beliefs have long-term effects on student progress as they directly influence student self-image (Ivey, 2007; Park & Chitiyo, 2011). With limited experience teaching students with ASD, teachers are more likely to set low expectations for student performance (Park et al., 2010). Low expectations can affect students' self-concept, and ultimately student achievement (Humphrey, 2008). As a result, there is a need to implement programs in public schools that promote ASD awareness in both students and educators.

### **Summary**

The population of students with ASD in public school classrooms is increasing (Safran, 2008; Stichter et al. 2007; White et al. 2007). Although general characteristics may define ASD, the disorder will present differently in each student (Stichter et al., 2007). As a result, universal intervention strategies are simply inappropriate for students with ASD (Olley, 1999). Further, specialized training in autism is often lacking or inadequate in educator professional development, making it difficult for teachers to

implement successful learning adaptations independently (Liacono & Allen, 2008).

Recent research has shown the importance of quality teacher training programs in preparing future educators to meet the needs of students with disabilities successfully (Gao & Mager, 2011; Kim, 2011; Kuyini & Mangope, 2011; Sze, 2009). Teacher programs that expose students to theory and practice aligned with effective methods of inclusion prepare preservice educators for the extensive diversity within contemporary classrooms (Gao & Mager, 2011). By contrast, inadequate teacher training can dramatically affect the attitudes of novice educators toward students with special needs (Gao & Mager, 2011; Kim, 2011; Kuyini & Mangope, 2011; Sze, 2009).

Additionally, a lack of preparedness can impact self-efficacy (Lastrapes & Negishi, 2012; LeBlanc et al., 2009; Swackhamer et al., 2009). Perceived self-efficacy is based on how individuals judge their own ability to address the concerns of their environment (Bandura, 1982, 1997). How one appraises his/her capabilities can profoundly impact his/her thought patterns, emotional responses, and behaviors in overwhelming circumstances (Bandura, 1982). Furthermore, judgments of self-efficacy can affect the level of effort and persistence an individual will devote to a task (Bandura, 1982; Bandura, 1997; Ruble et al., 2003). Only a strong sense of self-efficacy can endure failures and overcome stress effectively (Bandura, 1982).

Consequently, educators must believe that their efforts can influence student progress (Pendergast et al., 2011; Sze, 2009). Several factors influence teacher attitudes toward students with disabilities (Park & Chitiyo, 2009). Teachers who harbor negative attitudes toward students with disabilities or who have inadequate training are less successful in their roles as educators (Berry, 2010; Sze, 2009). It is imperative that

teachers recognize that they have the capacity to make decisions that enhance their professional integrity and the academic achievement of their students (Sze, 2009). Such realizations among educators are significant because effective facilitation of inclusion programs by teachers is founded on both teacher attitudes and acceptance of students with disabilities in typical classroom settings (Park & Chitiyo, 2009; Sze, 2009).

These attitudes are critical to student success because attitudes help shape teacher expectations of student performance (Park & Chitiyo, 2011), and teacher expectancies are accepted as a significant variable of predicted achievement (Sazak Pinar & Sucuguoglu, 2011). When teacher expectations are communicated to students, student self-concept can be affected in positive or negative ways (Brophy & Good, 1970; Rosenthal & Jacobson, 1966). Because self-image affects student confidence, student achievement in the classroom can also be affected (Ivey, 2007; Park & Chitiyo, 2011). When teachers evaluate learning potential inaccurately or unfairly, student achievement suffers.

Chapter Three will outline and discuss the methodology of this study. Information regarding the subject participants and the site setting will be addressed. Data collection included a mixed methods approach, using both quantitative and qualitative approaches. To address the concept of teacher self-efficacy, the *Teachers' Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) was used to gather quantitative data. The qualitative portion of this study consisted of (1) a series of six vignettes describing common social, behavior, and academic challenges of students with ASD in inclusive classrooms and (2) semi-structured interviews with preservice early childhood educators. The purpose of these qualitative research instruments was to examine teachers' repertoires of knowledge and skills that might be influential in

addressing the needs of students with ASD. Chapter Three will also review the data analysis strategies used in this study.



## CHAPTER THREE

### PROCEDURES

#### **Introduction**

The purpose of this research was to explore the teacher self-efficacy beliefs of early childhood preservice educators and their preparedness to teach students with Autism Spectrum Disorder (ASD). The teacher self-efficacy beliefs of preservice educators were examined with respect to student engagement, instructional strategies, and classroom management. To study teacher preparedness, multiple elements of the novice educators' teaching repertoires were surveyed. Research on teacher attitudes and preparedness to address the needs of students with ASD is limited in quality and quantity; thus, this study would make a contribution to the literature. However, available literature does suggest a relationship between teacher self-efficacy and effective classroom inclusion practices (Billingsley et al., 2004; Gao & Mager, 2011; Jennett et al., 2003; Lee et al., 2011; Sari et al., 2009).

Junior- and senior-level preservice early childhood educators were the focus of this mixed-methods investigation. In the initial phase of this study, participants responded to a Likert-scale survey, the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001). Additionally, participants completed open-ended questions based on a series of short vignettes describing common social, behavioral, and academic challenges of students with ASD in inclusive classrooms. Participants read the vignettes and described their responses to situations, noting the knowledge, skills, or resources that would guide their decision-making. The second phase of this research consisted of follow-up interviews with selected preservice early

childhood educators from within the population. The combination of quantitative and qualitative surveys and semi-structured interviews were used to address the following research questions:

1. How do preservice teachers majoring in early childhood describe their sense of self-efficacy with respect to student engagement, classroom management, and instructional practices?
2. What type of learning goals do preservice early childhood teachers report setting to meet the needs of young children with ASD in inclusive classrooms?
3. What types of resources do preservice teachers specializing in early childhood access to meet the needs of students with ASD in inclusive classrooms?
4. What strategies do preservice early childhood teachers report as part of their teaching repertoires that they would draw upon to meet the academic, social, and behavioral challenges of students with ASD?
5. What are the perceptions of preservice early childhood teachers concerning their preparation to address the academic, social, and behavioral needs of students with ASD in inclusive classrooms?

### **Mixed-Methods Research**

Educational research applies the scientific method “to describe, explain, predict, or control phenomena” (Gay et. al, 2009, p. 6). In order for these goals to be met, however, researchers must collect data (Gay et. al, 2009). Both quantitative and qualitative approaches are conducive to educational research, and can yield informative

and valuable data (Gay et. al, 2009; Smith and Glass, 1987). Quantitative research focuses on numerical data as a means to explain occurrences (Gay et al., 2009; VanderStoep & Johnston, 2009). Conversely, qualitative research places significant emphasis on participant awareness or understanding of an issue (Cresswell, 2007). Using personal histories as well as observations, qualitative research seeks to understand how experience influences understanding (Gay et. al, 2009; Merriam, 2009).

However, quantitative and qualitative research methods need not be mutually exclusive (Gay et. al, 2009; Smith & Glass, 1987; Mertens & McLaughlin, 2004; VanderStoep & Johnston, 2009). In recent years, a mixed-methods approach has become increasingly popular in the social sciences (Lopez-Fernandez & Molina-Azorm, 2011; Leech & Onwuegbuzie, 2009; Terrell, 2012). Leech and Onwuegbuzie (2009) describe mixed-methods research as protocols “that involve collecting, analyzing, and interpreting quantitative and qualitative data in a single study or series of studies that investigate the same underlying phenomenon” (p. 267). Such a dual approach to data collection can offer a more comprehensive examination of educational problems (Gay et. al, 2009; Mertens & McLaughlin, 2004).

Several attributes can affect the design of mixed-methods research (Leech & Onwuegbuzie, 2009; Lopez-Fernandez & Molina-Azorm, 2011). Leech and Onwuegbuzie (2009) have identified three descriptors of mixed-methods: (1) degree of interaction between qualitative and quantitative methods, (2) sequence of data collection methods, and (3) significance of methodologies. The interaction of qualitative and quantitative methods refers to the level in which methods are interwoven in research phases and across contexts (Leech & Onwuegbuzie, 2009). Sequence and significance of

methods denotes the order methods are introduced and the importance assigned to each method of research, respectively (Leech & Onwuegbuzie, 2009).

With regard to the research design elements suggested by Leech and Onwuegbuzie (2009), the present study had moderate interaction between the qualitative and quantitative methods selected. Although quantitative data were collected first, there was an equal emphasis on qualitative and quantitative methods. This research design can be described as a sequential explanatory strategy (Terrell, 2012). The sequential explanatory design formats research around clear stages of quantitative and qualitative methods, but integrates data to produce a more in-depth understanding of the research problem (Terrell, 2012). Such a design not only strengthens validity of data through multiple methods of data collection, but also enhances data analysis and explanation (Zohrabi, 2013).

Additionally, a mixed-methods sequential explanatory design is appropriately compatible to special education research. Charged with meeting the needs of a wide spectrum of information consumers, special education research examines a problem from multiple perspectives (Klinger & Boardman, 2011; Mertens & McLaughlin, 2004). This goal is especially critical to special education teacher training where the relationship between theory and practice may be weak (Klinger & Boardman, 2011). Consequently, a mixed-method approach can provide greater insight of the interaction between teacher effectiveness and student progress (Klinger & Boardman, 2011).

As a study of teacher self-efficacy beliefs and preparedness to teach students with ASD, a mixed-methods sequential explanatory design met the needs of this investigation. Applying qualitative and quantitative methods allowed the researcher to explore the

problem of this investigation from multiple viewpoints. Using both quantitative and qualitative surveys and interviews, the researcher improved the validity of her data. The proceeding sections will explain the procedures for data collection. It begins with a description of the data collection methods, and then discusses the population and sites of research. Details about the research instruments will follow. Finally, the procedures for data collection and data analysis conclude this chapter.

### **Survey Instruments**

Surveys can be a vital component of social research (VanderStoep & Johnston, 2009; Zohrabi, 2013). A well-constructed survey can provide valuable insight about the behaviors, beliefs, attitudes, or attributes of a population (Gay et al. 2009; Smith & Glass, 1987; VanderStoep & Johnston, 2009). Data collected from surveys can be used to examine hypotheses or explore specific elements of a research problem (Gay et al., 2009). However, the success of survey research rests on coordinating the survey objectives with the research goals (Czaja & Blain, 2005). Such an accomplishment is realized by establishing survey clarity and targeting a representative sample (Czaja & Blain, 2005; Gay et al., 2009).

Data collected from survey research are influence greatly by the survey structure (Smith & Glass, 1987; Gay et al., 2009). While closed-ended surveys prompt participants to select from a series of fixed answers, open-ended surveys encourage participants to respond freely (Czaja & Blain, 2005; Gay et al., 2009; Smith & Glass, 1987). A variation of the fixed-response survey is the closed-ended survey with ordered choices or Likert scale (Smith & Glass, 1987). Typically, Likert-scales are designed to measure attitudes and require participants to specify their agreement with a statement

(VanderStoep & Johnston, 2009). Likert-scale surveys appraise attitudes by examining the collected responses of several items measuring the same variable (Smith & Glass, 1987).

Likert-scale surveys offer advantages to educational research (Gay et. al, 2009; Smith & Glass, 1987). Closed-ended, Likert-scale surveys allow researchers to survey a large population with time- and cost- efficiency (Czaja & Blain, 2005; Smith & Glass, 1987). Furthermore, with even moderate-sized populations, Likert-scale surveys provide superior reliability and hold the potential for advanced quantitative analysis (Smith & Glass, 1987). Because of these benefits, a Likert-scale survey was suitable for this research. In particular, the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) has been used to examine self-efficacy beliefs of preservice teachers in recent studies and has proven valid and reliable (Fives & Buehl, 2009; Pendergast et al., 2011; Swan, Wolf, & Can, 2011; Nie, Shun, & Liao, 2012).

Open-ended surveys can also be an effective data collection method. Soliciting a free response from participants, open-ended or unstructured surveys increase the complexity of response by soliciting explanations for selections (Czaja & Blain, 2005; Gay et al., 2009; Smith & Glass, 1987; Zohrabi, 2013). Like closed-ended surveys, open-ended surveys must be designed with a clear purpose and goal (Gay et al., 2009). A combination of closed- and open-ended surveys can increase the validity of an investigation by providing verification of data from multiple sources (Smith & Glass, 1987; Zohrabi, 2013).

The present study pairs open-ended surveys with a series of vignettes. Alexander and Becker (1978) describe vignettes as “short descriptions of a person or a social

situation which contain precise references to what are thought to be the most important factors in decision-making or judgment-making of the respondents” (p. 94). When used in educational settings, vignettes promote reflective practice, motivating educators to consider carefully a planned course of action (Jeffries & Maeder, 2011). Frequent use of vignettes can also help novice educators to assess gaps in their knowledge and understanding (Veal, 2002). Furthermore, vignettes promote more than recall of knowledge and skills, but rather, transfer of understanding (Jeffries & Meader, 2011).

The benefits of vignettes in survey research are extensive (Jeffries & Meader, 2011). First, vignettes often have a single topic of focus which permits researchers to isolate an individual concept of research (Hughes & Huby, 2002; Jeffries & Meader, 2011). Second, educational vignettes showcase authentic classroom situations and elicit an instinctive response from participants (Hughes & Huby, 2002). This perspective is valuable because this reaction mimics how teachers respond in the classroom, but can be ascertained far more efficiently than through an observational study (Hughes & Huby, 2002). Third, vignettes offer uniformity of task (Alexander & Becker, 1978; Jeffries & Meager, 2011; Veal, 2002), but can be written to solicit multiple appropriate responses (Jeffres & Meager, 2011).

Consequently, vignettes posed many advantages in this study design. The vignette format allowed the researcher to examine the responses of preservice teachers to specific types of challenges of students with ASD. Additionally, these data were administered and collected with relative ease and without managing individual teacher observations. Finally, task uniformity created a standardized measure by which to analyze participant responses.

## **Semi-Structured Interviews**

Qualitative interviews are purposeful conversations between individuals with the intent of gaining information (Gay et al., 2009; Rubin & Rubin, 1995). As an interviewer, the researcher is obligated (1) to maintain focus on a specific interest and (2) to ask questions impartially (Yin, 2009; Zahrabi, 2013). When conducted properly, interviews have the potential to improve data quality and validity as the researcher accepts the responsibility of recording and organizing information (Czaja & Blair, 2005; Rubin & Rubin, 1995). In this way, participants experience greater freedom to express thoughts and feelings than when asked to provide written responses (Czaja & Blair, 2005; Gay et al., 2009; Zahrabi, 2013). Further, the researcher has the flexibility to explore ideas discussed in the interview more fully (VanderStoep & Johnston, 2009). When researchers make the effort to establish a bond with the interviewee, important insight about the research topic can be obtained (Czaja & Blair).

Interviews are classified by their structure and format (Gay et al., 2009; Merriam, 2009; Zahrabi, 2013). The semi-structured interview offers a combination of formal and informal interview questions (Merriam, 2009). While an outline of questions is usually established in advance, follow-up questions and probes are left unplanned purposefully (Merriam, 2009; VanderStoep & Johnston, 2009). Such a design guarantees the collection of particular data from each participant, but also permits the researcher to explore concepts that develop during the interview process (Gay et al., 2009; Merriam, 2009; VanderStoep & Johnston, 2009).

When a researcher is unable to observe the thoughts and behaviors that shape how others view and interpret the world around them, interviews become necessary to explore



the research problem fully (Merriam, 2009; Zahrabi, 2013). Consequently, interviews were a very appropriate data collection method for this research. Even if observations of the early childhood preservice educators engaged in teaching students with ASD had been possible, they would not have provided insight to the experiences and knowledge that shaped teacher attitudes or understanding. A semi-structured interview protocol allowed the researcher to pursue participants' general beliefs while also permitting the examination of various proficiencies which affected their views of teaching students with ASD.

### **Selection of Research Participants**

Professors at several higher education institutions in two states in the United States were invited to participate in the study. A total of 11 emails were submitted, and the principal researcher received responses from five interested professors. Upon further review of the details of the study, two of the five professors declined participation in the study. One professor did not teach students who met the specific criteria of this study, and the other professor was unable to gain supervisory permission to collect data for this type of research.

The three professors who agreed to assist in this study committed (1) to provide their junior and/or senior preservice early childhood teachers with 20 minutes of course time to complete research materials, and (2) to identify a research assistant to collect and distribute the research materials. A research assistant was necessary to manage the survey materials to eliminate any hint of coercion on the part of the professor or researcher. The sponsoring professors at each campus submitted site approval letters stating this agreement, and the principal investigator submitted her research protocol to

the Institutional Research Board of her university of attendance as well as at each individual site.

### **Purposeful Sampling**

A purposeful sampling technique was used in this research. This approach selects participants for a study based on a specific set of criteria that is believed to create critical understanding of the issues central to the research (Creswell, 2007; Gay et al., 2009; Mertens & McLaughlin, 2004; VanderStoep & Johnston, 2009). In purposeful sampling, the researcher may elect to include representation of specific groups of people who may not necessarily be widely common in society (VanderStoep & Johnston, 2009). Moreover, the knowledge and experiences of the researcher often define the specific criteria for a research population (Gay et al., 2009). Accordingly, the clarity of the criteria set to define a population can be significant to the reliability of the research (Gay et al., 2009).

In the present study, subjects had to meet exact criteria to participate. Participants had to be preservice early childhood teacher candidates in their junior or senior year of their certification program. This particular population of students was studied for two significant reasons. First, this group of teachers was near completion of the teacher certification program. It may be assumed, therefore, that these participants would be certified as early childhood classroom teachers in the state of Pennsylvania and would be prepared to address the needs of diverse learners. Secondly, students at the close of their teacher preparation programs are actively engaged in developing their teaching philosophies and have a knowledge base of both theory and practice (Gao & Mager,

2011; Garrett, 2007; Gersten et al., 2000). Such teacher attitudes and beliefs with respect to the inclusion of students with ASD were central to the problem of this research.

### **Sites of Research**

Three higher institutions of learning in Pennsylvania were used as sites in this research study. These higher education settings were located conveniently in different geographic areas within the state. The sites of research represent institutions of learning in western, central, and eastern portions of the state. Since teacher certification is driven by state requirements, the researcher sought to examine how these mandates are interpreted across the state. However, it may be assumed that course programming for the early childhood/elementary education degree at the three sites in this investigation was representative of institutions within the state. The proceeding sections will describe the basic characteristics of each college or university and its early childhood/special education and/or early childhood education program.

#### **Site A**

Site A is a large public university within the western region of the state. It is approximately 55 miles northeast of a large city. The campus maintains 374 acres and 59 buildings. In addition to the main campus, Site A provides course programming at three county campuses within the state, and delivers distance education for some majors. Serving an undergraduate population of over 13,000 students, Site A offers 136 undergraduate programs. The faculty is composed of more than 750 members, and the student/faculty ratio is 19:1. Site A has an integrated early childhood-special education dual certification program which certifies educators to teach grades Pre-K through grade

4 and special education. Many classes within the major are co-taught by faculty from the early childhood and special education departments.

### **Site B**

Site B is a small private Catholic college in the central region of the state. It is approximately 80 miles east of a large city. Situated among 193 acres, Site B retains 12 buildings. The undergraduate student enrollment at Site B is 1,200 and the average freshman class is 350 students. There are 175 faculty members at Site B, and the faculty/student ratio is 14:1. Site B offers 70 course programs with 20 minor and concentration options. Site B has an integrated early childhood-elementary education program which certifies educators to teach grades Pre-K through grade 6. Although graduates of the early childhood/elementary education program at Site B do not earn a special education certification, students are required to take two courses focusing on exceptional children.

### **Site C**

Site C is a mid-sized public university in the eastern region of the state. It is approximately 100 miles north of a large city. The campus is composed of 257 acres and 65 buildings. The undergraduate population of the university is 6,300 students, with an average freshman class size of 1,300 students. There are approximately 400 full- and part-time faculty members employed at Site C and the student/teacher ratio is 24:1. Site C offers 58 undergraduate programs, including both a dual elementary and early childhood degree and an integrated special and elementary education program. While the dual elementary and early childhood degree certifies students to teach Pre-K through grade 4 and K through grade 6, the integrated special and elementary education program

prepares students for a career teaching K-6 at the elementary level or a K-12 position in special education.

### **Research Instruments**

A combination of quantitative and qualitative instruments was used in this study. Accordingly, both numerical and narrative data were used to explore the problem of this research (Gay et al., 2009). This dual strategy of data collection is employed often in the field of special education research in order to build collective understanding of an issue (Mertens & McLaughlin, 2004). Such consensus building is critical to meeting the needs of a wide spectrum of stakeholders in the field of special education (Mertens & McLaughlin, 2004).

Quantitative data was gathered through a Likert scale survey, the short version of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001). The purpose of this questionnaire is to solicit preservice teachers' opinions of how influential their skills and backgrounds would be in diverse classroom situations. The qualitative portion of this study included two parts: First, participants completed an open-ended vignette survey describing common social, behavior, and academic challenges of students with ASD in inclusive classrooms. Second, follow-up interviews were conducted with select participants from within the larger population.

#### ***Teacher Sense of Efficacy Scale***

Permission to use the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) in the present study was obtained. The short form of the *Teacher Sense of Efficacy Scale* consists of 12 Likert-scale items which ask participants to rate the influence of their background and skills on classroom decision-

making and problem-solving (Appendix A). Tschannen-Moran and Woolfolk Hoy (2001) found three moderately correlated factors in the short form of their survey instrument: efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management.

This particular instrument was chosen for this investigation because it is a well-designed instrument that has been used to assess teacher self-efficacy extensively. Tschannen-Moran and Woolfolk Hoy (2001) created a self-efficacy measure to address deficiencies in the available teacher self-efficacy scales. Specifically, the researchers wanted to design a measure that would explore teacher self-efficacy across multiple contexts (Tschannen-Moran & Woolfolk Hoy, 2001).

Furthermore, the reliability and validity of this self-efficacy instrument has been well-established. In initial development, the *Teacher Sense of Efficacy Scale* was examined critically in a series of three studies (Tschannen-Moran & Woolfolk Hoy, 2001). The number of items on the instrument was revised several times, ultimately producing two instruments, a long form with 24 items, and a short form with 12 items (Tschannen-Moran & Woolfolk Hoy, 2001). Both instrument formats required participants to rate significant teaching responsibilities using a nine-point scale with five anchors along the continuum (Tschannen-Moran & Woolfolk Hoy, 2001).

Reviewed for structure, reliability, and validity, the short and long versions of the survey instruments were implemented in studies with both inservice and preservice educators (Tschannen-Moran & Woolfolk Hoy, 2001). Examining the correlation of the *Teacher Sense of Efficacy Scale* with other prominent teacher self-efficacy scales indicated reasonable validity and reliability of the measure (Tschannen-Moran &

Woolfolk Hoy, 2001). In addition, unlike other established measures at the time of development, the *Teacher Sense of Efficacy Scale* explored self-efficacy with respect to a greater array of teacher responsibilities (Tschannen-Moran & Woolfolk Hoy, 2001).

### **Open-Ended Vignette Survey Instrument**

The researcher-developed qualitative survey instrument consisted of two separate segments (Appendix B). First, participants were to provide demographic information. Since teacher characteristics were not examined in this study, the researcher required only basic information from the participants. Specifically, the participants were to provide their anticipated graduation date and major. This information was necessary to verify that all participants met the exact criteria of this study. Participants were also asked to list the number of special education courses they had taken.

Second, participants were asked to read a series of several short vignettes which describe common academic, social, or behavioral challenges of elementary-aged students with ASD. Following, participants were to respond to each situation, noting the knowledge or skills they would use to address the challenge. Specifically, participants were asked to list a specific goal for each child described in the vignette as well as the resources and strategies they would employ as teachers to help the student progress.

To test the reliability and validity of this instrument, the vignette survey was pilot tested using a panel of experts approach. Such a strategy can prove valuable when panel experts possess varied knowledge or proficiencies (Czaja & Blair, 2005). These educators were all known to the researcher, and all had experience working with students with ASD in some capacity. An email was sent to eight field experts requesting their input on the vignette survey instrument. Five experts agreed to review the instrument and

to provide comments. The researcher provided an electronic copy of the instrument to each field expert for review. Reviewers were asked to assess the instrument for clarity of purpose and understanding. The majority of the experts provided written comments within the Microsoft Word document although one expert provided a written list of critiques in an email.

Upon receipt of the expert reviews, the researcher combined all responses, noting common suggestions for revision. The researcher carefully reflected on each critique, and revised the survey instrument as appropriate. Based upon the feedback from the field experts, the researcher made the following revisions to the vignette survey instrument:

- In part one of the survey, which asks participants to submit background information, question three was revised from “Have you taken a special education class?” to include the follow-up question, “If yes, how many?”
- Vignette questions were assigned item numbers. This organization was added to aid in the data analysis process.
- Vignette one was rewritten to give a specific example of the type of comprehension questions that are difficult for the child in the vignette to answer “(i.e. Who are the characters? What is the plot?)”
- The final sentence “Michael’s classmates begin avoiding him during the lunch period” was added to vignette two to provide greater clarity of the social challenge illustrated in the vignette.
- Several experts offered concern that the survey was too long for participants to provide quality responses in the 20-minute time frame.

Accordingly, the number of vignettes in the survey instrument was



reduced from six to four. Vignettes the experts identified as least descriptive of common challenges of students with ASD were eliminated.

- The character name in vignette three was changed from “Andre” to “Julie” to offer more diversity to the collection of vignettes and to eliminate any false impression that ASD affects only males.

After implementing these revisions, the researcher pilot tested the survey a second time. Three preservice early childhood educators not participating in the study, but known to the researcher served as the pilot testing sample. Sharing the same criteria as the population sample, these individuals were an appropriate test group. These undergraduate students were asked to complete the vignette survey as though they were participants in the study. The researcher used the responses of the pilot group to assess the clarity of the revised instrument. Based on the pilot group surveys results, the researcher made no additional revisions to the vignette survey instrument.

### **Semi-Structured Interviews**

Personal interviews were included in the research protocol to study further the preparedness of the preservice early childhood educators to teach students with ASD. The interview format included nine questions which were developed by the researcher (Appendix C). All participants in the follow-up interview responded to the same set of questions. The guiding questions for this proposed research focused on major elements of teacher preparation highlighted in the literature. The same panel of experts who reviewed the vignette survey also critiqued the interview protocol. The field experts made the following suggestions for revisions to the interview questions:

- Question two was rewritten to separate the concepts of benefits and burdens. Two distinct questions were created: “What benefits do you believe inclusion of students with ASD offers? What burdens do you believe inclusion of students with ASD creates?”
- Question four was revised to include a follow-up question, “How comfortable do you feel meeting the academic needs of students with ASD in a regular education classroom? What experience or knowledge do you believe has produced this feeling?” This change was made to probe for specific experiences that might shape the interviewees’ perspectives toward teaching students with ASD.
- Similarly, question six was revised to include a follow-up question, “What practical experience have you had working with students with ASD? How do you think these experiences might influence your future teaching practice?” This insertion was made as a second attempt for participants to identify influential experiences with students with ASD.

### **Procedures for Data Collection**

At each approved site, the faculty member sponsoring this study identified a research assistant to distribute and collect research materials. This measure was taken to eliminate suspicion of coercion by the professor or the principal investigator. All subjects were provided with a cover letter which explained the purpose of this study and

their rights as participants (Appendix D). This document also explained how confidentiality was maintained throughout the study.

Although survey instruments were provided during the class period, participation in this study was entirely voluntary. Care was taken to make certain that those who chose to participate could not be identified by peers or the research assistant. With respect to the survey, students who elected not to participate in the study were given an alternative to participation, an ASD focused read-and-review activity. Students who agreed to participate in the study were given a survey packet which contained two instruments, (1) the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) and (2) an open-ended vignette survey.

When participants completed the survey packet, they were invited to contribute to a follow-up interview. To identify prospective interviewees, participants of the initial phase of the study deposited a response card in a box at the back of the classroom. To ensure confidentiality, all of those who were willing to be interviewed as well as those who declined deposited a card in the box. Students who expressed interest in participating in the follow-up interviews supplied their names, contact telephone numbers, and e-mail addresses. Students who declined participation deposited a blank card. Potential participants for the follow-up interview were contacted via telephone or e-mail to set up a convenient date and time to conduct a digitally recorded telephone interview.

Telephone interviews with the participants were scheduled at a time that was mutually agreeable to the researcher and the interviewee. After a date and time were determined, a cover letter which explained the purpose of the interview portion of this

study and their rights as participants was sent to the participants (Appendix E). Two copies of the voluntary consent form were also provided to the participants (Appendix F).

Participants were informed well in advance that the telephone interviews would be digitally recorded and would take approximately 25 minutes. The identity of those who responded to the interviews was kept confidential by labeling the digital files and transcripts as Pre-Educator 1, Pre-Educator 2, and so forth. The same method of identification was used in the discussion of the findings of this research.

As a compensation for their time as well as an incentive to participate, interviewees were offered a \$10 gift card. Following the interview, participants who wished to receive a \$10 gift card as compensation were asked to provide an address where the gift card could be sent. The principal researcher mailed the compensation within one week of the interview along with a follow-up letter (Appendix G).

### **Plan for Data Analysis**

To analyze quantitative data collected from the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Hoy, 2001), frequency statistics were performed with the use of SPSS software. Scoring for each of the 12 Likert-scale items was based on the numeric response participants indicated. Items were recorded with a value of one to nine. Score calculation for all items was reported as follows: Responses of 1 were valued as 1; responses of 9 were valued as 9; 2 = 2, 3 = 3, 4 = 4, 5 = 5, 6 = 6, 7 = 7, 8 = 8. In addition, a mean score was calculated for each item number.

Tschannen-Moran and Woolfolk Hoy (2001) found that three moderately correlated factors are present in both the short form of their survey instrument. These factors are efficacy in student engagement, efficacy in instructional strategies, and

efficacy in classroom management (Tschannen-Moran & Woolfolk Hoy, 2001).

Commonly, the groupings of the factors with respect to the short form are as follows:

efficacy in student engagement, items 2, 3, 4, and 11; efficacy in instructional strategies, items 5, 9, 10, and 12; and efficacy in classroom management, items 1, 6, 7, and 8 (Tschannen-Moran & Woolfolk Hoy, 2001). The 12 Likert-scale items were categorized by these factors and a mean score was calculated for each factor.

Responses from the open-ended vignette survey were analyzed through both statistical and qualitative methods. Statistical analysis included three distinct phases: First, participant responses were organized according to item number. Then, responses were categorized through content analysis. Finally, the frequency of participant responses was calculated and translated into a percentage of responses.

The quality of participant responses to the open-ended vignette survey was addressed through a combination of qualitative and quantitative analysis as well. A panel of five experts with experience working with children on the autism spectrum was solicited to complete the open-ended vignette survey based on their knowledge and experience working with young students with ASD. The field experts included three ASD K-6 inclusion educators, one specialized ASD educator from an Approved Private School (APS), and a Behavior Specialist Consultant (BSC) from a wraparound service agency. The researcher used the responses of these field experts to create a rubric by which to assess the quality of participant responses for each of the four vignette survey items (Appendix H). The rubric was reviewed using the pilot tested responses to the vignette survey. Minor revisions were made to the rubric based on this pilot test.

Participant responses were organized according to the focus of each item. Survey items concentrated on learning goals, resources, or strategies to support students with ASD. The organization of responses was as follows: learning goals, item numbers, 1, 4, 7, and 10 resources, item numbers 2, 5, 8 and 11, and strategies, item numbers 3, 6, 9 and 12. Participant responses were evaluated as advanced, proficient, basic, or no response. Advanced responses were valued as 3, proficient = 2, basic = 1, and no response = 0. A mean score was calculated for each group of responses. Additionally, a mean score was calculated for each vignette sequence.

Participant interviews were transcribed verbatim, and then coded according to theme. In order to create an organizational framework, a constant comparison method of coding was used (Glaser, 1967). Prominent codes were defined first, and then sub codes were determined, resulting in a meaningful classification of ideas (Glaser, 1967; Glesne, 1999). Emergent codes were common themes in the literature.

Once codes are identified, common themes should be explored (VanderStoep & Johnston, 2009). Both coded and uncoded data were reviewed to verify the relevancy of the determined themes (Merrim, 2009; VanderStoep & Jonston, 2009). As these themes become evident, the goal of qualitative research is to produce an applicable theory, representing an appropriate interpretation of the inquiry (Rubin & Rubin, 1995; VanderStoep & Johnston, 2009). These theories may then be evaluated in light of other relevant knowledge within the field (Rubin & Rubin, 1995).

### **Summary**

The purpose of this research was to explore the teacher self-efficacy beliefs of early childhood preservice educators and their preparedness to teach students with

Autism Spectrum Disorder (ASD). This study employed a mixed-methods approach, collecting both qualitative and quantitative data. Preservice early childhood educators completed the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) which consists of 12 Likert scale items. These participants also completed an open-ended survey with a series of vignettes which described common academic, behavioral, and social challenges of students with ASD. In addition, selected participants were invited to participate in a follow-up interview to share their feelings of preparedness to teach young students with ASD.

Quantitative data were analyzed using SPSS software to calculate descriptive statistics. Data from the open-ended vignette survey used a combination of statistical and qualitative analysis. Accordingly, both the frequency of specific responses and the type of response were equally significant. Interview responses were transcribed verbatim and coded by theme. These data analysis procedures as well as the findings of this research are described further in Chapter Four.

## CHAPTER FOUR

### RESULTS

#### **Introduction**

The purpose of this research was to explore the teacher self-efficacy beliefs of early childhood educators and their preparedness to work with students with ASD. This study used a sequential explanatory mixed-methods design which was composed of two distinct phases. Phase one consisted of both quantitative and qualitative elements while phase two maintained a qualitative focus.

The sample of this study was limited to junior- and senior-level preservice early childhood educators. Participants in the initial segment of this investigation were given two tasks: (1) respond to a Likert-scale survey, the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001), and (2) complete open-ended questions based on a series of short vignettes describing common social, behavioral, and academic challenges of students with ASD in inclusive classrooms. After reading each vignette, participants described their responses to the situation, noting specific knowledge, skills, or resources that would inform their decision-making. In the second phase of this study, follow-up interviews were conducted with selected preservice early childhood educators drawn from within the larger group of participants. This mixed-method study addressed the following research questions:

1. How do preservice teachers majoring in early childhood describe their sense of self-efficacy with respect to student engagement, classroom management, and instructional practices?
2. What type of learning goals do preservice early childhood teachers report



setting to meet the needs of young children with ASD in inclusive classrooms?

3. What types of resources do preservice teachers specializing in early childhood access to meet the needs of students with ASD in inclusive classrooms?
4. What strategies do preservice early childhood teachers report as part of their teaching repertoires that they would draw upon to meet the academic, social, and behavioral challenges of students with ASD?
5. What are the perceptions of preservice early childhood teachers concerning their preparation to address the academic, social, and behavioral needs of students with ASD in inclusive classrooms?

Both qualitative and quantitative techniques were utilized to interpret data collected from the initial phase of this investigation. While data from the short form of the *Teachers Self-Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) were analyzed through the use of frequency statistics, a combination of quantitative and qualitative analysis was used to evaluate the quality of participant responses. To analyze data from the follow-up interview, a progressive system of coding was used to develop a series of emerging themes (Glaser, 1967). This chapter will describe the results of the data analysis process in the following segments, (1) study and sample demographics, (2) *Teachers Self-Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) results, (3) vignette open-ended survey results, (4) interview survey results, and (5) chapter summary.

## **Study Demographics**

This study was conducted with junior- and senior-level early childhood preservice educators enrolled in 4-year teacher preparation programs in Pennsylvania. This particular group of preservice educators was studied in this investigation because they were nearing the completion of their four-year teacher certification programs, and thus, assumed to be equipped to meet the needs of diverse learners. It was expected that the combination of field experience in public school settings, coupled with the methods courses required of juniors and seniors would prompt these novice educators to engage in reflective practice as they established their own pedagogical ideals (Gao & Mager, 2011; Garrett, 2007; Gersten et al., 2000). Gauging an understanding of these preservice teachers' beliefs, values, and attitudes and their influence on teacher attitudes toward the inclusion process for students with ASD was essential to this research.

Participants in this study were solicited from three Pennsylvania universities that offered four-year degree programs in early childhood education. The geographic locations of the three sites represented a wide cross section; the sites in this study were located in the western, central, and eastern portions of the state. Although two of the sites were large public universities, one site was a smaller private Catholic college. At the time of this investigation, all three campuses offered dual certification programs in either early childhood and special education or early childhood and elementary education.

## **Characteristics of Participants**

The population of this study was junior- and senior- level early childhood preservice educators. Participants of the study were solicited through course assignments at the three institution sites. Participation in this study was entirely voluntary although

the survey instruments were administered during course instruction with an alternative to participation in place. Students who declined participation were assigned an ASD-focused read-and-review activity. In this way, the identity of students who chose to participate and those who did not was concealed because all students were writing on paper during the administration of the survey. Neither the course instructor nor class peers were aware of who completed the survey and who did not.

From the three postsecondary sites, a total of 91 potential participants were solicited for the initial phase of this investigation. A first attempt to collect data offered a potential pool of 59 participants. Distribution of survey materials to these participants yielded a response from 27 preservice educators. To expand the population, additional participants were solicited from an urban field experience offered by one of the three institutions. This second attempt provided an additional 13 responses. However, six of these individuals were not junior- or senior- level students and/or early childhood majors, and as such, did not meet the inclusion criteria. Therefore, these six responses were not included in the research data. Consequently, the total number of participants for the initial phase of this research was 34. Table 2 describes the results of the survey participant solicitation protocol.

Table 2

*Survey Participant Response Results*

	N	%
First Survey Distribution	59	100
Returned Surveys	27	46
Second Survey Distribution	32	100
Returned Surveys from Second Distribution	13	42
Eligible Returned Surveys	7	22
Total Surveys Returned	34	37

Although the relationship between teacher characteristics and preparedness was not explored in this study, the researcher required some descriptive data from the participants. Specifically, the participants were to provide their anticipated graduation date and major. This information was necessary to verify that all participants met the exact criteria for inclusion in this study. Participants were also asked to list the number of special education courses they had taken and note any experiences working with students with ASD. These demographic data are presented in Table 3.

Table 3

*Demographic Characteristics of Participants (N = 34)*

Characteristic	N	%
Anticipated Graduation Year		
2013	24	71
2014	10	29
Number of Special Education Courses Taken		
None	1	3
Four or Less	16	47
Greater than Four	17	50
Number of Experiences with Students with ASD		
None	14	41
Two or Less	19	56
Greater than Two	1	3

***Teacher Sense of Efficacy Scale Results***

The first segment of the initial phase of this research consisted of the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001).

Directions for this research instrument request that respondents rate the influence of their background and skills on classroom decision-making and problem-solving. Tschannen-Moran and Woolfolk Hoy (2001) identified efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management as moderately correlated factors in the short form of their survey instrument. Survey results with respect to these

factors as well as individual item numbers will be discussed in the proceeding sections. These data will address the first research question: “How do preservice teachers majoring in early childhood describe their sense of self-efficacy with respect to student engagement, classroom management, and instructional practices?”

### **Teacher Self-Efficacy Beliefs of Preservice Early Childhood Educators**

As a whole, survey items 1-12 of the short form of the *Teacher Sense of Efficacy Scale* provide general information about how teacher ability, resourcefulness, and opportunity impact student learning (Tschannen-Moran & Woolfolk Hoy, 2001). The short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) consists of 12 questions and uses a nine-point scale. Anchors along the continuum of responses ranged from 1 (none at all) to 9 (a great deal). The total scale was as follows (Tschannen-Moran & Woolfolk Hoy, 2001):

- 1, none at all,
- 3, very little,
- 5, some degree,
- 7, quite a bit,
- 9, a great deal

Survey items from the short form of the *Teacher Sense of Efficacy Scale* were as follows (Tschannen-Moran & Woolfolk Hoy, 2001):

1. How much can you do to control disruptive behavior in the classroom?
2. How much can you do to motivate students who show low interest in school work?
3. How much can you do to calm a student who is disruptive or noisy?
4. How much can you do to help your students value learning?

5. To what extent can you craft good questions for your students?
6. How much can you do to get children to follow classroom rules?
7. How much can you do to get students to believe they can do well in school work?
8. How well can you establish a classroom management system with each group of students?
9. To what extent can you use a variety of assessment strategies?
10. To what extent can you provide an alternative explanation or example when students are confused?
11. How much can you assist families in helping their children do well in school?
12. How well can you implement alternative teaching strategies in your classroom?

Table 4 shows a descriptive analysis of responses to each individual item number.

The mean score of each survey item indicated self-reported teacher efficacy responses between anchors 5, *some degree*, and 7, *quite a bit*. Alternatively, Table 5 shows the frequency of responses of 7 or higher. These particular responses are statistically significant because Tschannen-Moran and Woolfolk Hoy (2001) recognized responses of 7.1 or above to be associated with higher levels of perceived teacher self-efficacy.

Table 4

*Preservice Teachers' Perceived Self-Efficacy (N = 34)*

Item Number	Minimum	Maximum	Mean	Std. Dev.
1	5	9	6.97	1.31
2	5	9	7.32	1.07
3	3	9	6.50	1.33
4	4	9	6.97	1.19
5	5	9	7.24	1.16
6	4	9	6.94	1.15
7	4	9	7.21	1.12
8	4	9	6.79	1.25
9	4	9	6.88	1.27
10	3	9	6.59	1.23
11	2	9	5.91	1.69
12	4	9	6.71	1.32



Table 5

*Preservice Teachers' Perceived High Levels of Self-Efficacy (N = 34)*

Item	Response Frequency			Total
	7	8	9	
1	10 (29.4%)	11 (32.4%)	3 (8.8%)	24 (70.6%)
2	14 (41.2%)	9 (26.5%)	5 (14.7%)	28 (82.4%)
3	11 (32.4%)	7 (20.6%)	1 (2.9%)	19 (55.9%)
4	12 (35.3%)	12 (35.3%)	1 (2.9%)	25 (73.5%)
5	12 (35.3%)	11 (32.4%)	4 (11.8%)	27 (79.4%)
6	10 (29.4%)	10 (29.4%)	2 (5.9%)	22 (64.7%)
7	11 (32.4%)	12 (35.3%)	3 (8.8%)	26 (73.5%)
8	12 (35.3%)	8 (23.5%)	2 (5.9%)	22 (64.7%)
9	12 (35.3%)	4 (11.8%)	5 (14.7%)	21 (61.8%)
10	14 (41.2%)	6 (17.6%)	1 (2.9%)	21 (61.8%)
11	11 (32.4%)	2 (5.9%)	2 (5.9%)	15 (44.1%)
12	8 (23.5%)	7 (20.6%)	3 (8.8%)	18 (52.9%)

### **Student Engagement, Classroom Management, and Instructional Practices: Self-Efficacy Beliefs**

Exploring teacher self-efficacy across several contexts, the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) is distinguished from other survey instruments of its kind. Moderately correlated factors found in this instrument offer specific insight to teacher self-efficacy. These factors are self-efficacy in student engagement, instructional strategies, and classroom management (Tschannen-Moran &

Woolfolk Hoy, 2001). Generally, the groupings of the factors with respect to the short form are as follows: efficacy in student engagement, items 2, 3, 4, and 11; efficacy in instructional strategies, items 5, 9, 10, and 12; and efficacy in classroom management, items 1, 6, 7, and 8 (Tschannen-Moran & Woolfolk Hoy, 2001). Table 6 shows the mean and standard deviation scores for each self-efficacy factor. Similar to the respondents' teacher self-efficacy data, mean scores of self-efficacy factors fell between anchors 5, *some degree*, and 7, *quite a bit*.

Table 6

*Preservice Teachers' Perceived Self-Efficacy by Factor*

Factor	Mean	Std. Dev.
Engagement	6.85	0.93
Management	6.80	1.07
Instruction	6.85	0.97

### **Open-Ended Vignette Survey Design**

The second segment of the initial phase of data collection included a researcher-designed, open-ended vignette survey. Each vignette described a specific academic, social, or behavior challenge of elementary-aged students with ASD. After reading each classroom scenario, participants were asked to respond with the skills and knowledge they would access to address the situation described. In particular, participants were asked to list a learning goal for each child with ASD described in the vignette as well as the resources and strategies they would implement to support the student. Survey items for each vignette sequence included the following three questions:

1. As the teacher in this scenario, what goal might you set for this child?
2. What resources might you use to meet this goal?
3. What strategies might you use to help this child overcome the challenge described in the vignette?

A combination of quantitative and qualitative data was collected from the open-ended vignette survey. The subsequent sections will discuss the results of the open-ended vignette survey and will address the following research questions:

1. What type of learning goals do preservice early childhood teachers report setting to meet the needs of young children with ASD in inclusive classrooms?
2. What types of resources do preservice teachers specializing in early childhood access to meet the needs of students with ASD in inclusive classrooms?
3. What strategies do preservice early childhood teachers report as part of their teaching repertoires that they would draw upon to meet the academic, social, and behavioral challenges of students with ASD?

### **Description of Open-Ended Vignette Narratives**

The open-ended vignette survey consisted of four vignette sequences. Each vignette described classroom challenges of students with ASD with common characteristics of the disorder. Vignette #1 highlighted an academic challenge while Vignette #2 shared the details of a social concern. Both Vignette #3 and Vignette #4 described behavioral challenges. This section provides the text of each vignette narrative as well as a description of the particular characteristics of ASD that can stimulate the common challenges described in each vignette.

*Vignette #1: James, a first grade student, has an excellent sight word vocabulary and reads with advanced expression and rate. However, James comprehends little of what he reads. While reading even simple passages, James struggles to respond correctly to basic questions of story structure (i.e. Who are the characters? What is the plot?).*

Although students with ASD often demonstrate strong word recognition skills, reading comprehension frequently poses a greater challenge (Gately, 2008; Randi, Newman, & Grigorenko, 2010; Whalon & Hanline, 2008). Several theories offer an explanation for weaknesses in reading comprehension within this population of students (Carnahan, Williamson, & Christman, 2011). First, students with ASD often struggle with Theory of the Mind, the ability to understanding thoughts and ideas which differ from their own (Carnahan et al., 2011; Randi et al., 2010). Consequently, predicting characters' actions or making inferences about narrative text can be especially challenging (Gately, 2008; Carnahan et al., 2011; Randi et al., 2010). Second, students with ASD typically have weak central coherence, prompting them to place intense focus on details rather than generalities (Carnahan et al, 2011). For this reason, it can be a struggle for students with ASD to bypass the individual meaning of words and sentences to glean a holistic understanding from the text (Randi et. al, 2010; O'Conner & Klein, 2004). Third, students with ASD can have poor executive functioning which hinders self-correction and self-monitoring during independent reading (Carnahan et al., 2011).

*Vignette #2: Michael has a very intense interest in baseball. He can recall the batting average of every current player on the local team. Each afternoon, he monopolizes the conversation at his lunch table, talking incessantly to his peers about*

*baseball facts and figures. Michael's classmates begin avoiding him during the lunch period.*

Restrictive interests are highly characteristic of an ASD diagnosis (Charman, 2002; Stribling, Rae, & Dickerson, 2009). Coupled along with this impairment is the inability to perceive and understand the thoughts and feelings of others (Frith, 1989; Cohen, 2006). Together these qualities of ASD affect students' abilities to use social context to inform their style of communication (Cohen, 2006). Specifically, students with ASD struggle to interpret expressions from conversation partners which indicate loss of interest or a desire to introduce novel topics (Cohen, 2006; Stribling et al., 2009). Stribling et al. (2009) described this social phenomenon as "topic perseveration," and suggested that this impairment sabotages efforts to build meaningful relationships with peers.

*Vignette #3: Playing online computer math games is a preferred activity for Julie. When she completes her class assignments, her teacher rewards her by allowing Julie to play two computer math games. Yesterday, Julie had difficulty completing her classwork, and did not earn computer time. Julie responded by pushing over her desk and crying loudly.*

Task completion is critical to the educational progress of students with ASD (Mechling, Gast, & Cronin, 2006). When students with ASD are actively engaged in learning assignments, they make advancements toward lifelong adjustment (Iovannone et al., 2003). However, students with ASD struggle with joint attention which makes replicating the behaviors of peers and teachers difficult (Cohen, 2006). In addition, poor executive function inhibits the mental planning and flexibility necessary to persist with

complex challenges (Cohen, 2006). Accordingly, task completion requires unique motivation and reinforcement for students with ASD (Mechling et al., 2006).

*Vignette #4: Matt loves to play with cellular phones. On a field trip to the zoo, a teacher uses her cell phone to take a picture of her students. Matt snatches the device from the teacher's hands and begins pressing buttons. When the teacher tries to retrieve her cell phone, Matt pushes her away forcibly.*

Arora (2012) defines perseveration as the “repetition of actions, verbalizations and interacting with objects in an alternative manner” (p. 799). In many cases, perseveration is a means to control high levels of anxiety or sensory input (Reese, Richman, Zarcone & Zarcone, 2003; Willis, 2009). As illustrated in Vignette #4, perseverative interests are often major stimuli of disruptive classroom behavior for students with ASD (Reese et al., 2003). Controlling impulses can prove particularly overwhelming for youth with ASD who are struggling to self-monitor their behaviors and thought patterns (Saulnier & Ventola, 2012; Stahl & Pry, 2005).

### **Quality of Participant Responses to Open-Ended Vignette Survey**

The quality of participant responses was evaluated with a researcher-designed rubric. The rubric was prepared with the input of five experts with extensive experience working with students with ASD. Each item response was evaluated as advanced, proficient, basic, or no response. *Advanced* responses were valued as 3, *proficient* = 2, *basic* = 1, and *no response* = 0. In addition, survey responses were analyzed according to item foci, learning goals, resources, and strategies to support students with ASD. The organization of responses was as follows: learning goals, item numbers 1, 4, 7 and 10 resources, item numbers 2, 5, 8 and 11, and strategies, item numbers 3, 6, 9 and 12.

Goal responses with an *advanced* rating included three major elements, observable tasks or skills, measureable outcomes, and specific attention to both the immediate and underlying challenges described in the vignette. For resources, a rating of *advanced* required participants to suggest resources which were specific and appropriate, commonly available in inclusive classrooms, and thoroughly descriptive. Finally, strategies with an *advanced* rating addressed the multiple challenges illustrated in the vignette and described the purpose of the suggested strategies. Criteria for *No Response*, *Basic*, and *Proficient* score ratings are displayed in Table 7.

Table 7

*Researcher-Developed Rubric for Open-Ended Vignette Survey Responses*

	<i>No Response</i> 0	<i>Basic</i> 1	<i>Proficient</i> 2	<i>Advanced</i> 3
Learning Goal	No response or an unrelated response is provided.	Learning goal provided is general and not observable.	Learning goal provided is observable and addresses the immediate and underlying problem in the vignette.	Learning goal is observable and addresses both immediate and underlying challenges. Measureable outcomes are also included.
Resources	No response or an unrelated response is provided.	Resources may be appropriate, but are stated generally. Resources are unavailable or inaccessible in inclusive classrooms.	Resources suggested are specific and appropriate. Resources are available in inclusive classrooms.	Resources suggested are specific and appropriate, and commonly available in inclusive classrooms. The purpose of each resource is described.
Strategies	No response or an unrelated response is provided.	Strategies suggested may be appropriate, but are not descriptive.	Strategies are described with some detail. Strategies address the immediate challenge in the vignette only.	Strategies offered address the immediate and underlying challenges in the vignette, and are described thoroughly.

Table 8 illustrates the mean scores and standard deviation for each collection of items in each vignette sequence. Table 9 shows the mean and standard deviation for each item foci. Both tables indicate that the means of participant responses were between basic and proficient scores.



Table 8

*Quality of Participant Response to Vignette Sequences*

Vignette	Mean	Std. Dev.
1	1.97	0.63
2	1.80	0.69
3	1.45	0.58
4	1.39	0.65

*Note.* 0 = No Response, 1 = Basic, 2 = Proficient, 3 = Advanced

Table 9

*Quality of Participant Responses with Respect to Item Focus*

Item Focus	Mean	Std. Dev.
Goal	1.54	0.48
Resource	1.51	0.58
Strategy	1.91	0.59

*Note.* 0= No Response, 1 = Basic, 2 = Proficient, 3 = Advanced

**Types of Learning Goals Set in Response to Vignette Scenarios**

In response to each vignette, participants were asked to provide a learning goal to address the challenge described in the scenario. Because the vignettes concentrated on a variety of classroom concerns commonly experienced in inclusive ASD classrooms, learning goals included academic, social, and behavioral skills. Such multidisciplinary goal-setting is imperative to maximizing access to quality education for students with special needs (Obiakor, 2011).

### **Vignette #1: A Student Struggles with Reading Comprehension Skills**

Reading comprehension goals for students with ASD must consider common weaknesses in their cognitive processing (Carnahan et al., 2011). Because students with ASD struggle to understand the perspectives of others (Carnahan et. al, 2011), goals associated with referencing prior knowledge or experience are important to construct text understanding (O’Conner & Klien, 2004; Whalon & Hanline, 2008). Additionally, intense concentration on details and poor self-monitoring skills can be remediated through goals that promote summarizing, predicting, and clarifying text (Gately, 2008; Whalon & Hanline, 2008).

As outlined above, researched-based, comprehension-building strategies were the focus of the goals many participants (35%) set in response to this vignette. However, only a small percentage (9%) of respondents provided a goal which suggested building comprehension through an explicit strategy with a measureable outcome. In contrast, the vast majority of respondents (53%) simply stated that James’ learning goal should be to increase his comprehension. One respondent did not address this item. Table 10 depicts an analysis of the learning goals participants established in this case.

Table 10

*Participants' Reported Goals for Student with ASD Described in Vignette #1(N = 34)*

Goal	%
Increase Comprehension	53
Use Comprehension Strategy	
Identify Story Elements	12
Retell or Summarize Text	9
Highlight/Underline Text	9
Take Notes of Text	3
Identify Main Idea	3
Use Comprehension Strategy with Measurable Outcome	9
No Response	3

*Note.* Total percentages equal greater than 100 because of rounding.

The majority of participants (53%) generally stated that the goal for the student in Vignette #1 should be to increase his comprehension. This idea was expressed in a number of different ways:

- “Increase comprehension skills”
- “Improve comprehension ability”
- “Gain comprehension skills”
- “Raise comprehension ability”
- “Student will comprehend what he reads.”

Such responses indicate that participants were aware of deficits in the student's comprehension. However, these responses were general, unobservable, and difficult to measure.

The second largest percentage of respondents (35%) set a goal for the student based on attaining a specific comprehension skill. The incorporation of these skills made the goal observable. The participants suggested goals with specific comprehension-building strategies:

- “Given a text, James will identify characters, setting, and plot.”
- “James will read a section and write a summary.”
- “James will describe the main idea of the story.”
- “James will read a passage and take notes on story structure.”
- “Read small passages and underline elements of story structure.”
- “Be able to read a grade-level text and retell plot.

The varied responses from the respondents suggest that participants were aware of methods to address the immediate problem (improving comprehension) as well as the underlying problem (building self-monitoring skills while reading).

The smallest percentage of respondents (9%) suggested outcomes with both a specific strategy and a measurable outcome. While a specific strategy facilitates the observation of progress, a measurable outcome explicitly defines how progress will be measured. These responses stressed different strategy ideas and measurable outcomes:

- “When reading grade level text, James will correctly underline the responses to 3 out of 4 comprehension questions.”

- “James will read and summarize a text stating at least three story elements.”
- “James will respond to basic questions correctly 9 out of 10 times after reading two sentences of a passage at a time.”

### **Vignette #2: A Student Perseverates on a Preferred Topic of Conversation**

In school settings, effective communication is critical to establishing peer relationships (Koegel, Matos-Fredeeen, Lang, & Koegel, 2012). In order to be part of a community of learners, students with ASD must have a means to engage in effective conversation with peers (Notbohm & Zysk, 2010). However, students with ASD who perseverate on topics of conversation fail to understand the role social context plays in communication (Cohen, 2006). Accordingly, goals for these students should focus on developing skills to initiate and sustain conversation with others (Hart & Whalon, 2008). Such goals could focus on the following: reading facial cues, asking appropriate questions, taking turns, and providing appropriate feedback (Notbohm & Zysk, 2010).

Many participants (33%) set a goal of using one of these social skills strategies to reduce Michael’s comments about baseball. Nonetheless, the most common response (44%) to this scenario was for the student to reduce his baseball comments. In this scenario, several participants (12%) paired a social skills strategy with a measurable outcome. However, an equal percentage provided either no response (3%) or an unrelated response (9%). Table 11 displays the analysis of reported goals for the second vignette.

Table 11

*Participants' Reported Goals for Student with ASD Described in Vignette #2(N = 34)*

Goal	%
Reduce Baseball Comments	44
Use Social Skills Strategy	
Let Others Talk	15
Talk About Peers' Interest	9
Improve Listening Skills	6
Apply Turn-Taking Skills	3
Use Social Skills Strategy with Measurable Outcome	12
Unrelated Response	9
No Response	3

*Note.* Total percentages equal greater than 100 because of rounding.

Most survey participants were aware that the students' perseveration on baseball facts at lunch was the most immediate challenge in this vignette. Consequently, the largest percentage of participants addressed this concern with a goal for the student to reduce his baseball comments during lunch. Examples of this goal provided by respondents are stated below:

- "Reduce intensity of baseball comments"
- "Not talk about baseball everyday"
- "Limit baseball talking"
- "Stop talking about baseball so much"

While reducing baseball comments could be part of an appropriate goal for the student in the vignette, on its own this goal is too general to fully address the described challenge.

Another significant percentage of participants (33%) provided a goal of improving a social skill as a means of reducing baseball comments. Respondents suggested several social skill strategies:

- “Michael will talk less about baseball and let others talk about their interests more.”
- “Michael will talk about peers’ interests without mention of baseball topic.”
- “Increase time Michael spends listening to others.”
- “Michael will use turn-taking to share talking time at lunch.”

These responses take into consideration the underlying challenge in this vignette. Not only did the student need to reduce his perseveration on baseball, but also improve his understanding of conversational structure and rules.

Some participants (12%) included a measurable outcome in the goal for the student in the vignette. Such goals incorporated building conversational skills and reducing preoccupation with baseball topics. Additionally, the measurable outcome provided a means for monitoring goal acquisition. These reported goals with measureable outcomes were suggested:

- “Using active listening techniques, Michael will ask at least two questions about his peers’ interests each lunch period.”
- “Michael will respond to others’ remarks without bringing up baseball facts 3 out of 5 times during lunch.”

- “Michael will use a timer to spend 3-5 minutes only talking about baseball at lunch for 4 out of 5 days.”
- During lunch, Michael will state three or less facts about baseball.”

### **Vignette #3: A Student Fails to Complete Classroom Assignment**

Task completion is critical to establishing and maintaining functional skill sets for students with ASD (Mechling et al., 2006). Students with disabilities often build skills for independent living and future employment through successful engagement and participation in classroom assignments (Hume & Reynolds, 2010; Iovannone et al., 2003; Mechling et al., 2006). Weak cognitive planning, however, inhibits focus on non-preferred activities and stimulates impulsive behaviors, as illustrated in this vignette. Consequently, ideal goals for the student described in Vignette #3 should focus primarily on establishing motivation to complete classroom tasks.

Yet, respondents to this item viewed the challenge as entirely a behavioral issue. As such, slightly less than half of participants (41%) believed that a goal to eliminate outburst and/or aggressive behavior should be established. The majority of responses, however, suggested a particular behavioral strategy to address the child’s inappropriate behavior. One participant offered a behavioral strategy with a measurable outcome. Two participants did not submit a response to this item. Table 12 reviews the reported goals for Vignette #3.



Table 12

*Participants' Reported Goals for Student with ASD Described in Vignette #3(N = 34)*

Goal	%
Eliminate Outbursts	41
Use Behavioral Strategy	
Learn to Accept Consequences	18
Self-Regulate without Reinforcement	15
Express Anger Appropriately	9
Use Behavioral Strategy with Measurable Outcome	3
Unrelated Response	6
No Response	9

*Note.* Total percentages equal greater than 100 because of rounding.

Given the serious nature of the scenario described in Vignette #3, many participants (41%) suggested a goal to eliminate emotional outbursts. These goals were very generally stated without details:

- “Improve behavior”
- “Control outbursts when not getting her way”
- “Help her stay calm”
- “Help the student use self-control”

Due to the broad nature of these goals, it was difficult to determine their overall appropriateness. Additionally, these goals would be challenging to maintain in the classroom as they can be neither measured nor observed.

The majority of respondents (42%) offered a behavioral strategy as a means to control the students' outbursts. These suggestions were diverse and appeared varied in purpose. For example, some participants believed that Julie should learn consequences for her behavior and build coping skills. Others thought she should learn to self-regulate her behavior in class and complete assignments without the promise of reward. It was also suggested that Julie find alternative ways to express her anger. Below are samples of these goals based on behavioral strategy:

- "Have Julie deal with her anger in a different way."
- "Help student understand she gets rewards and consequences."
- "Julie will complete school work without getting rewards."

While somewhat more detailed than the initial set of responses, these goals would be difficult to observe or measure as well. Furthermore, these goals do not address Julie's difficulty with completing work tasks directly, the underlying challenge in this vignette.

One participant suggested a goal with a measurable outcome that considered the fundamental challenge of the vignette. The respondent suggested this goal: "Throughout the school day, Julie will receive 4 or less tallies for not completing classwork."

Certainly, this goal encourages the student to self-monitor her behavior, and includes evidence that is observable and measurable. Accordingly, this goal could help Julie complete classroom tasks.

#### **Vignette #4: A Student Perseverates on an Object**

Goals for addressing object perseveration for young students with ASD should look beyond resulting disrupting behavior to consider the stimuli within the classroom setting (Reese et al., 2003). Perseverative focus on an object is frequently a result of

feelings of stress stemming from abundant social interaction or new surroundings (Willis, 2009). When students are taught skills to adapt to these situations effectively, rigid thinking and behaviors can be reduced (Reese et al., 2003; Saulnier & Ventola, 2012). Accordingly, goals which address object perseveration focus on developing communication skills to express needs and wants in high-anxiety situations (Reese et al, 2003). Moreover, goals should also familiarize students with effective coping mechanisms (Schopler, Mesibov, & Hearsey, 1995).

The greatest number of participants (41%) believed that the goal for the student in Vignette #4 should be to respect the property of others. A significant proportion of respondents (35%) decided that the goal for Matt should be to control his aggression toward others. The smallest percentage of participants (6%) set a goal focused on compliance toward teacher directives. It is interesting to note that this item received the greatest percentage (15%) of non-response. In addition, one individual gave an unrelated response to this item. Table 13 displays the reported goals for the final vignette.

Table 13

*Participants' Reported Goals for Student with ASD Described in Vignette #4(N = 34)*

Goal	%
Respect Others' Property	41
Control Aggression	35
Comply with Teacher Requests	6
Unrelated Response	3
No Response	15

Goals for previous vignettes varied in their level of specificity. Conversely, the goals participants determined for Vignette #4 were almost entirely vague. Descriptions of how the goal would be accomplished or how progress would be measured was absent from every participant response. The following are examples of reported goals for Vignette #4:

- “Eliminate aggressive behavior.”
- “Comply with teacher requests.”
- “Student needs to keep a boundary with others.”

The major distinction among the reported goals for Vignette #4 is the particular challenge focus the participants addressed. In Vignette #4, controlling the aggression of the student is the most immediate challenge. It is critical that the child understand that his behavior could be a threat to his own and others’ safety. However, object perseveration is the major catalyst to the problem behavior. While participants addressed the most immediate problem, many selected different goal foci. The largest percentage of respondents (41%) focused their goals on respecting the property of others. Only a slightly lower percentage of respondents (35%) set a goal of controlling the child’s aggression. Compliance to teacher directives, a goal of 6% of participants was aimed at the immediate challenge in this vignette also.

### **Common Themes among Reported Learning Goals**

Despite the diversity among the reported goals for the students described in the vignette sequences, common themes were apparent. First, proposed goals were general in nature, with few criteria to measure progress. Second, the early childhood preservice

educators offered goals which concentrated on addressing the most immediate need in the scenario.

**General focus.** As a whole, reported goals in this survey were very general in nature. Participants seemed to be aware of the major challenge present in the vignette, and provided a goal to address that single deficit. Although the vast majority of participants provided a goal response, most responses were too broad to be implemented in the classroom. Observable tasks and measurable outcomes are critical elements in goal-setting as they provide documented evidence of progress toward skill acquisition. Goals with both observable tasks and measurable outcomes comprised 12% or less of reported responses in each vignette.

**Concentration on most immediate concern.** The majority of goals reported in this survey focused on the most immediate challenge. In each vignette, the most immediate challenge directly impeded academic progress, functional social interaction, or safety for self or others. Certainly, addressing the immediate challenge is necessary to effective classroom management. However, the underlying challenge supplied the motivation for the more overt classroom behaviors described in each vignette. Consequently, goals for students with ASD need to attend to both the immediate and underlying challenges present in the classroom.

### **Types of Resources Suggested to Address Vignette Scenarios**

After identifying an appropriate learning goal for the situation described in the vignette, participants were asked to suggest resources which could help meet the needs of the student. The ability to identify appropriate resources to support students with ASD is crucial to effective teaching, especially in light of growing curricular and professional

pressures (LeBlanc et al., 2009). As many of the challenges described in the vignette were intensive, classroom resources supporting the student and the teacher were relevant responses.

### **Vignette #1: A Student Struggles with Reading Comprehension Skills**

Resources to support students with ASD struggling with reading comprehension should access both the strengths and weaknesses associated with the disability (Randi et al., 2010). For instance, students with ASD, who are frequently visual learners, can benefit from graphic organizers which showcase story structure through shape and picture (Gately, 2008). Peers can also be an important resource for students in this situation (Whalon & Hanline, 2008). Reading comprehension and social interaction have much in common; both require participants understand visual cues to produce meaning (Gately, 2008; Randi et al., 2010; Whalon & Hanline, 2008). Accordingly, questioning and responding to text with peers strengthens the social reasoning skills that advance reading comprehension (Randi et al., 2010; Whalon & Hanline, 2008).

Grade level text was the most dominant resource suggested by participants. In fact, over half of respondents (56%) recommended printed text. Additionally, a large percentage of participants (26%) suggested interactive technology, such as ipods or electronic tablets. As endorsed by the research, graphic organizers were offered as a resource by a moderate percentage of participants (24%). Even lower than the percentage of participants recommending skill worksheets (9%), the smallest percentage of respondents (6%) suggested peer tutors. Two participants did not respond to this item. Table 14 reviews the reported resources for Vignette #1.

Table 14

*Participants' Reported Resources for Student with ASD Described in Vignette #1(N =34)*

Resource	%
Printed Text	56
Interactive Technology	26
Graphic Organizers	24
Worksheets	9
Peer Tutors	6
No Response	6

*Note.* Total is greater than 100 percent because many participants listed multiple resources.

Generally, respondents to this item provided resource suggestions that would be appropriate to the given circumstances. Certainly, a student struggling with reading comprehension would benefit from printed materials. Accordingly, over half of the participants (56%) suggested either grade level or remedial level text. Others suggested responses could be appropriate in the given scenario; however, the majority of participants provided a broad list of resources without offering specific examples or description of use. As such, the reported resources should be assumed appropriate although actual relevance cannot be determined.

For this item, all reported resources would be readily available in a typical inclusive classroom. Printed materials and computers are widely accessible in schools, and worksheets and graphic organizers can be teacher created or downloaded from websites. Certainly, typically-developing peers are essential to inclusive classrooms. These students could be taught to serve as tutors for struggling students with ASD.

## **Vignette #2: A Student Perseverates on a Preferred Topic of Conversation**

When an individual with ASD perseverates on a preferred topic, visual and verbal prompts may help improve conversational skills (Rehfeldt & Chambers, 2003).

Resources which provide these prompts are especially valuable in inclusive classrooms where students with ASD must engage with others to progress in skills (Koegel et al., 2012). Social scripts, which provide written or visual prompts to guide conversations between students with ASD and their typically-developing peers, are one example of this type of resource. Peers are also a valuable resource, as peer-mediated interventions can be tremendously successful in developing conversational skills in students with ASD (Owen-DeSchryver, Carr, & Cale, 2008).

The vast majority of participants suggested resources that would assist the student in exploring new areas of interest. Many participants (29%) believed that topic cards with information about novel subjects would help address this issue. Similarly, participants advised that technology (18%) and writing journals (9%) would help explore new interests as well. Other suggested resources were meant to support the students' conversational skills. Several respondents (15%) recommended Social Stories to help Michael rehearse conversations with peers while a comparable percentage (12%) endorsed baseball paraphernalia as a way to motivate other students to share Michael's baseball interest. Realizing the role of other students in addressing this challenge, some participants (9%) determine peers to be a value resource. Six participants did not respond to this item. Table 15 illustrates the resources reported for Vignette #2.



Table 15

*Participants' Reported Resources for Student with ASD Described in Vignette #2(N =34)*

Resource	%
Topic Cards	29
Websites/Technology	18
Social Stories	15
Baseball Paraphernalia	12
Writing Journals	9
Peer Models	6
No Response	18

*Note.* Total is greater than 100 percent because many participants listed multiple resources.

Given the circumstances of this vignette, the resources reported would be appropriate. Some respondents provided an explanation for the resource they suggested, offering insight as to how the resource would be used to address the vignette challenge.

The following are examples of these explanations:

- “I could use baseball cards to help all the students learn more about baseball so they would talk to Michael more.”
- “A list of possible topics and facts to help him talk about other things.”
- “Using practice scenarios to help the student see how to better talk with his peers.”
- “I would have Michael use technology to brainstorm new topics and ideas.”

Furthermore, the general accessibility of the reported resources also demonstrates their appropriateness. Each resource would be readily available in a typical inclusive classroom or could be accessed from an internet source.

### **Vignette #3: A Student Fails to Complete a Class Assignment**

Motivating students with ASD to complete tasks should be self-directed (Hume & Reynold, 2010), and success-driven (Perrin & Neef, 2012). When activities are organized into smaller challenges, students learn to manage work independently and visualize tasks in manageable chunks (Notbohm & Zysk, 2010). Two resources which prompt these skills are visual schedules and work systems. Visual schedules organize the school day by periods of instruction (i.e. recess, art, math, etc.; Notbohm & Zysk, 2010). In contrast, work systems are visual displays that inform students of the individual segments of task (Hume & Reynolds, 2010). These resources would be appropriate choices for this vignette challenge as both can reduce anxiety about routines and help students plan for transitioning between preferred and non-preferred activities (Hume & Reynolds, 2010).

However, because the majority of participants (41%) set a goal to eliminate outbursts rather than motivate task completion, half of the participants suggested a behavior or rule chart as an appropriate resource in this scenario. Another resource provided by a significant percentage of respondents (26%) was interactive websites to serve as motivation to complete classwork. Smaller proportions of participants offered Social Stories (6%) or school counseling (3%) as helpful resources in this situation. Large percentages of unrelated responses (12%) and unanswered responses (15%) were associated with this item. Table 16 displays the reported resources for Vignette #3.

Table 16

*Participants' Reported Resources for Student with ASD Described in Vignette #3(N =34)*

Resource	%
Behavior/Rule Chart	50
Computer/Interactive Technology	26
Social Stories	6
School Counselor	3
Unrelated Response	12
None	15

*Note.* Total is greater than 100 percent because many participants listed multiple resources.

Similar to goals established for this item, the recommended resources concentrated on the most immediate concern, controlling the student's outburst. Although the majority of participants (50%) suggested rule or behavior charts, some respondents saw a distinction between these two resources. Some participants believed that a rule chart would help remind the student of classroom procedures while a behavior chart with tokens would help her visualize progress toward a reward. Other respondents who offered technology as a resource viewed it as a way to encourage the student to complete tasks. The purpose of the remaining resources were not described, however, given the circumstances of the vignette, they can be assumed appropriate. In addition, the resources reported for Vignette #3 are typically available in inclusive classrooms.

#### **Vignette #4: A Student Perseverates on an Object**

Typical motivation for object perseveration is anxiety due to new environments or expectations (Schopler et al., 1995; Willis, 2009). As a result, resources to address this

behavior should offer students the means to reduce feelings of emotional and physical stress (Reese et al., 2003). One example is a visual schedule which can lessen anxiety about the daily class schedule by providing visual representation of classroom routines (Ntbohn & Zysk, 2010). Additionally, resources designed to assist the student in self-calming or relaxing therapy, such as blankets, pillows, sensory toys, or weighted vests, can address anxiety caused by sensory over-stimulation (Willis, 2009).

Table 17 displays the reported resources for Vignette #4. Unlike any other item on the survey, the majority of participants (35%) did not submit a response. Many respondents with recommendations focused on rewarding the student for appropriate behavior. As such, the second largest proportion of respondents (30%) believed that a token incentive (i.e. cell phone, candy, stickers, etc.) would motivate appropriate behavior. Equal percentages of participants (18%) suggested either Social Stories to practice showing respect for others' property or administrative leadership to help address the behavioral concerns.

Table 17

*Participants' Reported Resources for Student with ASD Described in Vignette #4 (N=34)*

Resource	%
Token Reinforcements/ Cell Phone	30
Social Stories	18
Administrators	18
Rule Chart	6
No Response	35

*Note.* Total is greater than 100 percent because many participants listed multiple resources.

Specific descriptions of the resources reported for Vignette #4 were absent or vague. However, using the context of the entire vignette sequence, including suggested goals and strategies, the reported resources could be appropriate in the described situation. Interestingly, this survey item alone had a significant percentage of participants (18%) who reported a personnel resource. Administrative leaders, such as school psychologists, counselors, and principals, were viewed as a critical resource in addressing the student's behavior. Nevertheless, this resource, unlike the others provided by respondents, would not necessarily be accessible in this particular scenario as the setting of vignette is a field trip to the zoo.

### **Common Themes among Reported Resources**

Generally, reported resources were appropriate and readily accessible in inclusive classrooms. However, the greatest percentages of both *no response* and *unrelated response* were associated with resource items. These responses combined composed increasing percentages for Vignettes 1-3, 6%, 18%, and 27% respectively. Furthermore,

no response comprised the majority percentage (35%) for Vignette #4. Nonetheless, common themes were present among the reported resources.

**Student-centered resources.** Reported resources in the vignette survey were directed entirely at assisting the student. A diverse collection of classroom tools, technology, and school personnel was suggested to address the student concerns described in the vignettes, however, none of these resources was recommended to strengthen the knowledge and skills of the preservice educators themselves. This particular point is significant as *no response* and *unrelated response* in this particular category seem to suggest that identifying and applying resources to problem-solve challenges in ASD inclusive classrooms could be a weakness for these novice educators.

**Application of resources.** Certainly, participants offered several resources in response to the described situations in each vignette. However, details on how the resources would be used were ambiguous in numerous cases. This was especially true for interactive technology resources. Participants cited some type of interactive technology as a resource in each vignette sequence, but did not consistently describe how these resources would address the student challenge. The absence of this element of purpose is noteworthy because appropriate use of resources is critical to effective strategy implementation (LeBlanc et al., 2009)

### **Types of Strategies Suggested to Address Vignette Scenarios**

Because the management of ASD is dependent on effective educational interventions, knowledge and implementation of various strategies is necessary to support students with ASD (Ashwell, 2009; Doris, 2012). Moreover, these strategies must be inclusive of academic, behavioral, and social needs (Ashwell, 2009). As a final task,

participants were asked to offer strategies to assist the child in the scenario overcome the described challenge. Each vignette described both an immediate and underlying challenge, and consequently, more than one strategy was most likely appropriate.

### **Vignette #1: A Student Struggling with Reading Comprehension Skills**

Strategies to support reading comprehension for students with ASD should connect learning goals and resources in a meaningful way. Both typical students and students with ASD benefit when they are afforded frequent opportunities to discuss and question story structure with teachers or peers (Whalon & Hanline, 2008). Further, priming techniques can activate prior knowledge, developing meaning and understanding (Gately, 2008). Highly ASD-specialized strategies, such as anaphoric cueing, can also improve reading comprehension. Supported by an intense focus on details often exhibited by students with ASD, anaphoric cueing, teaches students to monitor understanding through linking pronoun referents to significant elements of the story (O’Conner and Klein, 2004).

The majority of respondents (41%) would apply specific reading comprehension strategies to address the students’ limited comprehension skills. Although some of these strategies could be considered ASD-specific, others were general interventions. Other preservice educators believed that minimizing the size of the instructional group would be helpful. In fact, significant percentages of participants suggested either a small group setting (29%) or individual instruction (18%) for the student. A third group of respondents (15%) recommended varying the type of print materials offered to the student. One student did not provide a response to this item. Table 18 reviews the reported strategies of the participants.

Table 18

*Participants' Reported Strategies for Student with ASD Described in Vignette #1 (N=34)*

Strategy	%
Reading Comprehension Strategies	41
Small Group Instruction	29
Individual Instruction	18
Varied Print Materials	15
No Response	3

*Note.* Total is greater than 100 percent because many participants listed multiple resources.

Although reading comprehension strategies were the most frequent response to this item, participants offered multiple approaches. Several participants believed that strategies with a visual component, such as graphic organizers, picture drawing, or passage highlighting would be beneficial while others suggested techniques that emphasized self-monitoring skills, such as oral summarizing, partner story retells, or repeated readings. The following are selected samples of the reading comprehension strategies respondents provided:

- “Help make connections to the story so he can recall details in the passage.”
- “Summarize after each page or two instead of at the end of the story.”
- “I would use repeated readings and teach the child to highlight important information (details) in the story.”



- “Have James make advanced organizers as he reads to identify key points. Have James read. Tape record it and allow him to play it back to answer questions.”

It is interesting to note that some respondents paired these comprehension strategies with individualized or small group instruction. However, many respondents viewed instructional group size as a strategy in of itself, and did not provided details on how they would utilize these smaller class settings to help the student described in the vignette progress. Likewise, participants who promoted diverse print materials did not describe how these resources would be implemented as an instructional strategy.

### **Vignette #2: A Student Perseverating on a Preferred Topic of Conversation**

Strategies to address topic perseveration need the support of not only teachers, but classroom peers as well (Owen-Deschryver et al., 2008). Peer mediated interventions, such as modeling or role play, can be helpful ways to teach students with ASD to interact through observation and rehearsal of communication skills (Hart & Whalon, 2008; Koegel et al., 2012). Peers can also be trained to prompt students with ASD with questions and requests that will help initiate conversation (Owen-DeSchryver et al., 2008). Teacher-directed strategies should provide multiple opportunities to practice conversation within and across content areas and should make access to needs and wants in the classroom contingent upon functional requests (Koegel et al., 2012).

Table 19 displays the reported strategies for Vignette #2. Role play was the most frequent strategy response given by participants (38%). Many respondents viewed this strategy as a means to allow the student to rehearse conversational skills in a safe environment. Counseling the student, using signs or signals to encourage turn-taking

skills, and developing new interests were each shared by 15% of the sample population. Social stories were suggested by 12% of respondents while peer modeling and journaling were each recommended by 6% of the sample population. Two participants did not respond to this survey item.

Table 19

*Participants' Reported Strategies for Student with ASD Described in Vignette #2 (N=34)*

Strategy	%
Role Play	38
Teacher Counseling	15
Conversational Signs/Signals	15
Development of New Interests	15
Social Stories	12
Peer Modeling	6
Journaling	6
No Response	6

*Note.* Total is greater than 100 percent because many participants listed multiple strategies.

Of the four scenarios in the survey, Vignette #2 solicited the most diverse strategy types among participants. Additionally, the strategies are varied in how they engage the student described in the scenario. Rehearsal of conversational skills is addressed through role play, Social Stories, conversational signs/signals, journaling, and modeling. These strategies involve the student in building conversational skills through kinesthetic, audio, and visual learning styles. The following examples highlight some of the learning styles captured in reported strategies:

- “Use show-and-tell to help the student see interests of his peers.  
Encourage interest in new toys/activities.”
- “Use visual symbols to prompt the student when to start talking, ask questions, give others a turn to talk, etc.”
- “Have a mock conversation and point out facial expressions or body language that expresses boredom.”
- “Supply the student with a topic card of his choice (other than baseball) and allow him time to talk about the chosen topic.”
- “Using social stories, teach Michael how to listen to others’ interest and ask questions.”

### **Vignette#3: A Student Exhibits Anger/Frustration Inappropriately**

Several strategies could be appropriate for Vignette #3. Depending on the needs of the individual child, these interventions could be implemented simultaneously or individually. First, to motivate student compliance and task completion, guidelines and expectations of performance must be clear (Bousein, Tiger, & Fisher, 2008). Second, students with ASD should be offered choices within an individual task whenever possible (Moes, 1998; Ulke-Kurkcuoglu & Kircaali-Iftar, 2010). Such choices could vary the order, pace, length, or support with of a task (Moes, 1998). Third, students with ASD should be offered models of appropriate behaviors (Rayner, 2010). For instance, video modeling, which displays peers or the child himself engaged in the targeted skill, supports a student with ASD by acting as a form of behavioral priming (Rayner, 2010).

In Vignette #3, the largest percentage (59%) of participants offered a behavioral management strategy as a means to address the student’s described behavior.

Respondents (21%) also suggested stress reduction techniques to calm the students and to help express her anger more appropriately. The use of peers to model appropriate behavior or to reinforce complex classwork was also offered as potential strategy. Both techniques received an equal percentage of participant validation (9%). Four respondents did not provide an answer to this item. Table 20 illustrates the reported strategies in Vignette #3.

Table 20

*Participants' Reported Strategies for Student with ASD Described in Vignette #3 (N=34)*

Strategy	%
Behavioral Management Techniques	59
Stress Reduction Techniques	21
Peer Modeling/Peer Tutoring	9
Small Group Work	9
No Response	12

*Note.* Total is greater than 100 percent because many participants listed multiple strategies.

As stated previously, the immediate challenge in this vignette was to control the child's aggressive behavior. The majority of strategies addressed this concern. In particular, the largest percentage of participants recommended behavior management techniques (59%), suggesting they had some understanding of the most urgent challenge. Specific examples of these techniques were varied:

- "I would make sure the student knew the rules and understood the expected behavior."
- "Explain the rules and consequences."

- “Put in a reward system for controlling behaviors and asking for help.”
- “Julie can earn tokens for staying calm. Three tokens earn extra computer time.”

However, the more fundamental challenge of this vignette was helping the student understand her work schedule and transition from activities appropriately. Participants did not suggest strategies directly related to addressing this issue.

#### **Vignette #4: A Student Perseverates on an Object**

Students with ASD communicate feelings of discomfort through perseveration on objects and behaviors (Saulnier & Ventola, 2012). Strategies to address object perseveration should help students with ASD learn to seek security in their classroom environments (Willis, 2009). However, for these techniques to be effective, teachers must be aware of the stimuli that promote anxiety for individual students (Arora, 2012; Reese et al., 2003). An Antecedent-Behavior-Consequences (A-B-C) chart can help teachers not only map out the source of anxiety, but also plan for effective intervention (Arora, 2012). Interventions for inclusive classrooms include teaching students relaxation techniques and mechanisms to cope with stress (Schopler et al., 1995). Establishing and maintaining expected routines is also crucial in helping students limit feelings of stress (Hotbohm & Zysk, 2010).

Table 21 displays the reported strategies for Vignette #4. Similar to the previous scenario, behavioral management techniques were suggested by the highest percentage of participants (47%). The second highest percentage of respondents recommended referring the student to an administrative leader (i.e. principal, school counselor, or school psychologist). Several participants (17%) agreed that assigning punishment

would be an effective strategy while a slight smaller percentage (15%) of respondents would use role play to teach the student to respect the space and property of others. Five participants did not respond to this item.

Table 21

*Participants' Reported Strategies for Student with ASD Described in Vignette #4 (N=34)*

Strategy	%
Behavioral Management Techniques	47
Refer to Administrator	18
Punishment	17
Role Play with Peers	12
No Response	17

*Note.* Total is greater than 100 percent because many participants listed multiple strategies.

Certainly, assigning punishment (17%) and referring the student to administration (18%) are strategies directed at controlling aggressive student behavior, which is the immediate challenge in the scenario. In contrast, role play, a strategy reported by 12% of the population, attends to the underlying challenge of the vignette, teaching respect for the space and property of others. The majority of participants (47%) believed that behavioral management techniques would best address the challenges described in the vignette. Such techniques were expressed various ways:

- “Use cell phone as a reward for not touching the teacher’s phone.”
- “Teach Matt to keep his hands to himself. Show him what that looks like and how to use manners to ask for things.”

- “I would encourage personal space with reminders. Give rewards for appropriate behavior.”
- Make a behavior chart with reward system for keeping his hands to himself.”

### **Common Themes among Reported Strategies**

Of the three item foci, respondents provided the strongest responses to strategies items. Not only were varied responses provided, but explanations of strategies were described. These data seem to suggest that participants felt the most comfortable addressing the concerns through actual student interaction, rather than goal-setting or resource planning. Common themes among the reported strategies focused on misperceptions of classroom interventions and limited use of ASD-specific student strategies.

**Misperceptions of classroom strategy.** In some cases, participant responses were more characteristic of classroom resources or natural consequences rather than strategies. For instance, in Vignette #1 varied print materials and small/individual group settings were reported as strategies to help promote reading comprehension. On their own, these suggestions are not actual classroom interventions. More specific information on how these resources address the vignette challenge would better emphasize the strategy suggested. Additionally, referring a student to the school administrator, a common response in Vignette #4, does not constitute as instructional strategy to address behavior.

**Limited use of ASD-specific strategies.** Many of the actual strategies participants reported were general classroom strategies rather than interventions with

proven strengths for students with ASD. This is not to propose, however, that these strategies would not be effective with students with ASD, but rather to suggest a limited knowledge of ASD-specific interventions among participants. In fact, the use of social stories for skill rehearsal was the only ASD-specific strategy respondents referenced. Given the common nature of many of the challenges described in the vignettes, several ASD-specific strategies could be appropriate.

### **Summary of Initial Phase of Research**

The initial phase of this research consisted of two parts: (1) a Likert-scale survey, the short form of the *Teacher's Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001), and (2) an open-ended questions based on a series of short vignettes describing common social, behavioral, and academic challenges of students with ASD in inclusive classrooms. Collected data from these sources were analyzed through quantitative and qualitative methods.

The *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) was used to measure the participants' teacher self-efficacy with respect to three factors, student engagement, instructional practices, and classroom management. Individual item analysis indicated that the majority of respondents maintained high levels of perceived self-efficacy for each item. Descriptive statistics for the three correlated factors identified means of 6.85 for student engagement and instructional practices and a mean of 6.80 for classroom management. Each of these three scores was slightly below the statistically significant score of 7.1 which indicates perceived high teacher self-efficacy.

A researcher-designed rubric evaluated the quality of participant responses to the open-ended vignette survey. Each item response was evaluated as advanced = 3,



proficient = 2, basic = 1, or no response = 0. Survey responses were analyzed as a vignette sequence as well as according to item foci, learning goals, resources, and strategies. Vignette #1 had the highest mean of 1.97 while Vignette #4 maintained the lowest mean of 1.39. Vignette #3 and #4 indicated means of 1.80 and 1.45, respectively. Quantitative analysis of item foci revealed a mean of 1.54 for reported goals, 1.51 for reported resources, and 1.91 for reported strategies.

In addition, data collected from the open-ended vignette survey were analyzed qualitatively. Organized according to item focus, data were examined for emergent themes. As a whole, reported goals were very general and addressed the most immediate challenge described. The majority of resources suggested by respondents were student-centered with little regard for deficits in teacher knowledge and skills. Reported resources were also vague and offered few details regarding how those resources would be used. Furthermore, participants seemed to misperceive the concept of strategy, indicating resources or tools as intervention techniques. Actual strategies reported tended to be geared toward the general classroom population rather than students with ASD.

Data reported from the initial phase of research focused on addressing the teacher self-efficacy beliefs of preservice early childhood educators and the type of goals, resources, and strategies that these novice educators access to meet the needs of students with ASD in inclusive classrooms. The early childhood educators' perceptions of their overall preparedness to teach students with ASD were examined with greater detail through a series of interviews. Qualitative analysis of these data will be presented in the proceeding sections.

### **Follow-Up Interview Results**

The 34 preservice educators who responded to the surveys in the initial phase of the study were invited to participate in a follow-up telephone interview with the principal researcher. To ensure confidentiality, all of those who were willing to be interviewed as well as those who declined deposited an index card in a secure box in the classroom where participants were solicited. Preservice educators who expressed interest in participating in the follow-up interviews supplied their names, contact telephone numbers, and e-mail and home addresses. Students who declined participation deposited a blank card.

Eight preservice educators indicated an interest in participating in the follow-up interview. An e-mail request was sent to each of these eight preservice educators requesting a meeting date and time for each interview. One participant supplied this information. A second e-mail was sent to the remaining seven preservice educators. This action facilitated another three interviews. Phone calls to the remaining four potential interview candidates resulted in two final interviews. A total of six follow-up interviews were conducted in the second phase of this research. Table 22 describes the results of participant solicitation for follow-up interviews.

Table 22

*Interview Participant Response Results*

	N	%
Follow-up Interview Invitations	34	100
Returned Invitations	8	24
Initial E-mail Acceptance	1	3
Second E-mail Acceptance	3	9
Phone Call Acceptance	2	6
Total Interviews Conducted	6	18

As with the initial phase of research, the second stage of this investigation was not concerned with examining participant demographics. However, basic demographic information was solicited from the participants of the follow-up interview to verify that they met the exact criteria to participate in this study. Specifically, the participants were asked to verify their anticipated graduation date and major. Although interview participants were solicited from all three sites, interviewees represented only two of the research sites. Additionally, all interview participants were female. As participants were interviewed, they were given a participant number. These numbers were assigned in the order that participants were interviewed. In the discussion of the interview results, participants will be referenced by the title “Pre-Educator” and participant number, as in “Pre-Educator 1, Pre-Educator 2,” etc. The demographic data of the interview participants are presented in Table 23.

Table 23

*Demographic Characteristics of Interview Participants (N = 6)*

Characteristic	N	%
Major		
ECE/ELEM ED	4	67
ECE/ SPL ED	2	33
Anticipated Graduation		
2013	4	67
2014	2	33

*Note.* ECE/ELEM ED = dual certification in early childhood education and elementary education, ECE/SPL ED = dual certification in early childhood education and special education

Because different sites were included in this research, personal telephone interviews were conducted by the principal researcher. The interview protocol consisted of a series of nine researcher-developed guiding questions (Appendix C). These guiding questions focused on major elements of teacher preparation highlighted in the literature and were specifically designed to address the research question, “What are the perceptions of preservice early childhood teachers concerning their preparation to address the academic, social, and behavioral needs of students with ASD in inclusive classrooms?”

### **Analysis of Preservice Educators’ Interviews**

Participant interviews were transcribed verbatim, and then coded using the constant comparative method (Glaser, 1967). The most prominent codes were determined first, followed by sub-codes. Emergent codes were organized into common

themes and sub-themes which will be discussed as they pertain to the preservice educators' perceived preparation to address academic, social, and behavioral needs of students with ASD. Preservice educators' references to the identified themes and sub-themes are summarized in Table 24.

### **Concerns with Teacher Training Curricula**

Each of the six participants in the follow-up interviews had exactly two special education courses. However, the respondents' views on the quality of this coursework varied tremendously. Although Pre-Educator 5 felt her undergraduate courses had "just brushed the surface" of special education knowledge, Pre-Educator 6 believed her special education courses were "very informative," and offered "a good academic overview of the issues and practical and useful strategies." Yet, Pre-Educator 6 acknowledged she was unsure how much she "absorbed from the courses" and questioned whether she could use these skills in her future classroom effectively. Likewise, Pre-Educator 3 felt a disconnection between coursework and classroom experiences. "It was difficult for me to see the purpose of my special education courses. Everything was so hypothetical."

Pre-Educator 2 felt the majority of her teacher training courses were focused on teaching students assigned to general education. "The emphasis in my teacher prep was definitely on teaching to the 'average' student. My certification is Early Childhood and Elementary, so special education just wasn't a priority." Pre-Educator 5 noted how limited ASD coursework inspired a very emotional response for her.

I feel unprepared to work with students with ASD, and that makes me feel frustrated sometimes. When I see an Autistic student act out, I'm often asking

myself “Why is this happening?” “What can I do?” “Why wasn’t I prepared to deal with this?”

The relationship between theory and practice was significantly unclear for the interview participants. This finding is not unusual as novice teachers typically struggle to understand the application of coursework before entering the teaching field (Ergul, Baydik, Demir, 2013). Accordingly, additional practicum experience is often a recommendation of evaluative studies of teacher preparation (Ergul et al, 2013, Hendricks, 2011; Leblanc et al., 2009; Taskin-Can, 2011). However, simply adding to the hours of fieldwork is insufficient; instead preservice teaching experiences must integrate knowledge and skills in a way that prepares teachers to address diverse learning needs (Brownwell, Ross, Colon & McCallum; 2005).

### **Deficits in Knowledge and Skills**

All six participants recognized deficits in their basic understanding of ASD and expressed a desire to advance their knowledge in this area, especially as it pertained to their future classrooms. Pre-Educator 5 and Pre-Educator 3 felt their teacher preparation programs had provided a very clinical perspective on ASD. Pre-Educator 5 said she knew “the basics, the basic symptoms and signs [of ASD],” but less about features of the disorder. Pre-Educator 3 felt her personal understanding of ASD could be improved because her current knowledge base was “very textbook-oriented.”

Participants were highly aware of the wide diversity within ASD diagnoses, and felt that the complexity of ASD made building a functional knowledge base difficult. Pre-Educator 2 shared, “with Autism there are so many differences with different

children, and I don't think that I know as much as I probably should on how to work with all children who have Autism." Pre-Educator 4 was in agreement

I think it's just hard to get used to the different case-by-case basis. I think I really need to have more background knowledge about what the child [with ASD] likes and dislikes because sometimes you won't know something that will trigger a child, and you'll do it because it worked with another child, but it just doesn't work with the child you're trying to help.

These responses from interviewees appear to confirm the wide variance in professional standards in ASD training (Scheuermann et al., 2003). Although each of the participants acknowledged some awareness of ASD, none felt that her coursework provided a comprehensive understanding of the disability. Comparative results were reported by Rodriguez et al. (2012) who found that special education teachers lacked ASD-specific knowledge. Often inadequacies in training stem from coursework which fails to offer specialized knowledge (Busby et al., 2003; Scheuermann et al., 2003). Nonetheless, many respondents recognized the wide diversity among diagnoses and the importance of considering student strengths and weaknesses in educational planning.

**Limited knowledge of ASD-specific strategies and resources.** Variability within ASD diagnoses was also acknowledged as a hindrance to appropriate strategy knowledge. Pre-Educator 1 discussed her weaknesses in this area as it pertained to particular characteristics of students with ASD. "I've never come across a completely, non-verbal student [with ASD]. I do think that I would have the ability to work with them, but I think it would be a lot of trial and error." Pre-Educator 4 felt her confidence in meeting the behavioral needs of students with ASD could only be gauged on a child-

by-child basis. “I feel comfortable with everyday behavior problems---talking back, yelling, not following directions, but I’m not sure I am prepared to handle anything dangerous.”

The majority of interview participants felt underprepared to address the behavioral challenges of students with ASD. For instance, Pre-Educator 5 felt overwhelmed with the amount of information on behavioral supports for students with ASD. She stated, “there’s so much about behavioral plans and techniques for helping them [students with ASD] I don’t know.” Similarly, Pre-Educator 3 admitted feeling “lost” when implementing behavioral interventions. “I’m not sure I know what to do if a child with Autism becomes aggressive.”

With respect to academic needs, the preservice educators made a definite distinction between knowledge of general education strategies and ASD-specific strategies. Pre-Educator 2 said, “I feel much more comfortable meeting the academic needs of general education students. I don’t think I know as much about how to work with children with ASD.” Pre-Educator 3 and Pre-Educator 6 also felt underprepared to meet the academic goals of students with ASD. Both participants cited weaknesses in their ability to adapt the curriculum to the needs of students with ASD. Pre-Educator 6 disclosed, “I struggle with differentiating. I like the theory of it, but with Autistic kids in the classroom, it can be very, very challenging.”

The majority of participants seemed confident in their abilities to address the social needs of students with ASD, but based these feelings on personality traits or personal experiences rather than specific training. For example, Pre-Educator 1 felt her own introverted personality would help her to better understand the social awkwardness



of students ASD while Pre-Educator 3 believed she could reference her experiences in a grade school social skills group to assist her future students with ASD build relationships with peers.

Nonetheless, the majority of interview participants had limited knowledge of ASD-specific resources. When asked specifically about resources to facilitate or support learners with ASD, three participants could not identify any resources. In fact, Pre-Educator 3 admitted that the only resources she was familiar with for students with ASD were special education teachers and paraprofessionals. This response, in particular, was interesting because it was the only reference to personnel resources provided to this question directly. Two interview participants mentioned only technology as a resource, and solely as a means of communication. Pre-educator 4 shared “I’ve seen iPad communication devices being used a lot; that’s helped children who can’t talk as well as communicate.”

Insufficient knowledge of ASD-specific strategies and resources among interview participants is most likely a direct result of limited teacher training. While the goal of dual certification is to widen the professional knowledge based of preservice teachers, integrated general and special education programs typically address specific disabilities broadly (Busby et al., 2003). Unfortunately, this approach often results in general classroom interventions which may not support the specific learning needs of students with ASD (Guldberg, 2010; Leblanc et al., 2009). In fact, research has shown that both inservice and preservice teachers need to develop critical evaluation skills to implement effective instructional practices for students with ASD (Bain et al., 2009; Stahmer et al., 2005).

## **The Positive Role of Experience with Students with ASD**

All six of the interview participants had some experience with students with ASD. Although the type and amount of experience varied among the preservice educators, each viewed their experiences as valuable to their future teaching careers. Similarly, the preservice educators agreed that additional experience with children with ASD would better prepare them for teaching in inclusive classrooms. Each participant described experience that directly impacted her preparedness to meet the academic, behavioral, or social needs of a student with ASD.

**Field experience/observations.** Four interviewees had a field experience with at least one student with ASD. These participants discussed how these experiences observing and teaching students with ASD enriched the quality of their teacher preparation. For example, Pre-Educator 1 discussed how her student teaching experience taught her techniques to address behavior concerns of a student with ASD. “I worked with a boy [with ASD] who got very, very violent. I learned a way to communicate with him and helped him re-focus and do positive things.” Pre-Educator 2 shared “hands-on experiences in the classroom were much more helpful, and beneficial to me than college courses because college courses didn’t really show me what working with those students [with disabilities] would be like.”

Participants also viewed observations in inclusive classrooms as a beneficial component to their teacher training. Pre-Educator 4 shared, “Learning to teach students with ASD isn’t something that they [college professors] can teach from a lesson plan. I benefited most being in classrooms and watching teachers interact with kids with autism.” Likewise, Pre-Educator 3 believed that observing students with ASD in

multiple settings provided her with a better understanding of the roles of both general and special education teachers in the inclusion process. Observing effective teachers provided both Pre-Educator 2 and Pre-Educator 4 with models of student engagement. Pre-Educator 2 offered, “When I was assisting teaching, I watched the way she [cooperating teacher] talked with the student [with ASD]. He [the student with ASD] responded to her calm voice. I tried to communicate with him the same way.”

In contrast, the preservice educators without fieldwork with students with ASD expressed a sense of disadvantage. Pre-Educator 6 spoke about field experience as critical to a quality teacher training program.

I learned strategies for differentiating and such in one of my courses. But then, you get to student teaching, and you either have or don’t have students with various needs, and you can’t change that. I know there were some things I learned that I didn’t get to practice because I didn’t have students with autism in my class. A lot of what I learned got filed in a binder, and never used. I am sure that will affect my overall teaching.

The described experiences of the respondents seemed to inspire a general sense of confidence in working with students with ASD. Research has well-supported the theory that field experiences can positively influence teacher self-efficacy (Cantrell et al., 2003; Lastrapes & Negishi, 2012; Leblanc et al., 2009; Lee et al., 2011). The interviewees valued experiences with students with ASD because they provided opportunities to practice skills in a classroom setting and to reflect on successful intervention with individual students. Vicarious experiences gained through the observation of quality

teaching mentors can also promote higher levels of teacher confidence (Bandura, 1997; Ruble et al., 2003).

**Volunteer/work experiences.** However, fieldwork was not the only experience with students with ASD the interviewees valued. Pre-Educator 3 spent time in a camp setting with students with ASD. She expressed how those experiences helped her become a more caring teacher. “Seeing how hard they [students with ASD] tried to ‘fit in’ made me a little more aware of their special needs. I learned patience and compassion. I can incorporate that in my classroom, and ‘be there’ emotionally for these kids [with ASD].” Pre-Educator 6 discussed how working at a camp helped her observe and practice skills working with students with ASD. “Because there wasn’t really an academic focus at the day camp, I had more experience dealing with the behavioral side of ASD. I also had a chance to see how others interacted with him.” Moreover, Pre-Educator 2 talked about how her work in a camp setting helped her better understand how to utilize support staff best.

Some of the children with ASD had a TSS [Therapeutic Support Staff] or aides that walked around with them. I learn a lot from watching them [TSS and aides] work with the students. I learned how I could use their help to help the kids [with ASD] be part of the group.

Several respondents gained a better awareness of ASD through experiences with students beyond the classroom setting. In a less formal environment, interviewees focused more attention on behavioral and social goals. Through the development of such child-specific interventions, novice teachers have opportunities to integrate knowledge and skills into their existing teaching repertoires and to reflect on their instructional ideals

(Taskin-Can, 2011). In addition, frequent interaction with individual students with ASD broadens understanding of the exceptionality and its manifestation in students (Leblanc et al., 2009). Such insight adds to teacher preparedness to support students with ASD because individual student needs are central to school treatment plans (Autism Spectrum Disorders, 2012).

**Personal relationships.** Two interview participants had personal relationships with individuals with ASD. Pre-Educator 1 had a younger brother with ASD and Pre-Educator 6 had a cousin with ASD. Both respondents discussed how the experience of interacting with these family members shaped their awareness and appreciation of ASD. Pre-Educator 1 shared “I feel I understand students with autism more and have the ability to relate to them more because of my brother.” Pre-Educator 6 held similar beliefs about her cousins with ASD. “My cousins have helped me be more understanding of the students [with ASD] themselves.”

Certainly, it is possible that the preservice educators who agreed to this interview were strongly motivated by their positive experiences with students with ASD. However, the two respondents with personal relationships with individuals with ASD seemed to maintain a special sensitivity for this population of students. It is not uncommon for personal teacher beliefs such as these to influence attitudes toward inclusion profoundly (Brandes & Crowson, 2009). Yet, individuals in late adolescence, similar to the interview respondents, tend to maintain higher levels of idealism, which can lead to disillusionment (Elkind, 1998). Such disillusionment is common in service professions because of work-related stressors and complicated emotion connections with clients (Harr

& Moore, 2011). Accordingly, positive attitudes and expectations must be paired with professional knowledge and skills (O'Sullivan et al., 2009).

**Impact of experience on teacher attitudes toward inclusion.** In two cases, various experiences with several children with ASD have promoted positive attitudes toward including these students. Pre-Educator 1 spoke passionately about how her personal and professional experiences have shaped her perception of the inclusion process. "Working with so many students with ASD and my brother makes me feel it takes a very special teacher to be able to help students exceed when they have difficulties, and I think I can be one of those teachers." Pre-Educator 4 shared several times in her interview how her experiences with children with ASD have challenged her view of special education.

My majors are Early Childhood and Special Education. It's a double major; you really don't have a choice. And going in to it, I just wanted to be Early Childhood. I really didn't want the Special Ed end of it. But after working at Camp ---, I feel a lot more confident in my ability to teach students with special needs, and I would be willing to pursue a career in special education.

These data seem to suggest a link between teacher attitudes and self-efficacy. Positive experiences with students with disabilities motivate teachers to evaluate their behaviors more positively, resulting in higher levels of teacher self-efficacy (Bandura, 1997; Ruble et al., 2011). As illustrated through the comments of the interviewees, teachers who have greater confidence in their abilities also maintain more positive attitudes toward the inclusion process (Gao & Mager, 2011; Sari et al., 2009).

## **Plans for Future Professional Development in ASDs**

Aware of weaknesses in their ASD teaching repertoires, each of the six interview participants discussed their plans to strengthen her knowledge and skills. In doing so, the interviewees indicated areas of concern in their overall preparedness to teach students with ASD as well as their thoughts on how professional development would increase their instructional effectiveness.

However, only two of the interviewees believed that their future school district of employment would offer regular professional development focused on ASD. Pre-Educator 2 stated, "Autism is such a big thing in classrooms now. I am pretty sure that the school that I will be working in the fall will have something in place to help me." Similarly, Pre-Educator 1 shared, "I think most schools provide resources, at least books or journals, if you ask for them." Nonetheless, each of the six interviewees had some informal plan for extending her understanding of ASD in her beginning teaching years.

**Mentors.** The importance of capable mentors was mentioned by three of the interviewees. Pre-Educator 5 offered, "I know someone who works at ---- [a local approved private school for students with ASD]. I go to her with questions a lot because she has more experience than me." Pre-Educator 6 also addressed the need to seek out highly qualified colleagues for guidance. "I would definitely want support from other educators who are more trained in working with students with ASD, especially helping me with differentiating instruction." Pre-Educator 1 spoke passionately about her mother as a significant role model and mentor for promoting ASD awareness,

She is a very good advocate for my brother [with ASD]. And having her as my personal resource is very, very touching to me. As soon as we got the diagnosis

for --- [participant's brother], she had the internet pulled up. She was reading books. She was reading newspaper articles, magazine articles, anything she could get her hands on, and having my mother as a resource, I can go to her to hash out any classroom problem I have.

Similarly, Pre-Educator 1 mentioned the role of a college professor as a valuable resource in constructing her understanding of ASD and its impact in the classroom. "Dr. --- [professor] knows so much about autism and she has helped me to grow in my knowledge of ASD and my love for children with ASD."

Similar to novices in other fields, teachers begin their career with relatively simple skills sets (Housner & Wayda, 2011). Because this particular group of novice teachers had moderate levels of experience with students with ASD, they seemed to be cognizant of gaps in their knowledge and skills. This self-awareness distinguished the interviewees of this study from typical preservice educators who usually have difficulty recognizing disparities in understanding until they gain significant experience in the field (Kyoung-AeKim & Roth, 2011). As the three respondents discussed, seeking the expertise of more experienced mentors is a common approach to addressing these gaps in understanding and abilities (Kyoung-AeKim & Roth, 2011).

**Collaboration with colleagues.** Three interview participants cited partnering with school colleagues as a way to extend their ASD knowledge. In particular, Pre-Educator 2 had already experienced success collaborating with a colleague to assist a student with ASD, "In my student teaching, I came up with a behavior plan by speaking with one of the learning support and special education teachers in the school. It really helped the child do better in class." Pre-Educator 1 anticipated the importance of



consulting colleagues when problem-solving ASD classroom challenges. “I would work with any teacher that has contact with the child [with ASD]. I would ask them what’s working for the student [with ASD] in their class because maybe it will work for me, too.” Suggesting a more formal perspective of collaboration, Pre-Educator 6 spoke about using administrative leaders and counselors to help navigate through understanding the formal accommodations of the IEP.

Because it uses a resource which is in abundance in schools, collaboration among colleagues is an effective way to develop instructional skills. Several of the preservice educators had already experienced benefits as a direct result of professional collaboration in their student teaching, and consequently; they were highly motivated to continue this practice in their future classrooms. When special and general education teachers share teaching strategies, they expand their teaching repertoires and improve educational programming for every student (Cooke & Friend, 1995). Furthermore, collaboration among educators establishes a supportive network for teachers to implement innovative practices (Cooke & Friend, 1995; Magiera & Zigmond, 2005).

**Personal endeavors.** Collaboration with colleagues notwithstanding, five preservice educators were also willing to pursue personal professional development projects. Pre-Educator 2 discussed the possibility of taking a course or workshop to expand her knowledge base. Because of its impact on her understanding of ASD behaviors during her student teaching, Applied Behavioral Analysis (ABA) is now a professional interest of Pre-Educator 5. “In doing that research, it enlightened me to a lot of things because I did a lot of reading on autism and different methods that you would use with students with autism and the applied behavioral analysis.” Other preservice

educators spoke about ways they would use other personal interests to build their understanding of ASD through individual professional development. Pre-Educator 1 commented, “I spend a lot of time reading books about it, watching documentaries on it.” Inspired by technology, Pre-Educator 4 shared an interest in exploring assistive devices that could support her future work with students with ASD.

Based on the comments of the interviewees, intrinsic motivation played a significant role in planning for individual professional development. Such “self-initiated learning which involves the whole person of the learner--- feelings as well as intellect--- is the most pervasive and lasting” (Lanka, 2009, p. 100). For genuine professional development to transpire, educators must value the learning and assign it personal meaning (Jones, West, & Stevens, 2006; Lanka, 2009). By assessing their needs and pursuing appropriate paths of learning, the preservice educators became personally vested in professional improvement (Jones, et al., 2006).

**Partnerships with students and families.** Establishing partnerships with families of students with ASD was also mentioned as a source of future professional development. Pre-Educator 6 recognized the influence of family involvement and “having access to parents and good communication lines to the home.” In addition, several interviewees suggested collaboration with families as a means of contending with the complexity of ASD. In fact, Pre-Educator 1 recognized the family as the most critical resource to teachers of students with ASD.

I feel the best resource for any child is the parent, because the parents raise the child. They know what the child needs. They know what works with the child,

and what doesn't work with the child. So, it is very important to get the parent on your side.

Later, Pre-Educator 1 discussed the value of consulting the child with ASD for valuable insight in addressing problems. "If you're having a problem, maybe even go straight to the child, and talk to them. Try and tap into what they're feeling, and what's going on with them." Pre-Educator 2 and Pre-Educator 4 also saw value in forging relationships with students with ASD. Specifically, Pre-Educator 2 offered, "I think it's helpful just to know the likes, the needs, the wants of students [with ASD] because I think it helps the students kind of warm up to me and enjoy working with me more."

Although not recognized universally as professional development, family partnerships can provide useful insight to educators working with students with ASD (Blane & Borden, 2008). Interview respondents seemed to view parent involvement as a means to understand individuals with ASD better, thereby identifying student strengths and weaknesses more readily. Access to such student-specific information helps to establish student learning profiles that can inform problem-solving and decision-making in the classroom (Ray et al., 2009). Additionally, relationships with families can affect teacher attitudes toward students with ASD (Rodriguez, Saldana, & Moreno, 2012). Rodriguez et al. (2012) found that special education teachers with support networks comprised of members of student families and the school community were more likely to hold positive attitudes toward students with ASD.

**Pursuit of an advanced degree.** Two interviewees cited their limited knowledge of special education, including knowledge of ASD, as motivation to pursue an advanced degree. Pre-Educator 3 believed that an advanced degree would help fill gaps in

knowledge created in her undergraduate training. “I’m going for the master’s program because my undergraduate program only gave us two classes in special education. I feel like I’m missing skills.” Pre-Educator 5 expressed a similar sentiment.

I feel that if I was not going to obtain my Master’s, I would be in the dark with children with autism. In my undergrad, we took two special ed classes that were required. We talked a lot about different diagnoses that you would maybe see in the classroom. It was very, very vague.”

Quality teachers are life-long learners; they are in constant pursuit of best practices. Certainly, these interview participants should be recognized for acknowledging weaknesses in their understanding and committing to plan to address concerns. An advanced degree will provide additional training and skills that will support their future career in education. However, a graduate degree does not guarantee absence of classroom challenges for beginning educators (Kent, 2000). Instead, novice teachers, especially those working with students with disabilities, need frequent opportunities to apply instructional skills and to engage in reflective practice (Leko & Brownwell, 2011).

Table 24

*Emergent Themes Gathered from the Interviews (N = 6)*

Emergent Theme	N	%
Concerns with Teacher Training	4	67
Deficits in Knowledge and Skills	4	67
Limited Strategy/Resource Knowledge	6	100
Role of Experience with Students with ASD	6	100
Fieldwork	4	67
Volunteer/Work	3	50
Personal Relationships	2	33
Impact of Teacher Attitude	2	33
Plans for Professional Development	6	100
Mentors	3	50
Collaboration with Colleagues	3	50
Personal Endeavors	5	83
Partnerships with Families	4	67
Advanced Degree	2	33

**Summary of Second Phase of Research**

Additional qualitative data was collected in this study through semi-structured interviews. Nine guiding questions were asked to solicit the insight of six preservice early childhood educators as to their perceived preparedness to meet the needs of students

with ASD in inclusive classrooms. Participants also discussed their plans for future professional development in order to maintain or advance their ASD-related knowledge and skills.

Through the interview process, participants had an opportunity to express their concerns about their general ability to teach students with ASD effectively. These concerns highlighted emergent themes surrounding strengths and weaknesses in their overall sense of preparedness. These themes included concerns with teacher training programs, deficits in ASD-related knowledge and skills, the positive role of experience with students with ASD, and future plans for professional development in ASDs.

Exploring emergent sub-themes provided further information as to how interviewee preparedness to teach students with ASD was established, practiced, and advanced. Emergent sub-themes included limited knowledge of ASD-specific strategies and resources, positive experiences with individuals with ASD in school, home, and work environments, and on-going professional development through mentorship, collaboration, personal endeavors, family partnerships, and pursuit of an advanced degree.

### **Summary**

This chapter presented the findings represented by the responses of the 34 pre-service early childhood educators to a Likert-scale survey, the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001), and a series of open-ended questions associated with ASD-specific vignettes. The findings of this chapter also included the insights of six interviewees and their descriptions of their preparedness to address the needs of students with ASD.

The short form of the *Teacher Sense of Efficacy Scale* indicated the perceived teacher self-efficacy of the preservice educators. Responses from the open-ended vignettes, in contrast, offered detailed information about how these novice educators would respond to academic, behavioral, or social challenges of students with ASD. Interview participants offered additional insight into the influences that could impact preservice early childhood educators' perceived preparedness to teach students with ASD in inclusive classrooms.

Chapter Five will discuss and summarize data collected in this investigation with respect to each research question. Additionally, recommendations for how this study might inform teacher training programs and on-going professional development for in-service educators will be discussed.

## CHAPTER FIVE

### SUMMARY, DISCUSSION, AND RECOMMENDATIONS

#### **Introduction**

The prevalence of Autism Spectrum Disorder (ASD) is on the rise (Center for Disease Control and Prevention, 2012; Kopetz & Lee, 2012; Posserud, Lundervold, Lie, & Gillberg, 2010). Further, the increase in the incidence of ASD within the public school population has profoundly affected how schools implement inclusion policies and procedures (Kopetz & Lee, 2012; Safran, 2008; Stichter et. al, 2007; White et al., 2007). Such changes in inclusion practices demand that teachers possess an adequate knowledge and understanding of ASD as well as appropriate strategies and resources necessary to meet the needs of these diverse students (Guldberg, 2010; LeBlanc et al., 2009). Additionally, self-efficacy plays a critical role in shaping attitudes toward students with disabilities (Gao & Mager, 2011). Teachers who maintain confidence in their ability to effect change within the inclusion process generally have more positive attitudes toward students with disabilities (Gao & Mager, 2011; Sari et al., 2009).

This study explored the teacher self-efficacy beliefs of early childhood preservice educators and their preparedness to teach students with ASD. The population of this study consisted of junior- and senior-level early childhood preservice educators (N = 34). The initial phase of data collection consisted of two parts. First, the participants responded to a Likert-scale survey, the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001). Second, participants completed open-ended questions based on a series of short vignettes describing common social, behavioral, and academic challenges of students with ASD in inclusive classrooms. Using the



information provided in the vignettes, participants described their responses to situations by identifying goals, resources, and strategies that would address the needs of students with ASD.

In the subsequent phase of this study, the researcher led follow-up interviews with selected preservice early childhood educators from within the larger population (N = 6). The purpose of these interviews was to gain greater insight as to the preservice educators' perceived sense of preparation to teach students with ASD. Responses from the interviews were analyzed and coded for emerging themes and sub-themes. A mixed method approach that combined quantitative and qualitative surveys and semi-structured interviews was used to address the following research questions:

1. How do preservice teachers majoring in early childhood describe their sense of self-efficacy with respect to student engagement, classroom management, and instructional practices?
2. What type of learning goals do preservice early childhood teachers report setting to meet the needs of young children with ASD in inclusive classrooms?
3. What types of resources do preservice teachers specializing in early childhood access to meet the needs of students with ASD in inclusive classrooms?
4. What strategies do preservice early childhood teachers report as part of their teaching repertoires that they would draw upon to meet the academic, social, and behavioral challenges of students with ASD?
5. What are the perceptions of preservice early childhood teachers

concerning their preparation to address the academic, social, and behavioral needs of students with ASD in inclusive classrooms?

This chapter offers a summary of the findings of this research. The purpose of this study was to examine the teacher self-efficacy beliefs of preservice early childhood educators and their preparedness to teach students with ASD. A discussion of the findings of this investigation with respect to the predetermined research questions comprises the focus of this chapter. However, the results of this study will also be interpreted through the theoretical perspective of this research and relevant literature within the field. In light of the conclusions drawn from this investigation, several recommendations and implications for teacher preparation programs and classroom practice will be offered for consideration. Additionally, suggestions for further research in this area of study will be discussed.

### **Summary and Discussion of Findings**

This research was divided into two phases. Phase One was composed of the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001). The objective of this particular survey instrument is to examine the perceived self-efficacy of educators with respect to three unique factors: (1) engagement, (2) classroom management, and (3) instructional practices. Respondents' scores on this survey were used to answer the first research question. Research questions 2-4 were answered with data collected from a researcher-developed vignette survey that called upon early childhood majors to identify goals, resources, and strategies they would use to address challenging situations that surface frequently while working with students who have ASD. The second phase of this investigation consisted of follow-up interviews which

were directed at examining the perceived preparedness of the preservice educators to teach students with ASD. Review of participant responses revealed many common themes consistent with the theoretical framework of this study as well as other relevant literature in this field.

### **Summary and Discussion of Findings Related to the First Research Question**

*How do preservice teachers majoring in early childhood describe their sense of self-efficacy with respect to student engagement, classroom management, and instructional practices?*

Items on the short form of the *Teacher Sense of Efficacy Scale* (Tschannen-Moran & Woolfolk Hoy, 2001) concentrate on three types of teacher self-efficacy: (1) student engagement self-efficacy, (2) classroom management self-efficacy, and (3) instructional practice self-efficacy. Generally, the groupings of these factors with respect to the short form are as follows: efficacy in student engagement, items 2, 3, 4, and 11; efficacy in classroom management, items 1, 6, 7, and 8; and efficacy in instructional practices, items 5, 9, 10, and 12 (Tschannen-Moran & Woolfolk Hoy, 2001). The Likert-scale questions were scored on a scale of 1 *none at all* to 9 *a great deal* to indicate teacher confidence in skill or knowledge level (Tschannen-Moran & Woolfolk Hoy, 2001).

On the *Teacher Sense of Efficacy Scale*, Tschannen-Moran and Woolfolk Hoy (2001) recognized responses of 7.1 or above to be associated with higher levels of perceived teacher self-efficacy. By this standard, this study indicated that preservice early childhood educators maintained moderately high levels of self-reported teacher efficacy. The means of participant responses were 6.50 or greater for all individual items, excluding item 11. This item, which asked preservice educators to indicate their

efficacy with partnering with families, had a mean of 5.91. In addition, the majority of participants rated their teacher self-efficacy as 7 or greater for 11 of the 12 survey items. With the exception of item 11, the percentage of participant scores greater than 7 on individual item numbers ranged from 52% to 82%. The percentage of scores greater than 7 for item 11 was 44%.

Similarly, moderately high levels of teacher self-efficacy were reported for the three self-efficacy factors found in the survey instrument. Data indicate significantly high teacher self-efficacy for one item associated with each self-efficacy factor. Descriptive analysis of participant responses indicated means greater than 7.1 for item numbers 2 (student engagement), 5 (instructional practices), and 7 (classroom management). Further, the means of each of the three correlated variables were 6.85 for student engagement and instructional practices and 6.80 for classroom management. Each of these three scores was only slightly below the statistically significant score of 7.1, indicating perceived high self-efficacy.

Given the sources from which novice teachers typically establish self-efficacy, these results appear reasonable. Bandura (1997) theorized that successful past experiences would promote high levels of self-efficacy. For the preservice educators in this study, significant past experiences in their teacher training could have influenced their feelings of teacher confidence. Perhaps most significantly, successful interactions with students during fieldwork experiences can boost feelings of self-efficacy for novice educators (Lastrapes & Negishi, 2012). Furthermore, feelings of preparedness stemming from the completion of coursework can promote feelings of teacher efficacy (Cantrel et

al., 2003). Swackhamer et al. (2009) found that teachers with more content knowledge were generally more confident in their teaching practices.

Vicarious experience may also have played a significant role in increasing levels of self-efficacy in the preservice educators in this research (Bandura, 1997; Ruble et al., 2003). Created from observations collected from the success of others, vicarious experiences are significant aspects of preservice educators' training (Bandura, 1997). Positive instructional practices, student work samples, and interaction with colleagues create the belief that teachers can influence student achievement (Tschannen-Moran & Barr, 2004).

In addition, higher levels of self-efficacy for this sample of preservice educators may have been rooted in their developmental maturity. Youth in late adolescence, such as traditional preservice educators, typically maintain highly idealistic beliefs about the world (Elkind, 1998). These beliefs inspire novice educators to develop an unrealistic view of teaching that overestimates their skills and knowledge (O'Sullivan, et al., 2009). However, inadequate induction into the teaching profession coupled with isolation in the field strains the idealistic beliefs of beginning teachers (Ryan, 1974). The result is often insurmountable challenges which undermine teacher confidence and effectiveness (Ryan, 1974). With respect to inclusion, this conflict between ideal and reality in schools is especially noteworthy (Jung, 2007). In a study of preservice educators, Jung (2007) found that favorable attitudes toward inclusion were far less positive after student teaching experiences.

## Summary and Discussion of Findings Related to the Second Research Question

*What type of learning goals do preservice early childhood teachers report setting to meet the needs of young children with ASD in inclusive classrooms?*

A researcher-developed, open-ended vignette survey was used to address the second research question. This survey instrument featured four vignettes which described common social, behavioral, or academic challenges of students with ASD in inclusive classrooms. After reading each vignette, participants described their response to the situation, noting specific goals, resources, and strategies they would employ to address the described concern.

The quality of participant responses was evaluated with a researcher-designed rubric. Each item response was evaluated as *advanced*, *proficient*, *basic*, or *no response*. *Advanced* responses were valued as 3, *proficient* = 2, *basic* = 1, and *no response* = 0. Survey responses were analyzed according to item foci, including learning goals, resources, and strategies to support students with ASD. Responses concerned with learning goals included item numbers 1, 4, 7, and 10. Goal responses with an *advanced* rating included three major elements, observable tasks or skills, measureable outcomes, and specific attention to both the immediate and underlying challenges described in the vignette. The results of a descriptive analysis of the preservice educators' reported goals showed a mean score of 1.54, indicating that goal quality was between *basic* and *proficient* levels.

Qualitative analysis was also used to examine goal types. Items pertaining to learning goals were organized by common features or characteristics. The frequency of similar goals was noted. Further, emergent themes among all reported goals provided

additional information on specific goal types. Overall, reported goals in this survey were general in nature. Although the vast majority of participants provided a goal response, most responses were absent of both observable tasks and measurable outcomes. In fact, goals with both observable tasks and measurable outcomes comprised 12% or less of reported responses in each vignette. Without these elements, it is difficult to monitor progress of skills.

These inadequacies in reported goals can be attributed to novice experience. Because their teaching repertoires are limited, novice teachers often lack sophistication in their instructional planning (Coffey & Gibbs, 2002; Peters, 2012). Furthermore, novice teachers frequently implement general interventions because they are not fully aware of the relationship between thoughtful intervention planning and student outcomes (Garrett, 2007). When teachers disregard purposefully goal setting, learning expectations are not communicated to students, limiting long-term student achievement and progress.

Also, participants frequently reported goals which concentrated on the most immediate challenge. Concerns with a direct impact on safety, academic progress, or social well-being, immediate challenges do require urgent teacher attention. In the described vignettes, the underlying challenge inspired the more challenging classroom behaviors. Accordingly, addressing the underlying challenge should simultaneously address the immediate challenge.

Determining the function of a behavior identifies the motivation for student actions and assists educators in implementing prescriptive intervention (Love, Carr, & LeBlanc, 2008). In contrast, when the fundamental challenge is misdiagnosed, problem behaviors can persist (Trabox et al., 2009). Yet, less than half of participants (44%)

suggested goals which addressed the underlying goal in Vignette #1 and Vignette #2, and the underlying challenge was not addressed at all in Vignette #3 and Vignette #4.

### **Summary and Discussion of Findings Related to the Third Research Question**

*What types of resources do preservice teachers specializing in early childhood access to meet the needs of students with ASD in inclusive classrooms?*

The researcher-developed, open-ended vignette survey also was used to respond to the third research question. The second item in each vignette sequence asked participants to describe the resources they would access to address the described social, behavioral, or academic challenge. With the researcher-designed rubric, reported resources were evaluated as *advanced*, *proficient*, *basic*, or *no response*.

For resources, a rating of *advanced* required participants to suggest resources which were specific and appropriate, commonly available in inclusive classrooms, and thoroughly descriptive. *Advanced* responses were valued as 3, *proficient* = 2, *basic* = 1, and *no response* = 0. Item numbers concerned with learning resources included item numbers 2, 5, 8, and 11. Descriptive analysis of the preservice educators' reported resources had a mean score of 1.51, indicating that goal quality was between *basic* and *proficient* levels.

Frequency analysis of suggested resources seemed to indicate that the preservice early childhood educators were uncertain about identifying appropriate resources to support students with ASD in inclusive classrooms. Although reported resources were generally appropriate and readily accessible in inclusive classrooms, the largest percentage of both no response and unrelated responses were associated with resource items. In Vignettes #1-3, the combined percentages of no response and unrelated



responses composed 6%, 18%, and 27% respectively. Most significantly, the majority of participants (35%) did not provide a response to the resource item number for Vignette #4.

Nonetheless, there were some emergent themes present among the reported resources. Participants suggested resources which were entirely student-centered. Despite the fact that the data seemed to suggest a weakness in identifying appropriate resources to support students with ASD among participants, responses were focused on addressing student concerns rather than teacher deficits in ASD-specific skills and knowledge. For example, participants failed to acknowledge professional development and personnel as viable resources to problem-solving challenges of students with ASD, but often recommended rule charts and interactive technology as student supports.

Certainly, resources focused on student needs are important to progress and achievement, but teacher support is a necessary component on effective inclusion as well (Loiacono & Valenti, 2010). In particular, collaboration with colleagues provides opportunities for teachers to work collectively to meet student needs and to address gaps in their knowledge and skills (Chandler-Olcott & Kluth, 2009; Winterman & Sapona, 2002). In addition, collaboration among special and general education teachers helps to establish a more positive attitude toward inclusion (Garriott et al., 2003).

Generally, reported resources were non-specific as well. Respondents offered a diverse collection of resources for each vignette, but descriptive information about how the resources would be used was absent. In many cases, it was possible to assume the purpose of the resource through the context of the entire vignette sequence. However, a

stated rationale would suggest a more thorough understanding on the described student challenge.

### **Summary and Discussion of Findings Related to the Fourth Research Question**

*What strategies do preservice early childhood teachers report as part of their teaching repertoires that they would draw upon to meet the academic, social, and behavioral challenges of students with ASD?*

Data from the open-ended vignette survey was used to address the fourth research question. The third item in each vignette sequence asked participants to describe the strategies they would access to address the described social, behavioral, or academic challenge. With the researcher-designed rubric, reported resources were evaluated as *advanced, proficient, basic, or no response*.

Strategies with an *advanced* rating addressed the multiple challenges illustrated in the vignette and described the purpose and value of the suggested strategies. Advanced responses were valued as 3, *proficient* = 2, *basic* = 1, and *no response* = 0. Item numbers concerned with learning strategies included item numbers 3, 6, 9, and 12. Descriptive analysis of the preservice educators' reported strategies had a mean score of 1.91, indicating that strategy quality was only slightly below *proficient* level.

Survey participants offered the strongest responses to survey items related to strategy. Among the three foci of the survey items, reported strategies were the most diverse and thoroughly described. These data seem to suggest that participants felt the most confident problem-solving classroom challenges through student engagement. Yet, emergent themes among the reported strategies suggest some misperceptions of the concept of classroom interventions and limited use of ASD-specific student strategies.

Without clarification, some reported strategies were better suited as classroom resources or natural consequences. Strategies that suggested small/individual group settings or printed materials are not actual interventions on their own. Only when paired with teacher mediation can these resources represent a pedagogical strategy. Similarly, reported strategies that suggested punishment or referral to school administration fail to plan effective instructional intervention for the challenges described in the vignettes.

Furthermore, several strategies reported were general classroom strategies rather than ASD-specific interventions. Although many of the reported strategies could be very effective with students with ASD, data seemed to indicate limited knowledge of ASD-specific interventions among participants. Described as beneficial in skill rehearsal, use of Social Stories and peer mediation were the only two ASD-specific strategies respondents suggested. Yet, several ASD-specific strategies could appropriately address the common challenges described in each vignettes.

This study is not the first to report over-confidence in strategy knowledge and rationale among U.S. teachers. Data from the Third International Mathematics and Science Study (TIMSS) found that although the vast majority of U.S. teachers described themselves as knowledgeable of best practices in teaching and learning, few actually demonstrated these practices when they were observed (Stigler, Gonzalez, Kawhaka, Knoll, & Serrano, 1999). Because the experience of school is universal, it is common for novice teachers to believe that the combination of their own school experiences and their coursework will prepare them for a successful career in education. However, this misplaced confidence can produce educators who are ill-prepared to teach students with diverse and complex learning needs.

Such results are comparable to other findings in ASD strategy knowledge research as well. Stahmer et al. (2005) reported that educational service providers had adequate knowledge of effective ASD strategies, but were entirely unaware of the research base that supported their practices. Similarly, in a study of classroom ASD interventions, Bain et al. (2009) found teaching candidates implemented interventions without evidence-based research. Further, Hendricks (2011) noted that special education teachers also fail to implement evidence-based interventions with fidelity. As in the present study, these investigations suggest preservice teachers need to learn to evaluate strategies critically to address the needs of students with ASD (Bain et al., 2009; Hendricks, 2011; Stahmer et al., 2005).

Yet, to a certain extent, this reflective process is one that improves with practice and experience (Grierson, 2010). As novices, teachers use their training to determine best practices with proven success (Dryfus & Dryfus, 1986). This assertion provides an explanation for the diverse reported strategies among participants in this investigation. However, unique student needs require novel approaches (Kyoung-Aekim & Roth, 2011), and novice teachers are frequently too focused on instructional routines to experiment with innovative interventions (Gersten et al., 2000). Highly effective teachers, by contrast, have more developed repertoires which are aligned with specific student needs (Garrett, 2007; Scott, 2003).

#### **Additional Quantitative Findings Related to Research Questions 2-4**

The quality of participant responses to the open-ended vignette surveys was also analyzed according to each vignette sequence. Such data analysis provided valuable insight, as the quality of reported goals, resources, and strategies was considered a

collective response. Accordingly, a mean score for the population was determined for each vignette sequence.

Analysis of vignette sequence means for the population indicated consistently decreasing scores from Vignette #1 to Vignette #4. Vignette #1 had the highest mean score of 1.97. The mean of Vignette #2 was slightly lower at 1.80 while Vignette #3 had a significantly lower mean of 1.45. Vignette #4 had the lowest mean of 1.39. Although all four mean scores were between *basic* (1.00) and *proficient* (2.00) scores, both Vignette #1 and Vignette #2 had mean scores which were only slightly below *proficient*.

An explanation for decreasing scores among the vignette sequences might be explained by the focus of the described challenges. The vignette sequence with the strongest score, Vignette #1, described an academic challenge. Vignette #2, which had only a slightly lower score, described a social challenge. Conversely, both Vignette #3 and Vignette #4 described classroom challenges with immediate behavioral concerns. Such difficulties with classroom management are typical among novice teachers with limited teaching experience (Cakmak, 2008). In fact, research by Peters (2012) indicated that beginning teachers have limited behavior interventions in their repertoires and often apply general strategies to student-specific issues.

### **Summary and Discussion of Findings Related to the Fifth Research Question**

*What are the perceptions of preservice early childhood teachers concerning their preparation to address the academic, social, and behavioral needs of students with ASD in inclusive classrooms?*

The fifth research question was best answered through the follow-up telephone interviews held with six of the respondents of the larger sample. Each of the six

interview participants were junior- or senior-level students majoring in early childhood and elementary education or early childhood and special education. Although each of the interviewees was asked the same series of nine guiding questions, follow-up questions were posed to probe for additional information as necessary.

**Concerns with teacher training.** All six interviewees had varied experiences that influenced their preparation to meet the needs of students with ASD. Although some of the preservice educators felt their special education courses were superficial, others felt that their training had provided quality instruction on how to adapt the curriculum to assist students with disabilities, including students with ASD. Several participants felt that their general teacher preparation coursework was insufficient preparation for working with students with ASD, and focused on typically-developing students.

Additional fieldwork is often identified as a remedy for this common deficit in the pedagogical development of preservice educators (Ergul et al, 2013, Hendricks, 2011; LeBlanc et al., 2009; Taskin-Can, 2011). However, more extensive time in the classroom alone will not better prepare beginning teachers. Instead, preservice teaching experiences should engage novice teachers in reflective practice to meet the needs of students with ASD (Bain et al., 2009; Stahmer et al., 2005). Such reflective practice includes opportunities to plan, analyze, and revise intervention in collaborative settings.

All of the preservice educators believed they possessed a basic understanding of ASD, but recognized deficits in their knowledge and skills. Interview respondents identified the wide diversity among students with ASD as a tremendous hindrance in meeting student needs. Two participants discussed how this variance in how ASD manifests makes supporting students with ASD difficult. These data are supported by the

findings of Barning et al. (2011) who suggested that preservice educators not only maintained limited ASD knowledge, but also misunderstood the needs of students with ASD in inclusive classrooms. Scheuermann et al. (2003) argued that such misconceptions result from an absence of professional standards in ASD training.

Interviewees also identified complexity among ASD diagnoses as a deterrent to appropriate strategy development to meet the needs of students with ASD. In particular, many of the participants discussed deficits in their knowledge of behavioral interventions for students with ASD. The preservice educators expressed feeling unprepared to address aggressive behavior from students with ASD. One participant shared feelings of being overwhelmed with the extensive amount of research and information on behavioral interventions for students with ASD.

In regard to academic needs, the preservice educators saw a definite discrepancy between their knowledge of general education strategies and ASD-specific strategies. In fact, many participants felt their skills in supporting general education students were superior to those for students with ASD. One participant expressed difficulty she experienced differentiating instruction for students with ASD while another shared that she could not appropriately adapt the curriculum to meet the needs of students with ASD.

The majority of interviewees felt confident in their ability to address the social needs of students with ASD. However, the preservice educators based this sense of self-assurance on qualities in their individual personalities or experiences. One participant mentioned how her own introverted demeanor gave her a better understanding of the social awkwardness associated with ASD. Another respondent expressed how vivid

childhood memories of interaction with students with ASD could inform strategies she would employ to help her future students with ASD build peer relationships.

As was the case with identifying specific strategies, ASD-specific resources were also difficult for the interview participants to identify. In fact, half of the respondents could not identify resources that could be used to support students with ASD in inclusive classrooms directly. Later in the interview, however, all six interviewees easily recognized resources to advance their knowledge and understanding of ASD. This is a point of interest because the participants seemed to make a distinction between resources that would support the students and resources that would promote their own awareness. Personnel resources were mentioned as a resource, but only as support staff to the student with ASD. The other half of participants discussed the value of technology as a possible resource to motivate communication between the teacher and students with ASD.

Interview data on preservice educator strategy and resource knowledge supports findings from the initial segment of this research. As in the open-ended vignette survey, interview participants struggled to identify appropriate ASD-specific resources and strategies. Hendricks (2011) confirmed similar results in a study of the characteristics of special education teachers serving students with ASD. Data from this research indicated that special education teachers had only low to intermediate levels of ASD knowledge and instructional best practices (Hendricks, 2011).

**Positive influence of experience with students with ASD.** The confidence the interviewees exhibited in their responses may have been inspired by their relevant and meaningful experiences with youth with ASD. All six of the interview participants described interaction with individuals with ASD. Among the preservice educators, the



type and amount of experience varied; however, each participant believed her experiences were valuable to her future career as a teacher. Further, the preservice educators expressed a desire to gain additional experience with students with ASD to better prepare them for teaching in inclusive classrooms. Participants described experiences that directly impacted their preparedness to meet the academic, behavioral, or social needs of a student with ASD.

During their field experiences, four interviewees had regular interaction with at least one student with ASD. These participants discussed how these experiences provided opportunities to observe effective behavioral interventions. One participant mentioned how her field experiences added authenticity to her coursework by pairing theory with practice. Furthermore, two interviewees highlighted observations of cooperating teachers' interaction with students with ASD as a beneficial component to teacher training. These experiences offered positive models of effective inclusive teaching. One preservice educator talked about how observing her cooperating teacher helped her gain strategies for communicating with students with ASD. Conversely, one of the preservice educators without fieldwork with students with ASD expressed a feeling of disadvantage because she had few opportunities to practice techniques she learned in her course training.

In particular, the role of fieldwork in inclusive teacher preparation has been the subject of much research (Busby et al., 2012; Diken, 2006; Hemming & Woodcock, 2011; Taskin-Can, 2011; LeBlanc et al., 2009). As expressed in the participants' comments, classroom experience with students with ASD provides opportunities to advance skills and reflect on teaching beliefs (Taskin-Can, 2011). Hemming and

Woodcock (2011) found that preservice educators surveyed before and after inclusion training and fieldwork increased their inclusion knowledge and skill levels. However, perhaps a more significant second finding was the majority of participants became aware of gaps in teacher training, and learned to identify appropriate resources to address their deficits (Hemming & Woodcock, 2011).

Opportunities to observe skilled teachers interact with students with ASD can be beneficial to the preservice educators as well. As novice teachers gain more experience, they learn to analyze the behaviors of more qualified teachers to inform their own practices (Kyoung-AeKim & Roth, 2011). Positive observations of cooperating teachers can also create vicarious experiences that build greater self-efficacy for beginning teachers (Bandura, 1997; Tschannen-Moran & Barr, 2004). This phenomenon might explain why these respondents viewed teaching students with ASD favorably.

Nonetheless, fieldwork training did not constitute the only experience the interviewees had with students with ASD. Many interviewees had work experiences with students with ASD in camp settings. Because these situations had less of an academic focus, the preservice educators had many opportunities to concentrate on improving their knowledge of behavioral interventions for students with ASD. Other participants shared how these less formal settings allowed them to get to know the students with ASD better, and increased their appreciation for differences among children. Another participant used her experiences as a camp counselor to observe support staff engaged with the students with ASD. In this way, she learned ways to utilize personnel resources effectively in a large-group setting.

Another type of experience noted by two interview participants was personal relationships with individuals with ASD. One interviewee had a younger brother with ASD and a second interviewee had a cousin with ASD. Both respondents discussed how the experience of interacting with these family members shaped their awareness and appreciation of ASD. The preservice educator with a sibling with ASD felt she could better related to students with ASD because of her brother while the preservice educator with a cousin felt her personal experience raised her general awareness and understanding of ASD. Furthermore, experiences with loved ones with ASD seemed to create deep-seated motivation to create acceptance of ASD among colleagues and peers.

As illustrated by the experiences of these two interviewees, personal relationships can influence attitudes toward individuals with ASD profoundly. These feelings are echoed in the words of Dwanye Ballen (2013), a father of a child with ASD, who believes his typically-developing son's relationship with his brother with ASD helped him gained "a better understanding and appreciation for what his brother's autism means" (p. 22). Interview participants also mentioned how these less formal experiences with youth with ASD helped them to appreciate the diversity with the disorder. Such perspective is valuable to teachers of students with ASD because effective supports and services must be focused on individual student needs (Autism Spectrum Disorders, 2012).

Extensive experience with ASD had a tremendous impact on two of the participants' attitudes toward the inclusion process. One participant shared how her experience with students with ASD made her feel more confident that she could be an effective teacher in an inclusive classroom setting. Another participant entered into her

dual early childhood and special education major with minimum interest in pursuing a career in special education. However, experience with students with ASD inspired a genuine interest in becoming a special educator teacher.

These positive experiences with students with ASD inspired the interviewees to feel more confident about their abilities to work with this population. When teachers maintain high levels of self-efficacy, their attitudes toward the inclusion process are more favorable (Gao & Mager, 2011). Comparative findings were noted by Sari et al. (2009) who theorized that as self-efficacy increases, attitudes toward inclusion improve. Similarly, Cook (2004) found that teachers with greater classroom experience were more accepting of students with disabilities.

In addition, the impact of experience on the respondents' attitudes toward inclusion is significant because working effectively with students who have ASD relies heavily on dispositions. It is not enough for teachers to have knowledge of classroom strategy, but instead, they must believe that all students deserve to be valued and accepted in school (Harman, Kasa-Hendrickson, & LaVonne, 2009). Yet, teacher attitudes toward students with disabilities can be rigid and negatively influenced by the perceived stress of increased professional responsibilities (Woodcock et al., 2012). Nonetheless, teachers who learn to view disability as an asset enrich their classrooms communities with diverse perspectives and social learning opportunities (Harman et al., 2009).

**Plans for on-going ASD professional development.** Acknowledging weaknesses in their ASD teaching repertoires, each of the six interview participants discussed her plans to strengthen her knowledge and skills. Only two of the interviewees believed that their future school districts of employment would provide professional

development with an ASD focus. Consequently, the interviewees highlighted the importance of identifying ways to address gaps in their overall preparedness to teach students with ASD and to increase their instructional effectiveness.

For example, three of the interview participants cited the importance of capable mentors. Specifically, one participant often sought the insight of a colleague who teaches at a specialized autism school. Another preservice educator planned to seek guidance from highly qualified colleagues. With more experience with students with ASD, both of these mentors were considered valuable resources to the novice teachers. Additionally, a third interviewee discussed the ways her mother has been a role model of child advocacy for her brother with ASD. She also recognized a college professor who had made herself available for problem-solving challenges with students with ASD in the field. Effective, more experienced colleagues are a valuable professional development resource because they often have more extensive teaching repertoires (Garrett, 2007).

Similarly, three interview participants cited partnering with school colleagues as a way to extend their ASD knowledge. During her student teaching, one interviewee worked with a special education teacher to design a behavioral plan for a student. This experience provided greater opportunity for success for the child. A second respondent saw value in collegial support as a way to gain multiple perspectives on the strengths and weaknesses of students with ASD. Another interviewee discussed using administrative leaders and counselors to help navigate through understanding the formal accommodations of the IEP. Such mentorship and collaboration can establish school-wide self-efficacy beliefs that can positively influence student achievement (Tschannen-Moran & Barr, 2004).

Although the interviewees recognized the significance of collaboration with mentors and colleagues, they were also willing to pursue personal professional development projects. While one interviewee discussed the possibility of taking a course or workshop to expand her knowledge base, a second respondent noted the ASD books and documentaries she has reviewed. The preservice educators also mentioned other personal interests which motivated individual interests in ASD professional development. For instance, one preservice educator wanted to learn more about using technology to assist students with ASD. Another participant had an interest in learning more about research-based interventions. Kyoung-AeKin & Roth (2011) argue that novice teachers grow professionally when experience makes them aware of shortcomings in knowledge and skills. In both cases, the planned professional development has roots in personal motivation, and as such, may be more enduring (Lanka, 2009).

In addition, establishing partnerships with families of students with ASD was also mentioned as a source of future professional development. In particular, several interviewees suggested collaboration with families as a means of contending with the complexity of ASD. Because of their regular interaction with the students with ASD and their understanding of the child's needs, the family was recognized by several participants as the most critical resource to teachers of students with ASD. Three interviewees believed that the student with ASD could also be a valuable resource in his educational planning. Participants valued individual interaction with the teacher as a way to build a relationship of trust with the student.

Fully committed to ongoing professional development, two interviewees planned to pursue an advanced degree. Both preservice educators saw a Master's degree as a way

to extended their ASD knowledge and skills. Additionally, one interviewee hoped that graduate school would offer more specific information on special education diagnoses and interventions.

### **Study Limitations**

The most profound limitation of this investigation was the relatively small sample. Recent changes to early childhood teacher certification in Pennsylvania require institutions to offer dual certification programs in special and early childhood education. Several of the institutions contacted as potential sites for this research were in various stages of transition to new programming that would strengthen the special education emphasis in the curricula, and as such, were unwilling to allow their preservice educators to be part of this study. Accordingly, the three research sites were a convenience sample, something that limits the generalizability of the findings.

Furthermore, individual participation at each research site was moderately low as well. The initial phase of this investigation, which consisted of both the Likert-scale and open-ended vignette surveys, was conducted during course class time. Nonetheless, participation in the study was entirely voluntary. In hindsight, the principal researcher acknowledges that this setting may not have been ideal for the survey instrument type and length. It is possible that some preservice educators declined to participate in a pencil-paper task directly before mandatory course work.

With respect to the interview phase of this research, other limitations should be noted. First, the interview respondents were all female. Although the population of early childhood majors is overwhelmingly female, it would have been interesting to have the insight of a male preservice educator. Second, one of the three research sites had no

participants from the first phase of the research who consented to the follow-up interview. Insight from these students from the unrepresented institution may have offered a unique perspective to this research.

A third limiting factor of the interview research may be that respondents who agreed to the follow-up interview did so because of their more favorable attitudes toward the inclusion of students with ASD. It should not be overlooked that each interview participants had positive experiences with students with ASD. Surely, these experiences impacted the confidence levels of the novice educators and may have motivated them to participate in the interview process. Additionally, for interviewees with personal relationships with individuals with ASD, this interview seemed to provide an outlet for promoting ASD awareness and acceptance.

### **Recommendations for Teacher Preparation Programs**

The societal demands placed on schools along with accountability pressures have impacted the inclusion process tremendously (Brownwell et al., 2010; Taskin-Can, 2011). No longer considered a reward to a select few, inclusion is an inalienable right of students whose needs can be met in a general education classroom with appropriate supports and services (Obiakor, 2011). As a result, the responsibility of teaching students with disabilities has become the shared role of special education and general education teachers (Ashby, 2012; Busby et al., 2012; Gentry, 2011). Yet, in the present research, data indicated that preservice early childhood educators felt they could be better prepared to teach students with ASD. Accordingly, formal coursework in autism-related skills is quickly becoming a necessity for contemporary educators.



The increase in the population of students with ASD has produced the need to develop the knowledge and skills of educators who teach these youth (Busby et al., 2012; LeBlanc et al., 2009; Lerman, 2004). Far too often, training in ASD-specific skills is a reactive rather than a preemptive response from schools (Scheuermann et al., 2003). Addressing concerns of students with ASD in this manner is inherently problematic because student progress can be greatly impeded while teachers attempt to improve skills (Scheuermann et al., 2003). Furthermore, while the available research on effective teaching strategies for students with ASD is broad, the number of teachers who master these techniques is scarce (Busby et al., 2012; Scheuermann et al., 2003). Preservice training in autism-specific skills, even as part of a general special education course, can impact teacher understanding of the disorder as well as reduce anxiety related to the inclusion of students with ASD (LeBlanc et al., 2009).

Yet, filling gaps in teacher training presents an overwhelming challenge in higher education (Simpson, 2004). Extensive diversity within the disability is compounded by the lack of program standards in autism training for preservice educators (Busby et al., 2012; Lerman, 2004; Scheuermann et al., 2003). Preparing teachers to include students with ASD in contemporary classrooms mandates not only general education knowledge but also specialty skills in autism-related interventions and understanding (Barned et al., 2011; Busby et al., 2012; Simpson, 2004). Simpson (2004) suggested that training for teachers of students with ASD should address specific instructional knowledge in several areas, including (1) social development and communication, (2) sensory integration, (3) spatial awareness, and (4) behavioral management.

Moreover, it is critical that novice educators develop these ASD-focused best practices through explicit instruction and modeling (Simpson, 2004). Activities designed to mimic interaction with students with ASD, such as case studies and vignette reviews, can help novice teachers practice ASD intervention strategies (Barned et al., 2011). Additionally, interviews or observations of teachers with effective ASD instructional practices may also authenticate learning experiences for preservice educators (Barned et al., 2011; Woodcock et al., 2012). These learning activities are especially meaningful because they create vicarious experiences on which novice teachers can build the self-efficacy, making them more resilient in response to challenging classroom situations (Bandura, 1997; Billingsley et al., 2004; Gao & Mager, 2011; Ruble et al., 2003).

### **Teacher Preparation Through Field Experience**

As noted by the interviewees of the present study, field experiences with students with ASD can improve the quality of teacher preparation (Barned et al., 2011; Diken, 2006). Experiences with several different students with ASD illustrate the wide diversity within the disorder and build understanding of the complexity of the disability (LeBlanc et al., 2009). Additionally, field work with students with ASD provides preservice educators with the opportunity to build new teaching repertoires and to engage in reflective practice (Taskin-Can, 2011). Conversely, an absence of these experiences can create an idealistic view of inclusive classrooms which does not typically mirror the realities of the inclusion process (Diken, 2006).

Several studies have suggested that field experience can influence teacher self-efficacy positively (Cantrell et al., 2003; Lastrapes & Negishi, 2012; Lee et al., 2011). However, not every student teacher will be afforded the opportunity to interact with

students with ASD during fieldwork, and accordingly; less formal experiences should be considered to enhance integrated special and general education certification programs. Requiring volunteer or service work with youth with ASD prior to admission into these majors could help novice teachers build greater awareness and understanding of the disorder. Furthermore, frequent contact with students with ASD offers teachers greater opportunity to experience success in their instructional practices.

This type of interaction promotes self-efficacy through mastery experience (Bandura, 1997). Bandura (1997) hypothesized that teachers who interpret their behaviors as beneficial to their students maintain greater confidence in their teaching abilities. Because universal interventions do not exist for students with ASD, higher self-efficacy may motivate teachers to persist in organizing student-specific treatment plans (Billingsley et al., 2004; Gao & Mager, 2011; Ruble et al., 2003).

### **Teacher Preparation Through Cultural Competency**

The culture of disability includes distinctive patterns of social interaction and communication (Harmon et al., 2009). Although the disability culture differs from that of typical students, teachers should value its contribution to the classroom community (Harmon et al., 2009). Teachers with such cultural competency are aware of “how culture affects teaching and learning, as well as pedagogical skills for translating this knowledge into new teaching-learning opportunities and experiences” (Gay, 2000, p. 209).

Nieto (2012) argues that beginning teachers need ample opportunities to explore the lives of their students in order to value them as learners. Establishing cultural competence in preservice teaching should include gaining general awareness of student

cultures and the unique strengths of diverse populations of students (Gay, 2000). In the case of students with ASD, novice educators should use preservice experiences to advance their knowledge of autism and to explore ways to address specific student needs. Teacher training programs must also encourage novice teachers to examine established paradigms about student culture and the role of these beliefs on teacher attitudes toward diverse students (Gay, 2000).

Likewise, to gain cultural competence, beginning teachers must learn ways to support the emotional needs of students with ASD. In order to establish high expectations for all students, it is critical that educators are trained to communicate their care and understanding of diverse students (Nieto, 2012). Harmon et al. (2009) suggest that teachers build this rapport with students who have significant disabilities by (1) creating a caring class environment, (2) engaging effectively with families, (3) offering access to curricula, and (4) implementing researched-based interventions. Yet, preparing teachers to work with students with ASD does not end with certification. Ongoing efforts must be made to maintain a current focus in best practices for this diverse group of students.

### **Recommendations for Ongoing Professional Development**

Far too often, the practice of teaching general education is viewed as an independent endeavor. Early childhood educators especially are expected to instruct a wide variety of course material in self-contained classrooms throughout the majority of the school day, severely limiting opportunities to engage in meaningful collaboration. Yet, the value of partnering with colleagues and parents within the school community can develop promising interventions to support students with ASD (Simpson, 2004). Further,

collaboration among educators can strengthen a school-wide commitment to successful inclusion practices (Chandler-Olcott & Kluth, 2009).

### **Peer Observation**

Widely acknowledged as influential on teacher effectiveness in higher education, peer observation promotes reflection on the instructional practices of colleagues (Hendry & Oliver, 2012). Similar to field experience whereby the cooperating teacher provides guidance in developing pedagogical understanding, peer observation allows teachers to problem-solve collectively in the classroom (Anderson, Barksdale, & Hite, 2005). Such a collaborative approach is crucial in schools where feedback from administrative leaders is intermittent or generic (Atkinson & Bolt, 2010). Peer observation empowers teachers to implement and evaluate their own instructional practices (Atkinson & Bolt, 2010; Peel, 2005). The result is focused decision-making that positively affects both student achievement and teacher development (Anderson et al., 2005).

With respect to students with ASD, peer observation can be a valuable source of professional development. Peer observation provides reciprocal benefits to both the observer and the observed as both are afforded the time and space to reflect on the practice and the process of learning (Donnelly, 2007; Peel, 2005). Among its most significant advantages, peer observation creates a learning community that promotes the frequent discussion of teaching and learning (Atkinson & Bolt, 2010; Donnelly, 2007). Because of the extensive diversity among students with ASD, such group reflection on instructional practices is critical to effective interventions for students with the disorder (Autism Spectrum Disorders, 2010). Further, the reflective practice facilitated through

peer observation motivates an intentional approach to instruction grounded in student goals (Epstein, 2007).

### **Japanese Lesson Study**

A more intensive version of peer observation is the lesson study model. Rooted in the Japanese tradition of collaborative curriculum development, the lesson study process begins when teams of teachers explore a goal or question thoroughly (Cohan & Honigsfeld, 2006). An iterative cycle of teaching, peer observation, and reflection prompts teachers to discuss and modify the lesson (Cohan & Honigsfeld, 2006). The result is a well-crafted lesson that not only inspires students to think critically and to build meaningful understanding of course content but also is shared with other educators throughout the region and the nation (Doig & Groves, 2011). With respect to teaching students with ASD, the lesson study model provides educators an opportunity to employ effective interventions which combine effective goals, strategies, and resources.

In addition, characteristics of the lesson study model are highly beneficial to teacher professional development. First, lesson study is designed as a collaborative process which broadens educators' understanding of teaching and learning (Trent, Blum, McLaughlin, & Yocom, 2005). The lesson study process encourages problem-solving through multiple perspectives and shared ownership of enhanced teaching approaches (Doig & Groves, 2011). Second, lesson study assigns teachers the responsibility of addressing their own gaps in knowledge (Trent et al., 2005). Such flexibility in professional development is valuable in planning for students with ASD whose diverse needs could require student-specific training.

## **Collaboration Through Co-Teaching**

Collaborative efforts can also be established through co-teaching experiences (Nichols, Dowdy, & Nichols, 2010). By providing instruction alongside typical peers, co-teaching offers a more inclusive environment for students with special needs (Cooke & Friend, 1995; Keefe & Moore, 2004; Magiera & Zigmond, 2005). Partnering among special and general education teachers expands teaching repertoires, increasing the instructional integrity of educational programming (Cooke & Friend, 1995). Furthermore, co-teaching builds a rapport among teachers that inspires professional support of classroom practice (Cooke & Friend, 1995; Magiera & Zigmond, 2005).

When general and special educators commit to collaboration, such as co-teaching, they become better equipped to meet the needs of students with ASD (Chandler-Olcott & Kluth, 2009; Winterman & Sapona, 2002). However, co-teaching is especially beneficial in inclusive classrooms because it can promote greater achievement for every student (Keefe & Moore, 2004). By offering unique expertise and perspectives, general and special education teachers can vastly improve the quality of instruction (Cooke & Friend, 1995). Working to meet the specific needs of students with ASD can help teachers plan novel instructional approaches to address the needs of non-disabled peers as well (Chandler-Olcott & Kluth, 2009; Jordan, 2008).

## **Collaboration through Professional Learning Communities**

Yet, school-wide collaboration is only effective when the school community is focused on appropriate, relevant issues (Fullan, 2001). When the school community lacks a collective vision, goal achievement becomes unattainable (Kantavong & Sivabaedya, 2010). Furthermore, teacher feelings of incompetency and inadequacy are

intensified when educators feel isolated from a supportive network of colleagues (Lee & Shaari, 2012). In professional learning communities (PLC), educators and administrators commit to specific school wide outcomes grounded in the continuing development of teaching and learning (Kantavong & Sivabaedya, 2010; Riveros, Newton, & Burgess, 2012).

PLCs offer a sense of direction to schools that creates a cohesive vision for school wide improvement and establishes professional collaborative partnerships among teachers (Lee & Shaari, 2012). Effective PLCs can lead to better designed lessons, application of theory, and purposeful learning activities (Kantavong & Sivabaedya, 2010). In addition, PLCs have the potential to improve teacher confidence and reflective practice (Kantavong & Sivabaedya, 2010). In fact, the overarching goal of PLCs is to use teaching partnerships to transform instructional practices to inspire greater student success (Riveros et al., 2012). These school relationships are significant because they facilitate the integration of coherent programming within the organization (Fullan, 2001).

PLCs transform individual teacher identities into collective school identities (Lee & Shaari, 2012). With respect to inclusion, a PLC committed to investigating appropriate supports and services for students with ASD could positively impact teacher attitudes and instructional practices. When teachers believe they have the ability to affect change in student performance, Collective Teacher Efficacy (CTE) improves (Bandura, 1997; Tschannen-Moran & Barr, 2004). Further, research has shown that a relationship does exist between positive levels of CTE and student achievement (Tschannen-Moren & Barr, 2004).



## **Collaboration with Parents**

Although teacher collaboration is critical to successful inclusion of students with ASD, parental resourcefulness should not be undervalued (Blane & Borden, 2008). Because of their differing perspectives, both teachers and parents should have a role in teaching students (Ray et al., 2009). While parents know the strengths and weaknesses of their children, school professionals provide experience, training, and objectivity (Blane & Borden, 2008). Educators base their decision-making on theory and practice while parents make choices for their children based in personal experience (Sheehey & Sheehey, 2007).

With both parents and professionals offering unique and valuable expertise, collaboration among these groups is imperative in the classroom setting. When teachers solicit parental input they can better address problem behaviors at school and identify abilities and needs (Ray et al., 2009). Additionally, many parents of children with ASD establish long-term goals for their children (Harte, 2009). Often, these life outcomes inform parent decision making about educational planning (Harte, 2009). To support students with ASD in inclusive classrooms effectively, teachers must be conscious of these student goals.

## **Research Implications**

The role of contemporary early childhood educators has expanded considerably in recent years. Now, more often than not, blended programs that bring together special education and early childhood education are commonplace. With respect to students with ASD in particular, the role of the inclusion teacher is multi-faceted (Busby et al., 2012; LeBlanc et al., 2009; Lerman, 2004). While novice educators may be better prepared to

meet the challenges of contemporary classrooms than previously, improvements are necessary to better prepare preservice educators to teach students with ASD (Busby et al., 2012; Scheuermann et al., 2003). This study examined the teacher self-efficacy beliefs of preservice early childhood educators and their preparedness to teach students with ASD in inclusive classrooms. Implications of this research are linked to how the self-reported perceptions of self-efficacy and preparedness might inform teacher training.

Teacher preparation programs could use the findings of this research to identify specific gaps in instructional skills. While this study found that preservice teachers had moderate knowledge of ASD, they were underprepared to address behavioral challenges. Because behavioral challenges are typically characteristic of many students with ASD, it is important teachers possess strategies to address these needs in their teaching repertoires.

Despite high levels of self-efficacy, the vast majority of participants had limited knowledge of resources available to support learners with ASD. Furthermore, the resources that preservice educators in this study thought would be most influential to student performance were directly related to student needs rather than linked to their own inabilities. Yet, teacher-centered resources – such as collaboration, co-teaching, and professional development – promote reflective practice (Chandler-Olcott & Kluth, 2009). Such experiences help educators understand the connection between strategy and student progress (Garrett, 2007). The result is an extensive repertoire of instructional practices, as well as the necessary insight to know how and when to implement appropriate accommodations (Epstein, 2007). Consequently, novice inclusion teachers need to be

taught the value of teacher-centered resources and how to use them to promote professional growth.

Additionally, participants of the initial phase of this study failed to recognize parents of students with ASD as a valuable resource in educational planning. As advocates for their children, many parents of children with ASD use specific knowledge about their children to navigate their children through daily experiences (Harte, 2009). Such parent expertise can be extremely valuable to educators who must plan school routines and outcomes for students with ASD (Ray et al., 2009). In fact, disregarding parental insight undermines a working relationship among teachers and parents of children with ASD (Sheehey & Sheehey, 2007). For this reason, novice educators should be taught strategies to solicit and integrate parental insight into educational programming.

The present study has suggested that certifying institutions need to provide ASD-specific training. Participants of the interview portion of this research had mixed opinions regarding the quality of their teaching training. However, all six respondents felt their knowledge of ASD-specific strategies and resources could be improved. Although the researcher acknowledges that no teacher certification program will ever be comprehensive of every learner's needs, these data would suggest that preservice educators need additional knowledge and skills to meet the needs of students with ASD.

Yet, supplemental course work is not necessarily the best response, but instead, embedding ASD training into core training assignments (Scheuermann et al., 2003). Interviews with quality instructors of students with ASD as well as case studies of students with ASD are examples of complementary course activities that could support the training of novice educators. Furthermore, preservice educators can build their

teaching repertoires by exploring children's literature with an ASD focus or designing lessons with modifications for students with specific ASD characteristics (i.e. object perseveration, scripting, non-verbal communication, etc.).

Although this research made recommendations of collaboration for inservice educators, preservice teachers can also benefit from cooperative experiences. The supportive network of student teaching cohorts offers a wide variety of teaching experiences and areas of expertise to explore. Beginning teachers should be taught to use these communities to analyze and discuss goal setting, resource planning, and strategy implementation for students with ASD. In addition, collaborative partnerships could be established among novice and experienced teachers. Such pairings would provide beginning teachers with insight about the inclusion process and educational programming for students with ASD.

Nonetheless, experience with students with ASD, whether within fieldwork or coursework, needs to be a part of every teacher candidate's training. In this study, 41% of preservice educators had no prior experience working with students with ASD. By contrast, all six participants of the interview portion of this research had some experience with students with ASD, and regarded these experiences as influential to their preparedness to teach students with ASD. These feelings are supported by the research of Syriopoulou-Deli, Cassimos, Tripsianis & Polychronopoulou (2012) who found that previous experience with students with ASD improved teacher effectiveness and attitudes toward these youth.

### **Recommendations for Further Research**

This study examined the teacher self-efficacy beliefs of early childhood educators. Because research has indicated that self-efficacy can directly influence teacher attitudes (Gao & Mager, 2011; Sari et al., 2009), this variable was examined judiciously in this investigation. A future correlational study might take a more in-depth look at the relationship between teacher self-efficacy and preparedness to teach students with ASD in inclusive classrooms. In addition, it could be of interest to examine teacher attitudes toward students with ASD directly. A well-published, reliable survey instrument, such as The Autism Attitude Scale for Teachers (Olley, Develis, Develis, Wall, & Long, 1981), could be used to conduct a focused study on teacher beliefs toward students with ASD.

Furthermore, self-efficacy beliefs were measured only once in this study. A longitudinal study of self-efficacy could monitor changes in teacher beliefs as novice educators build their teaching repertoires. The next stage of this research might be to collect multiple measures of self-efficacy from a single population of educators. Self-efficacy data could be collected before and after student teaching and at several points during the first year of inclusive classroom teaching.

Similarly, longitudinal study that follows early childhood majors across a four-year preparation program and into their first year of teaching would be useful in tracking effective instructional practice of novice teachers toward students with ASD.

Participants of this study were limited to undergraduate students. These novice educators had not yet begun their formal teaching careers and therefore, had not had many opportunities to implement interventions to aid students with ASD in a traditional

classroom setting. A year-long investigation of novice teachers could better showcase the evolution of professional skill development.

Because collaboration was one of the most significant recommendations of the present study, it may prove valuable to investigate effective professional collaboration in school communities. Case studies of individual schools would highlight effective methods of collaboration and their operational procedures. Individual teacher qualities which motivate participation in collaborative partnerships could also be examined. Further, the relationship between specific collaboration methods and the performance of students with ASD could be explored in correlational research.

A continuance of this research throughout teaching practice is significant because the present study examined teacher perceptions of their preparedness to teach students with ASD rather than their definite abilities. As a result, future studies might attempt to confirm genuine teacher preparedness. Observing teacher instructional practices, interviewing teachers and parents, and reviewing student records could provide evidence of actual teacher preparedness to teach students with ASD. In addition, parental input could be solicited through focus groups of families with children with ASD.

Likewise, it might prove interesting to study the preparedness of early childhood inservice educators to teach students with ASD. Replicating this study with practicing teachers could help identify common needs of contemporary educators with respect to their students with ASD. Data in such research could be analyzed with regards to several demographic factors, including age, years of experiences, or amount of professional development. Comparison of these data collected from inservice with those of preservice early childhood educators might also offer interesting insight.

In addition, it could be of interest to explore how universities are interpreting state-endorsed dual certification programs in early childhood education and special education. An extensive review of these curricula should include an examination of ASD-specific course offerings throughout universities in Pennsylvania. This information could provide insight to the quality and quantity of ASD training currently available to preservice educators. Differences and similarities among institution programs should also be noted. Case studies of institutions with highly effective ASD training programs could be conducted as well.

Distinctions among teacher certification programs may be a result of diverse faculty backgrounds and expertise. This study did not investigate the preparedness of faculty to train the early childhood preservice educators in ASD knowledge. Prospective research might explore the level of ASD understanding faculty exhibit as well as their knowledge of appropriate classroom interventions for students with ASD. Interviews with faculty members could reveal their strengths and needs in this field of special education.

### **Summary**

This study explored the teacher self-efficacy beliefs of early childhood preservice educators and their preparedness to teach students with (ASD). Data were collected through a series of closed- and open-ended surveys and semi-structured interviews. The findings from this study indicate the following:

- The teacher self-efficacy of preservice early childhood educators is moderately high for student engagement, instructional practices, and classroom management.

- Preservice educators set goals for students with ASD which focus on the most immediate concerns, and are generally broad in nature.
- Resources that preservice educators suggest to support students with ASD are student-centered, and designed for general populations of students.
- Preservice educators hold misperceptions of strategy characteristics and maintain limited repertoires of ASD-specific interventions.
- Inadequate ASD teacher training has an impact on preservice educators' preparedness to teach students with ASD.
- Preservice educators are aware of deficits in ASD-specific skills and knowledge.
- Experience with students with ASD has a significant influence of preservice educators' awareness of ASD and their attitudes toward inclusion.
- Preservice educators make plans to address deficits in training through on-going professional development.

This study presented evidence that early childhood educators complete their teacher certification programs with high self-efficacy, but are underprepared to address some of the challenges of teaching students with ASD. In light of this research, teacher training should be modified to include ASD experiences within coursework and fieldwork. Not only should preservice educators have more contact with students with ASD, but also ASD-specific best practices should be embedded into course assignments and discussions.



Furthermore, beginning teachers can benefit from ongoing ASD professional development. Experience and reflective practice can address deficits in teacher training. When faculty commit to collaborative problem-solving through co-teaching, PLCs, and partnerships with families, they develop skills and knowledge that allow them to support the needs of students with ASD as well as typically-developing students.

Future research in the self-efficacy beliefs of early childhood educators and their preparedness to teach students with ASD should examine the development of self-efficacy and preparedness more thoroughly. Longitudinal studies would allow for multiple analyses of teacher confidence, knowledge, and skills within the classroom environment. Comparisons of preservice and inservice teacher self-efficacy and repertoires could also provide important insight.

The growing population of students with ASD has made contemporary public schools more diverse. Furthermore, changing goals of inclusion have assigned increasingly larger numbers of students with ASD to general education classrooms. Accordingly, novice teachers must enter the classroom with appropriate skills and knowledge to address a wide spectrum of student needs. How these beginning teachers are prepared to meet these needs has a profound effect on the goal of inclusion as well as the entire educational process.

## References

- Ahsan, M., Sharma, U., & Deppeler, J. M. (2012). Exploring pre-service teachers' perceived teaching-efficacy, attitudes and concerns about inclusive education in Bangladesh. *International Journal of Whole Schooling*, 8(2), 1-20.
- Al-Shammari, Z. (2006). Special education teachers' attitudes toward autistic students in the autism school in the state of Kuwait: A case study. *Journal of Instructional Psychology*, 33(3), 170-178.
- Alexander, C. S., & Becker, H. (1978). The use of vignettes in survey research. *Public Opinion Quarterly*, 42(1), 93-105.
- American Psychiatric Association. (2013). *Autism Spectrum Disorder*. Retrieved from <http://www.dsm5.org/Documents/Autism%20Spectrum%20Disorder%20Fact%20Sheet.pdf>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed., Rev. ed.). Washington, DC: Author.
- Anderson, N. A., Barksdale, M., & Hite, C. E. (2005). Preservice teachers' observations of cooperating teachers and peers while participating in an early field experience. *Teacher Education Quarterly*, 32(4), 97-117.
- Arnett, J. J. (2008). Passing the torch: The legacy of great teachers. In F. Pajares & T. Urdan (Eds.), *Adolescence and education: Vol. 4. The ones we remember: Scholars reflect on teachers who made a difference* (pp. 11-18). Charlotte, NC: Information Age.
- Arnett, J. (2007). Suffering, selfish, slackers?: Myths and reality about emerging adults. *Journal of Youth and Adolescence*, 36(1), 23-29.

- Arora, T. (2012). Understanding the perseveration displayed by students with autism spectrum disorder. *Education, 132*(4), 799-808.
- Ashby, C. (2012). Disability studies and inclusive teacher preparation: A socially just path for teacher education. *Research & Practice for Persons with Severe Disabilities, 37*(2), 89-99.
- Ashwell, G. (2009). Autism and Asperger's syndrome. *Innovait, 2*(11), 651-656.
- Atkinson, D. J., & Bolt, S. (2010). Using teaching observations to reflect upon and improve teaching practice in higher education. *Journal of the scholarship of teaching and learning, 10*(3), 1-19.
- Autism – Part I. (1997). *Harvard Mental Health Letter, 13*(9), 1-4.
- Autism Spectrum Disorders: Diagnosis, prevalence, and services for children and families. (2010) *Social Policy Report, 24*(2), 3-21.
- Avramidis, E., Bayliss, P., & Burden, R. (2000). Student teachers' attitudes towards the inclusion of children with special educational needs in the ordinary school. *Teaching and Teacher Education, 16*, 277-293.
- Bain, S. K., Brown, K., & Jordan, K. R. (2009). Teacher candidates' accuracy of beliefs regarding childhood interventions. *Teacher Educator, 44*(2), 71-89.
- Baio, J., & Centers for Disease Control and Prevention. (2012). Prevalence of Autism Spectrum Disorders: Autism and developmental disabilities monitoring network, 14 Sites, United States, 2008. *Morbidity and Mortality Weekly Report Surveillance Summaries, 61*(3), 1-24.
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147.

- Bandura, A. (1997). *Self-efficacy: An exercise of control*. New York, NY: W.H. Freeman.
- Barned, N. E., Knapp, N., & Neuharth-Pritchett, S. (2011). Knowledge and attitudes of early childhood preservice teachers regarding the inclusion of children with Autism Spectrum Disorder. *Journal of Early Childhood Teacher Education*, 32(4), 302-321.
- Barrett, R. (2011). Autism: Past and present. *Brown University Child & Adolescent Behavior Letter*, 27(5), 8.
- Berman, S., Weems, C., & Stickle, T. (2006). Existential anxiety in adolescents: Prevalence, structure, association with psychological symptoms and identity development. *Journal of Youth & Adolescence*, 35(3), 285-292.
- Berry, R. W. (2006). Beyond strategies: Teacher beliefs and writing instruction in two primary inclusion classrooms. *Journal of Learning Disabilities*, 39(1), 11- 24.
- Berry, R. W. (2010). Preservice and early career teachers' attitudes toward inclusion, instructional accommodations, and fairness: Three profiles. *Teacher Educator*, 45(2), 75-95.
- Billingsley, B., Carlson, E., & Klein, S. (2004). The working conditions and induction support of early career special educators. *Exceptional Children*, 70(3), 333-347.
- Blackwell, A. J., & McLaughlin, T. F. (2005). Using guided notes, choral responding, and response cards to increase student performance. *International Journal of Special Education*, 20(2), 1-5.
- Blane, K. K., & Borden, M. (2008). The importance of early intervention for autism. *Brown University Child & Adolescent Behavior Letter*, 24(5), 1-7.

- Borden, M. (2011). Treating individuals who have autism: DSM-V, ABA, and beyond. *Brown University Child & Adolescent Behavior Letter*, 27(8), 1-6.
- Bouxsein, K. J., Tiger, J. H., & Fisher, W. W. (2008). A comparison of general and specific instructions to promote task engagement and completion by a young man with Asperger syndrome. *Journal of Applied Behavior Analysis*, 41(1), 113-116.
- Boyd, B. A., Conroy, M. A., Asmus, J. M., McKenney, E. W., & Mancil, G. (2008). Descriptive analysis of classroom setting events on the social behaviors of children with Autism Spectrum Disorder. *Education and Training in Developmental Disabilities*, 43(2), 186-197.
- Brandes, J. A., & Crowson, H. (2009). Predicting dispositions toward inclusion of students with disabilities: The role of conservative ideology and discomfort with disability. *Social Psychology of Education: An International Journal*, 12(2), 271-289.
- Bronk, K. (2008). Early adolescents' conceptions of the good life and the good person. *Adolescence: An international quarterly devoted to the physiological, psychological, psychiatric, sociological, and educational aspects of the second decade of human life*, 43(172), 713-733.
- Brophy, J. E. & Good, T. L. (1970). Teachers' communication of differential expectations for children's classroom performance: Some behavioral data. *Journal of Educational Psychology*, 61(5), 365-374.
- Browder, D., Ahlgrim-Dezell, L., Courtade, G., Gibbs, S., & Flowers, C. (2008). Evaluation of the effectiveness of an early literacy program for students with significant developmental disabilities. *Exceptional Children*, 75(1), 33-52.

- Brownell, M. T., Ross, D. D., Colon, E. P., & McCallum, C. L. (2005). Critical features of special education teacher preparation: A comparison with general teacher education. *Journal of Special Education, 38*(4), 242-252.
- Brownell, M. T., Sindelar, P. T., Kiely, M., & Danielson, L. C. (2010). Special education teacher quality and preparation: exposing foundations, constructing a new model. *Exceptional Children, 76*(3), 357-377.
- Bryson, S. E., Rogers, S. J., & Fombonne, E. (2003). Autism Spectrum Disorders: Early detection, intervention, education, and psychopharmacological management. *Canadian Journal of Psychiatry, 48*(8), 506-517.
- Burke, K., & Sutherland, C. (2004). Attitudes toward inclusion: Knowledge vs. experiences. *Education, 125*(2), 163-172.
- Busby, R., Ingram, R., Bowron, R., Oliver, J., & Lyons, B. (2012). Teaching elementary children with autism: Addressing teacher challenges and preparation needs. *Rural Educator, 33*(2), 27-35.
- Çakmak, M. (2008). Concerns about teaching process: Student teachers' perspective. *Educational Research Quarterly, 31*(3), 57-77.
- Callahan, K., Henson, R. K., & Cowan, A. K. (2008). Social validation of evidence-based practices in autism by parents, teachers, and administrators. *Journal of Autism and Developmental Disorders, 38*(4), 678-692.
- Cantrell, P., Young, S., & Moore, A. (2003). Factors affecting science teaching efficacy of preservice elementary teachers. *Journal of Science Teacher Education, 14*(3), 177-192.

- Carnahan, C., Musti-Rao, S., & Bailey, J. (2009). Promoting active engagement in small group learning experiences for students with autism and significant learning needs. *Education and Treatment of Children*, 32(1), 37-61.
- Carnahan, C. R., Williamson, P. S., & Christman, J. (2011). Linking cognition and literacy in students with Autism Spectrum Disorder. *Teaching Exceptional Children*, 43(6), 54-62.
- Center for Disease Control and Prevention. (2012). Autism and developmental disabilities monitoring (ADDM) network. Retrieved from <http://www.cdc.gov/ncbddd/autism/addm.html>
- Charman, T. (2002). The prevalence of Autism Spectrum Disorders: Recent evidence and future challenges. *European Child & Adolescent Psychiatry*, 11(6), 249-256.
- Coffey, M., & Gibbs, G. (2002). Measuring teachers' repertoire of teaching methods. *Assessment & Evaluation in Higher Education*, 27(4), 383-390.
- Cohan, A., & Honigsfeld, A. (2006). Incorporating 'lesson study' in teacher preparation. *Educational Forum*, 71(1), 81-92.
- Cohen, S. (2006). *Targeting autism: What we know, don't know, and can do to help young children with Autism Spectrum Disorders*. Los Angeles, CA: University of California.
- Combs, S., Elliott, S., & Whipple, K. (2010). Elementary physical education teachers' attitudes towards the inclusion of children with special needs: A qualitative investigation. *International Journal of Special Education*, 25(1), 114-125.
- Cook, B. G. (2004). Inclusive teachers' attitudes toward their students with disabilities: A replication and extension. *Elementary School Journal*, 104(4), 307-321.

- Cook, B.G., & Rumrill, P.D. (2000). Inclusion and transition: Partners in progress or policy paradox? *Work, 14*(1), 13-21.
- Cook, L. & Friend, M. (1995). Co-teaching: Guidelines for creating effective practices. *Focus on Exceptional Children, 28* (3), 3-19.
- Cochran-Smith, M., & Lytle, S. L. (Eds.). (1993). *Inside/outside: Teacher research and knowledge*. New York, NY: Teachers College Press.
- Cresswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Czaja, R., & Blair, J. (2005). *Designing surveys: A guide to decisions and procedures*. (2<sup>nd</sup> ed.). Thousand Oaks, CA: Sage.
- Dee, A. (2011). Preservice teacher application of differentiated instruction. *Teacher Educator, 46*(1), 53-70.
- Diken, İ. H. (2006). Preservice teachers' efficacy and opinions toward inclusion of students with mental retardation. *Eurasian Journal of Educational Research, 23*, 72-81.
- Doig, B., & Groves, S. (2011). Japanese lesson study: Teacher professional development through communities of inquiry. *Mathematics Teacher Education & Development, 13*(2), 77-93.
- Donnelly, R. (2007). Perceived impact of peer observation of teaching in higher education. *International Journal of Teaching and Learning in Higher Education, 19*(2), 117-129.
- Doris, I. (2012). Assessment of Autism Spectrum Disorders. *IFE Psychologia, 20*(2), 18-21.



- Downey, J. (2008). It's not as easy as it looks: Preservice teachers' insights about teaching emerging from an innovative assignment in educational psychology. *Teaching Educational Psychology*, 3(1), 1-13.
- Dreyfus, H. L., & Dreyfus, S. E. (1986). Putting computers in their place. *Social Research*, 5357-5376.
- Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, 25(5), 582-602.
- Elkind, D. (1998). *All grown up and no place to go: Teenagers in crisis*. Reading, MA: Addison-Wesley.
- Elkind, D. (1967). Egocentrism in adolescence. *Child Development*, 38(4), 1025-1036.
- Elliott, E., Isaacs, M., & Chugani, C. (2010). Promoting self-efficacy in early career teachers: A principal's guide for differentiated mentoring and supervision. *Florida Journal of Educational Administration & Policy*, 4(1), 131-146.
- Epstein, A.S. (2007). *The intentional teacher: Choosing the best strategies for young children's learning*. Washington, DC: National Association of the Education of Young Children.
- Ergul, C., Baydik, B., & Demir, S. (2013). Opinions of in-service and pre-service special education teachers on the competencies of the undergraduate special education Programs. *Educational Sciences: Theory & Practice*, 13(1), 518-522.
- Fennick, E., & Royle, J. (2003). Community inclusion for children and youth with developmental disabilities. *Focus on Autism and Other Developmental Disabilities*, 18(1), 20-27.

- Finnigan, K. S. (2010). Principal leadership and teacher motivation under high-stakes accountability policies. *Leadership & Policy in Schools*, 9(2), 161-189.
- Fives, H. M., Buel, M.M. (2009). Examining the factor structure of the teachers' sense of efficacy scale. *Journal of Experimental Education*, 78(1), 118-134.
- Fleer, M., & Hoban, G. (2012). Using 'slowmation' for intentional teaching in early childhood centres: Possibilities and imaginings. *Australasian Journal of Early Childhood*, 37(3), 61-70.
- Fogarty, J. L., Wang, M. C., & Creek, R. (1983). A descriptive study of experienced and novice teacher's interactive instructional thoughts and actions. *Journal of Educational Research*, 77(1), 22-32.
- Fortunato, J. A., Sigafoos, J., & Morsillo-Searls, L. M. (2007). A communication plan for autism and its applied behavior analysis treatment: A framing strategy. *Child Youth Care Forum*, 36, 87-97.
- Friedlander, D. (2009). Sam comes to school: Including students with autism in your classroom. *Clearing House*, 82(3), 141-144.
- Friedman, I. A. (2003). Self-efficacy and burnout in teaching: The importance of interpersonal-relations efficacy. *Social Psychology of Education*, 6(3), 191-215.
- Frith, U. (1989). *Autism: Explaining the enigma*. Malden, MA: Blackwell.
- Fullan, M. (2001) *Leading in a culture of change*. San Francisco, CA: Jossey-Bass.
- Gao, W., & Mager, G. (2011). Enhancing preservice teachers' sense of efficacy and attitudes toward school diversity through preparation: A case of one U.S. inclusive teacher education program. *International Journal of Special Education*, 26(2), 92-107.

- Garret, J. (2007). A teaching repertoire. *Kappa Delta Pi Record*, 44(1), 6-7.
- Garriott, P., Snyder, L., & Miller, M. (2003). Preservice teachers' beliefs about inclusive education: What should teacher educators know? *Action in Teacher Education*, 25(1), 48-54.
- Gately, S. E. (2008). Facilitating reading comprehension for students on the Autism Spectrum. *Teaching Exceptional Children*, 40(3), 40-45.
- Gavish, B., & Friedman, I. (2010). Novice teachers' experience of teaching: a dynamic aspect of burnout. *Social Psychology of Education*, 13(2), 141-167.
- Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York, NY: Teachers College Press.
- Gay, L.R., Mills, G. E., Airasaian, P. (2009). *Educational research: Competencies for analysis and applications*. Upper Saddle River, NJ: Merrill.
- Glaser, B.G. (1967). The constant comparative method of qualitative analysis. In B.G, Glaser & A.L. Strauss, *The discovery of grounded theory: Strategies for qualitative research* (pp.101-116). Chicago, IL: Aldine.
- Glesne, C. (1999). *Becoming qualitative researchers: An introduction*. (2<sup>nd</sup> ed.). New York, NY: Longman.
- Gentry, R. (2011). Economies and effectiveness in educating personnel for individuals with disabilities. *Journal of Instructional Pedagogies*, 6, 1-12.
- Gersten, R., Chard, D., & Baker, S. (2000). Factors enhancing sustained use of research-based instructional practices. *Journal of Learning Disabilities*, 33(5), 445-457.
- Gibson, S., & Dembo, M. H. (1984). Teacher efficacy: A construct validation. *Journal of Educational Psychology*, 76(4), 569-82.

- Good, T. L., & Brophy, J. E. (1972). Behavioral expression of teacher attitudes. *Journal of Educational Psychology*, 63, 617-624.
- Goodnough, K. (2010). Investigating pre-service science teachers' developing professional knowledge through the lens of differentiated instruction. *Research in Science Education*, 40(2), 239-265.
- Gresham, F. M., Beebe-Frankenberger, M. E., & MacMillan, D. L. (1999). A selective review of treatments for children with autism: Description and methodological considerations. *School Psychology Review*, 28(4), 559-576.
- Grierson, A. L. (2010). Changing conceptions of effective teacher education: The journey of a novice teacher educator. *Studying Teacher Education: Journal of Self-Study of Teacher Education Practices*, 6(1), 3-15.
- Hammonds, F. (2010). Is justified true behavior knowledge? *Behavior & Philosophy*, 38, 49-59.
- Han, C., Housner, L., & Wayda, V. (2011). The development of teaching skills in preservice teachers. *International Journal of Applied Sports Sciences*, 23(2), 465-486.
- Harmon, C., Kasa-Hendrickson, C., & Neal, L. I. (2009). Promoting cultural competencies for teachers of students with significant disabilities. *Research and Practice for Persons with Severe Disabilities*, 34(3-4), 137-144.
- Harr, C., & Moore, B. (2011). Compassion fatigue among social work students in field placements. *Journal of Teaching in Social Work*, 31(3), 350-363.

- Hart, J. E., & Whalon, K. J. (2008). Promote academic engagement and communication of students with Autism Spectrum Disorder in inclusive settings. *Intervention in School and Clinic, 44*(2), 116-120.
- Harte, H. A. (2009). What teachers can learn from mothers of children with autism. *Teaching Exceptional Children, 42*(1), 24-30.
- Hemmeter, M. (2000). Classroom-based interventions: evaluating the past and looking toward the future. *Topics in Early Childhood Special Education, 20*(1), 56-61.
- Hemmings, B., & Woodcock, S. (2011). Preservice teachers' views of inclusive education: A content analysis. *Australasian Journal of Special Education, 35*(2), 103-116.
- Hendricks, D. (2011). Special education teachers serving students with autism: A descriptive study of the characteristics and self-reported knowledge and practices employed. *Journal of Vocational Rehabilitation, 35*(1), 37-50.
- Hendry, G. D., & Oliver, G. R. (2012). Seeing is believing: The benefits of peer observation. *Journal of University Teaching and Learning Practice, 9*(1).
- Hirsh, S. (2009). A new definition. *Journal of Staff Development, 30*(4), 10-14.
- Hughes, R., & Huby, M. (2002). The application of vignettes in social and nursing research. *Journal of Advanced Nursing, 37*(4), 382-386.
- Hume, K., & Reynolds, B. (2010). Implementing work systems across the school day: increasing engagement in students with autism spectrum disorders. *Preventing School Failure, 54*(4), 228-237.
- Humphrey, N. (2008). Including pupils with Autistic Spectrum Disorders in mainstream schools. *Autistic Spectrum and Inclusion, 23*(1), 41-47.

- Ivey, J. K. (2007). Outcomes for students with Autism Spectrum Disorders: What is important and likely according to teachers?. *Education and Training in Developmental Disabilities, 42*(1), 3-13.
- Iovannone, R., Dunlap, G., Huber, H., & Kincaid, D. (2003). Effective educational practices for students with autism spectrum disorders. *Focus on Autism & Other Developmental Disabilities, 18*(3), 150-165.
- Jones, C., Happé, F., Golden, H., Marsden, A., Tregay, J., Simonoff, E.... Charman, T. (2009). Reading and arithmetic in adolescents with Autism Spectrum Disorders: Peaks and dips in attainment. *Neuropsychology, 23*(6), 718-728.
- Jones, P., West, E., & Stevens, D. (2006). Nurturing moments of transformation in teachers--Comparative perspectives on the challenges of professional development. *British Journal of Special Education, 33*(2), 82-90.
- Jeffries, C., & Maeder, D. W. (2011). Comparing vignette instruction and assessment tasks to classroom observations and reflections. *Teacher Educator, 46*(2), 161-175.
- Jennett, H. K., Harris, S. L., & Mesibov, G. B. (2003). Commitment to philosophy, teacher efficacy, and burnout among teachers of children with autism. *Journal of Autism and Developmental Disorders, 33*(6), 583-593.
- Jung, W. (2007). Preservice teacher training for successful inclusion. *Education, 128*(1), 106-113.
- Kanner, L. (1962). Emotionally disturbed children: A historical review. *Child Development, 33*(1), 97-103.

- Kasa-Hendrickson, C. (2005). There's no way this kid's retarded: Teachers' optimistic constructions of students' ability. *International Journal of Inclusive Education*, 9(1), 55-69.
- Kantavong, P., & Sivabaedya, S. (2010). A professional learning program for enhancing the competency of students with special needs. *International Journal of Whole Schooling*, 6(1), 53-62.
- Keefe, B., & Moore, V. (2004). The challenge of co-teaching in inclusive classrooms at the high school level and what the teachers told us. *American Secondary Education* 32, 77-78.
- Kent, S. I. (2000). Problems of beginning teachers: Comparing graduates of bachelor's and master's level teacher preparation programs. *Teacher Educator*, 35(4), 83-96.
- Kim, J. (2011). Influence of teacher preparation programmes on preservice teachers' attitudes toward inclusion. *International Journal of Inclusive Education*, 15(3), 355-377.
- Klingner, J. K., & Boardman, A. G. (2011). Addressing the "research gap" in special education through mixed methods. *Learning Disability Quarterly*, 34(3), 208-218.
- Koegel, L., Matos-Fredeeen, R., Lang, R., & Koegel, R. (2012). Interventions for children with Autism Spectrum Disorder in inclusive school settings. *Cognitive Behavior and Practice*, 19(3), 401-412.
- Kopetz, P. B., & Endowed, E.(2012). Autism worldwide: Prevalence, perceptions, acceptance, action. *Journal of Social Sciences*, 8(2), 196-201.

- Kuyini, A., & Mangope, B. (2011). Students teachers' attitudes and concerns about inclusive education in Ghana and Botswana. *International Journal of Whole Schooling*, 7(1), 20-37.
- Kyoung-Ae Kim, K., & Roth, G. (2011). Novice teachers and their acquisition of work-related information. *Current Issues in Education*, 14(1), 1-27.
- Lanka, A. (2009). Vet teachers in the context of professional growth: Reality and aspirations. *Vocational Education: Research & Reality*, (17), 96-105.
- Lastrapes, W., & Negishi, M. (2012). Foundational field experiences: A window into preservice teachers' cultural consciousness and self-efficacy for teaching diverse learners. *SRATE Journal*, 21(1), 37-43.
- Leblanc, L., Richardson, W., & Burns, K. A. (2009). Autism Spectrum Disorder and the inclusive classroom: Effective training to enhance knowledge of ASD and evidence-based practices. *Teacher Education and Special Education*, 32(2), 166-179.
- Leko, M. M., & Brownell, M. T. (2011). Special education preservice teachers' appropriation of pedagogical tools for teaching reading. *Exceptional Children*, 77(2), 229-251.
- Lee, D., & Shaari, I. (2012). Professional identity or best practices?: An exploration of the synergies between professional learning communities and communities of practices. *Creative Education*, 3(4), 457-460.
- Lee, Y., Patterson, P. P., & Vega, L. A. (2011). Perils to self-efficacy perceptions and teacher-preparation quality among special education intern teachers. *Teacher Education Quarterly*, 38(2), 61-76.



- Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & Quantity*, 43(2), 265-275.
- Lerman, D. C., Vorndran, C. M., Addison, L., & Kuhn, S. (2004). Preparing teachers in evidence-based practices for young children with autism. *School Psychology Review*, 33(4), 510-525.
- Leyser, Y., Zeiger, T., & Romi, S. (2011). Changes in self-efficacy of prospective special and general education teachers: Implication for inclusive education. *International Journal of Disability, Development and Education*, 58(3), 241-255.
- Li, Q., & Ni, Y. (2009). Dialogue in the elementary school mathematics classroom: A comparative study between expert and novice teachers. *Frontiers of Education in China*, 4(4), 526-540.
- Loiacono, V., & Allen, B. (2008). Are special education teachers prepared to teach the increasing number of students with autism? *International Journal of Special Education*, 23(2), 120-127.
- Lopes, J. A., Monteiro, I., Sil, V., Rutherford, R. B., & Quinn, M. (2004). Teachers' perceptions about teaching problem students in regular classrooms. *Education & Treatment of Children (ETC)*, 27(4), 394-419.
- Lopez-Fernandez, O., & Molina-Azorin, J. (2011). The use of mixed methods research in the field of behavioural sciences. *Quality & Quantity*, 45(6), 1459-1472.
- Low, H., & Lee, L. (2011). Teaching of speech, language and communication skills for young children with severe Autism Spectrum Disorders: What do educators need to know? *New Horizons in Education*, 59(3), 16-27.

- Lyons, V., & Fitzgerald, M. (2007). Asperger (1906-1980) and Kanner (1894-1981), the two pioneers of autism. *Journal of Autism and Developmental Disorders*, 37(10), 2022-2023.
- MacFarlane, J. R., & Kanaya, T. (2009). What does it mean to be autistic? Inter-state variation in special education criteria for autism services. *Journal of Child and Family Studies*, 18(6), 662-669.
- Magiera, K., & Zigmond, N. (2005). Co-teaching in middle school classrooms under routine conditions: Does the instructional experience differ for students with disabilities in co-taught and solo-taught classes. *Learning Disabilities Research and Practice*, 20(2), 79-85.
- Martin, J. (2009). Using the principles of intentional teaching to communicate effectively with parents. *Exchange*, 16 (185), 53-56.
- Mechling, L. C., Gast, D. L., & Cronin, B. A. (2006). The effects of presenting high-preference items, paired with choice, via computer-Based video programming on task completion of students with autism. *Focus On Autism & Other Developmental Disabilities*, 21(1), 7-13.
- Mesibov, G. B., & Shea, V. (2010). The TEACCH Program in the era of evidence-based practice. *Journal of Autism & Developmental Disorders*, 40(5), 570-579.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey Bass.
- Mertens, D. M., & McLaughlin, J. A. (2004). *Research and evaluation methods in special education*. Thousand Oaks, CA: Corwin.

- Moes, D. R. (1998). Integrating choice-making opportunities within teacher-assigned academic tasks to facilitate the performance of children with autism. *Journal of the Association for Persons with Severe Handicaps*, 23(4), 319-328.
- Mohrman, S. A., & Lawler, E. E. (1996). Motivation for school reform. In S. H. Fuhrman & J. A. O'Day (Eds.), *Rewards and reform: Creating educational incentives that work* (pp. 115–143). San Francisco, CA: Jossey-Bass.
- Morrier, M. J., Hess, K. L., & Heflin, L. J. (2011). Teacher training for implementation of teaching strategies for students with Autism Spectrum Disorders. *Teacher Education and Special Education*, 34(2), 119-132.
- Naggar Gaad, E. E. (2004). Pre-service teachers attitudes towards a career in special education in the United Arab Emirate. *College Student Journal*, 38(4), 619-634.
- Nieto, S. (2012). Teaching, caring, and transformation. *Knowledge Quest*, 40(5), 28-31.
- Notbohm, E., & Zysk, V. (2010). *1001 great ideas for teaching and raising children with autism or Asperger's*. Arlington, TX: Future Horizons.
- Obiakor, F. E. (2011). Maximizing access, equity, and inclusion in general and special education. *Journal of the International Association of Special Education*, 12(1), 10-16.
- Oda, A. Y. (2007). David Elkind and the crisis of adolescence: Review, critique, and applications. *Journal of Psychology & Christianity*, 26(3), 251-256.
- Olley, J. G. (1999). Curriculum for students with autism. *The School Psychology Review*, 28(4), 595-607.
- Olley, J. G., DeVellis, R.F., DeVellis, B.M., Wall, A.J. & Long, C.E. (1981). The autism attitude scale for teachers. *Exceptional Children*, 47(5), 371-372.

- Onwuegbuzie, A., Slate, J., Leech, N., & Collins, K. (2009). Mixed data analysis: Advanced integration techniques. *International Journal of Multiple Research Approaches*, 3(1), 13- 33.
- O'Connor, I., & Klein, P. (2004). Exploration of strategies for facilitating the reading comprehension of high-functioning students with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, 34(2), 115-127.
- O'Sullivan, M., MacPhail, A., & Tannehill, D. (2009). A career in teaching: Decisions of the heart rather than the head. *Irish Educational Studies*, 28(2), 177-191.
- Owen-DeSchryver, J. S., Carr, E. G., Cale, S. I., & Blakeley-Smith, A. (2008). Promoting social interactions between students with Autism Spectrum Disorders and their peers in inclusive school settings. *Focus on Autism & Other Developmental Disabilities*, 23(1), 15-28.
- Oyserman, D. (2002). Values, psychological perspectives. In *International Encyclopedia of the Social and Behavioral Sciences*. (Vol. 22, pp. 16150-16153). New York, N.Y.: Elsevier Science.
- Papalia, Olds, & Feldman. (2009). *Human development*. (11th ed., Rev. ed.). New York, NY: McGraw Hill.
- Park, M., & Chitiyo, M. (2011). An examination of teacher attitudes towards children with autism. *Journal of Research in Special Educational Needs*, 11(1), 70-78.
- Park, M., & Chitiyo, M. (2009). A proposed conceptual framework for teachers' attitudes towards children with autism. *Southeastern Teacher Education Journal*, 2(4), 43-56.

- Park, M., Chitiyo, M., & Choi, Y. (2010). Examining pre-service teachers' attitudes towards children with autism in the USA. *Journal of Research in Special Educational Needs*, 10(2), 107-114.
- Peel, D. (2005). Peer observation as a transformatory tool?. *Teaching In Higher Education*, 10(4), 489-504.
- Pendergast, D., Garvis, S., & Keogh, J. (2011). Pre-service student-teacher self-efficacy beliefs: An insight into the making of teachers. *Australian Journal of Teacher Education*, 36(12), 46-57.
- Pennsylvania Department of Education. (2012). Chapter 49-2 final form regulations. Retrieved from [http://www.portal.state.pa.us/portal/server.pt/community/chapter\\_49/8627/chapter\\_49-2\\_final\\_form\\_regulations/506814](http://www.portal.state.pa.us/portal/server.pt/community/chapter_49/8627/chapter_49-2_final_form_regulations/506814)
- Perrin, C. J., & Neef, N. A. (2012). Further analysis of variables that affect self-control with aversive events. *Journal of Applied Behavior Analysis*, 45(2), 299-313.
- Peters, J. H. (2012). Are they ready? Final year pre-service teachers' learning about managing student behaviour. *Australian Journal of Teacher Education*, 37(9), 18-42.
- Peterson, S., Schreiber, J., & Moss, C. (2011). Changing preservice teachers' beliefs about motivating students. *Teaching Educational Psychology*, 7(1), 27-39.
- Pham, H. L. (2012). Differentiated instruction and the need to integrate teaching and practice. *Journal of College Teaching & Learning*, 9(1), 13-20.
- Posserud, M. M., Lundervold, A. J., Lie, S., & Gillberg, C. (2010). The prevalence of Autism Spectrum Disorders: impact of diagnostic instrument and non-response bias. *Social Psychiatry & Psychiatric Epidemiology*, 45(3), 319-327.

- Putman, S., Smith, L. L., & Cassady, J. C. (2009). Promoting change through professional development: The place of teacher intentionality in reading instruction. *Literacy Research and Instruction*, 48(3), 207-220.
- Randi, J., Newman, T., & Grigorenko, E. L. (2010). Teaching children with autism to read for meaning: Challenges and possibilities. *Journal of Autism & Developmental Disorders*, 40(7), 890-902.
- Ratajczak, H. V. (2011). Theoretical aspects of autism: Causes –A review. *Journal of Immunotoxicology*, 8(1), 68-79.
- Ray, J. A., Pewitt-Kinder, J., & George, S. (2009). Partnering with families of children with special needs. *Young Children*, 64(5), 16-22.
- Rayner, C. (2010). Video-modelling to improve task completion in a child with autism. *Developmental Neurorehabilitation*, 13(3), 225-230.
- Reese, R., Richman, D. M., Zarcone, J., & Zarcone, T. (2003). Individualizing functional assessments for children with autism: The contribution of perseverative behavior and sensory disturbances to disruptive behavior. *Focus on Autism And Other Developmental Disabilities*, 18(2), 89-94.
- Rehfeldt, R., & Chambers, M. R. (2003). Functional analysis and treatment of verbal perseveration displayed by an adult with autism. *Journal of Applied Behavior Analysis*, 36(2), 259-261.
- Riveros, A., Newton, P., & Burgess, D. (2012). A situated account of teacher agency and learning: Critical reflections on professional learning communities. *Canadian Journal of Education*, 35(1), 202-216.

- Rodríguez, I. R., Saldaña, D., & Javier Moreno, F. F. (2012). Support, inclusion, and special education teachers' attitudes toward the education of students with Autism Spectrum Disorders. *Autism Research & Treatment*, 1-8.
- Rogers, S. J., & Vismara, L. A. (2008). Evidence-based comprehensive treatments for early autism. *Journal of Clinical Child and Adolescent Psychology*, 37(1), 8-38.
- Rosenthal, R. & Jacobson, L. (1966). Teachers' expectancies: Determinants of pupils' IQ gains. *Psychological Reports*, 19(1), 115-118.
- Rubin, H. J., & Rubin, I. S. (1995). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA: Sage.
- Ruble, L.A., Usher, E.L., & McGrew, J.H. (2011). Preliminary investigation of the sources of self-efficacy among teachers of students with autism. *Focus on Autism and other Developmental Disabilities*, 26(2), 67-74.
- Ryan, J. B., Hughes, E. M., Katsiyannis, A., McDaniel, M., & Sprinkle, C. (2011). Research-based educational practices for students with Autism Spectrum Disorders. *Teaching Exceptional Children*, 43(3), 56-64.
- Ryan, K. (1974). *Survival is not good enough: Overcoming the problems of beginning teachers*. Washington, D.C.: American Federation of Teachers.
- Sack, J. (2005). Divide over co-teaching widens in Florida. *Education Week*, 25(4), 26-28.
- Safran, S. (2008). Why youngsters with Autistic Spectrum Disorders remain underrepresented in special education. *Remedial & Special Education*, 29(2), 90-95.

- Sahakian, W.S. (1976). *Introduction to the psychology of learning*. Chicago, IL: Rand McNally.
- Sari, H., Celikoz, N., & Secer, Z. (2009). An analysis of pre-school teachers' and student teachers' attitudes to inclusion and their self-efficacy. *International Journal of Special Education*, 24(3), 29-44.
- Saulnier, C.A., & Venntola, P.E. (2012). *Essentials of Autism Spectrum Disorders evaluation and assessment*. Hoboken, NJ: Wiley.
- Sazak Pinar, E., & Sucuoglu, B. (2011). Turkish teachers' expectancies for success in inclusive classrooms. *Educational Sciences: Theory and Practice*, 11(1), 395-402.
- Scheuermann, B., Webber, J., Boutot, E., & Goodwin, M. (2003). Problems with personnel preparation in Autism Spectrum Disorders. *Focus on Autism & Other Developmental Disabilities*, 18(3), 197-206.
- Schopler, E., Mesibov, G. B., & Hearsey, K. (1995). Structured teaching in the TEACCH system. In E. Schopler & G. B. Mesibov (Eds.), *Learning and cognition in autism* (pp. 243–267). New York, NY: Plenum.
- Scott, S. (2003). Innovative use of teaching repertoire: A study in transfer of complex strategies into classroom practice by novice teachers. *European Journal of Teacher Education*, 26(3), 365-381.
- Sheehey, P., & Sheehey, P. (2007). Elements for successful parent-professional collaboration: The fundamental things apply as time goes by. *Teaching Exceptional Children Plus*, (4)2, 1-12.



- Shelton, T. (2012). Curricular supports for students with Autism Spectrum Disorder (ASD) in inclusive literacy classrooms. *Pennsylvania Reads, 11*(3), 46-54.
- Silberman, M. L. (1969). Behavioral expression of teachers' attitudes toward elementary school students. *Journal of Educational Psychology, 60* (5), 402-407.
- Silverman, J. C. (2007). Epistemological beliefs and attitudes toward inclusion in preservice teachers. *Teacher Education and Special Education, 30*(1), 42-51.
- Simpson, R. L. (2004). Finding effective intervention and personnel preparation practices for students with Autism Spectrum Disorders. *Exceptional Children, 70*(2), 135-144.
- Skibo, H., Mims, P., & Spooner, F. (2011). Teaching number identification to students with severe disabilities using response cards. *Education and Training in Autism and Developmental Disabilities, 46*(1), 124-133.
- Smith, M.L., & Glass, G.V. (1987). *Research and evaluation in education and the social sciences*. Englewood Cliffs, NJ: Prentice-Hall.
- Stahl, L., & Pry, R. (2005). Attentional flexibility and perseveration: Developmental aspects in young children. *Child Neuropsychology, 11*(2), 175-189.
- Stichter, J., Crider, G., Moody, M., & Kay, D. (2007). Developing an outcome-based curricular framework for employing evidence-based practices in autism. *Beyond Behavior, 16*(2), 3-17.
- Stigler, J. W., Gonzalez, P., Kawanaka, T., Knoll, S., & Serrano, A. (1999). *The TIMSS videotape classroom study: Methods and findings from an explanatory research project on eighth-grade mathematics instruction in*

*Germany, Japan, and the United States (No. NCES 99-074)*. Washington, DC: US Government Printing Office.

- Stipek, D. (2012). Context matters: effects of student characteristics and perceived administrative and parental support on teacher self-efficacy. *Elementary School Journal*, 112(4), 590-606.
- Stribling, P., Rae, J., & Dickerson, P. (2009). Using conversation analysis to explore the recurrence of a topic in the talk of a boy with an Autism Spectrum Disorder. *Clinical Linguistics & Phonetics*, 23(8), 555-582.
- Swabey, K., Castleton, G., & Penney, D. (2010). Meeting the standards? Exploring preparedness for teaching. *Australian Journal of Teacher Education*, 35(8), 29-46.
- Swackhamer, L., Koellner, K., Basile, C., & Kimbrough, D. (2009). Increasing the self-efficacy of inservice teachers through content knowledge. *Teacher Education Quarterly*, 36(2), 63-78.
- Swan, B. G., Wolf, K. J., & Cano, J. (2011). Changes in teacher self-efficacy from the student teaching experience through the third year of teaching. *Journal of Agricultural Education*, 52(2), 128-139.
- Syriopoulou-Delli, C. K., Cassimos, D. C., Tripsianis, G. I., & Polychronopoulou, S. A. (2012). Teachers' perceptions regarding the management of children with Autism Spectrum Disorders. *Journal of Autism and Developmental Disorders*, 42(5), 755-768.
- Sze, S. (2009). A literature review: Pre-service teachers' attitudes toward students with disabilities. *Education*, 130(1), 53-56.

- Taskin-Can, B. (2011). The perceptions of pre-service teachers concerning constructivist perspectives to teaching. *Journal of Baltic Science Education*, 10(4), 219-228.
- Terrell, S. R. (2012). Mixed-Methods Research Methodologies. *Qualitative Report*, 17(1), 254-280.
- Titone, C. (2005). The philosophy of inclusion: Roadblocks and remedies for the teacher and the teacher educator. *Journal of Educational Thought*, 39, 7-32.
- Tobin, R. (2008). Conundrums and the differentiated literacy classroom. *Reading Improvement*, 45(4), 159-169.
- Tolman, E. C., & Postman, L. (1954). Learning. *Annual Review of Psychology*, 5(1), 27-56.
- Tomlinson, C. (2000). Differentiated instruction: can it work? *Education Digest*, 65(5), 25-31.
- Tomlinson, C. (2008). The goals of differentiation. *Educational Leadership*, 66(3), 26-30.
- Trent, A., Blum, T., McLaughlin, M., & Yocom, D. (2005). Japanese method gets a Wyoming accent: Lab school in Laramie adapts lesson study concept to its own needs. *Journal of Staff Development*, 26(1), 53-56.
- Tschannen-Moran, M., & Hoy, A. (2007). The differential antecedents of self-efficacy beliefs of novice and experienced teachers. *Teaching and Teacher Education*, 23, 944-956.
- Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17, 783-805.

- Ulke-Kurkcuoglu, B., & Kircaali-Iftar, G. (2010). A comparison of the effects of providing activity and material choice to children with Autism Spectrum Disorders. *Journal of Applied Behavior Analysis*, 43(4), 717-721.
- U.S. Department of Education, National Center for Educational Statistics. (2010). Fast facts. Retrieved from <http://nces.ed.gov/fastfacts/display.asp?id=64>
- U.S. Department of Education, National Center for Education Statistics (2011). Digest of education statistics. Retrieved from <http://nces.ed.gov/fastfacts/display.asp?id=59>
- VanderStoep, S.W., & Johnston, D.D. (2009). *Research methods for everyday life: Blending qualitative and quantitative approaches*. Thousand Oaks, CA: Jossey-Bass.
- Veal, W. R. (2002). Content specific vignettes as tools for research and teaching. *Electronic Journal of Science Education*, 6(4), 1-37.
- Vismara, L. A., & Rogers, S. J. (2008). The Early Start Denver Model: A case study of an innovative practice. *Journal of Early Intervention*, 31(1), 91-108.
- Ware, H., & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *Journal of Educational Research*, 100(5), 303-310.
- Weisskirch, R. S. (2006). Changes in perceptions of adolescents and of adolescence from course instruction. *College Student Journal*, 40(2), 393-399.
- Whalon, K., & Hanline, M. (2008). Effects of a reciprocal questioning intervention on the question generation and responding of children with Autism Spectrum Disorder. *Education and Training in Developmental Disabilities*, 43(3), 367-387.

- Whitby, P., Travers, J. C., & Harnik, J. (2009). Academic achievement and strategy instruction to support the learning of children with high-functioning autism. *Beyond Behavior, 19*(1), 3-9.
- White, S., Scahill, L., Klin, A., Koenig, K., & Volkmar, F. (2007). Educational placements and service use patterns of individuals with Autism Spectrum Disorders. *Journal of Autism & Developmental Disorders, 37*(8), 1403-1412.
- Willis, C. (2009). *Teaching young children with Autism Spectrum Disorder*. Beltsville, MD: Gryphon House.
- Willis, C. (2012). Young children with Autism Spectrum Disorder: Strategies that work. *Teaching Young Children, 5*(4), 81-88.
- Willis, S., & Brophy, J. (1974). Origins of teachers' attitudes toward young children. *Journal of Educational Psychology, 66*(4), 520-529.
- Winzer, M. A. (2009). *From integration to inclusion: A history of special education in the 20<sup>th</sup> century*. Washington, D.C.: Gallaudet University.
- Woodbury-Smith, M., Kiln, A., Volkmar, F. (2005). Asperger's syndrome: A comparison of clinical diagnoses and those made according to the ICD-10 and DSM-IV. *Journal of Autism & Developmental Disorders, 35*(2), 235-240.
- Woodcock, S., Hemmings, B., & Kay, R. (2012). Does study of an inclusive education subject influence pre-service teachers' concerns and self-efficacy about inclusion? *Australian Journal of Teacher Education, 37*(6), 1-11.
- Yin, R. K. (2009). *Case study research: Design and methods*. (4<sup>th</sup> ed.). Thousand Oaks, CA: Sage.
- Youyan Nie, Y., Shun, L., & Liao, A. (2012). The teacher efficacy scale: A reliability and

validity study. *Asia-Pacific Education Researcher*, 21(2), 414-421.

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability and reporting findings. *Theory & Practice in Language Studies*, 3(2), 254-262.

## APPENDIX A

### *Teacher Scale of Efficacy* (Tschannen-Moran & Woolfolk Hoy, 2001)

<h2 style="margin: 0;">Teacher Beliefs</h2> <p style="margin: 5px 0 0 0;"><i>Directions:</i> Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.</p> <p style="margin: 0 0 0 0;"><b>Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.</b></p>		<p style="margin: 0;">This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.</p>								
		None at all	Very Little	Some Degree	Quite A Bit	A Great Deal				
1.	How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2.	How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3.	How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5.	To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6.	How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.	How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8.	How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9.	To what extent can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10.	To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11.	How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12.	How well can you implement alternative teaching strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

## APPENDIX B

### Open-Ended Vignette Survey Instrument

# **Preservice Educators' Preparedness to Teach Students with Autism Spectrum Disorder**

The prevalence of Autism Spectrum Disorder (ASD) has grown tremendously in recently years. The population of students with ASD in school settings is also rising. The purpose of this survey is to explore how preservice educators would respond to challenging social, behavioral, and academic situations with students with ASD in inclusive school settings.

## **PART ONE: BACKGROUND INFORMATION**

1. Major \_\_\_\_\_
2. Anticipated graduation date (month, year) \_\_\_\_\_
3. Have you taken a special education class? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, how many \_\_\_\_\_
4. Please describe any experiences working with students with ASD?

## **PART TWO: RESPONSES TO VIGNETTES**

*Instructions:* The following four vignettes describe a social, academic, or behavioral classroom challenge of a student with ASD. Please answer the questions on the proceeding pages to describe your response to the situation defined in each vignette.



### **Vignette #1**

James, a first grade student, has an excellent sight word vocabulary and reads with advanced expression and rate. However, James comprehends little of what he reads. While reading even simple passages, James struggles to respond correctly to basic questions of story structure (i.e. Who are the characters? What is the plot?).

1. As the teacher in this scenario, what goal might you set for this child?
2. What resources might you use to meet this goal?
3. What strategies might you use to help this child overcome the challenge described in the vignette?

### **Vignette #2**

Michael has a very intense interest in baseball. He can recall the batting average of every current player on the local team. Each afternoon, he monopolizes the conversation at his lunch table, talking incessantly to his peers about baseball facts and figures. Michael's classmates begin avoiding him during the lunch period.

4. As the teacher in this scenario, what goal might you set for this child?
5. What resources might you use to meet this goal?
6. What strategies might you use to help this child overcome the challenge described in the vignette?

### **Vignette #3**

Playing online computer math games is a preferred activity for Julie. When she completes her class assignments, her teacher rewards her by allowing Julie to play two computer math games. Yesterday, Julie had difficulty completing her classwork, and did not earn computer time. Julie responded by pushing over her desk and crying loudly.

7. As the teacher in this scenario, what goal might you set for this child?
8. What resources might you use to meet this goal?
9. What strategies might you use to help this child overcome the challenge described in the vignette?

### **Vignette # 4**

Matt loves to play with cellular phones. On a field trip to the zoo, a teacher uses her cell phone to take a picture of her students. Matt snatches the device from the teacher's hands and begins pressing buttons. When the teacher tries to retrieve her cell phone, Matt pushes her away forcibly.

10. As the teacher in this scenario, what goal might you set for this child?
11. What resources might you use to meet this goal?
12. What strategies might you use to help this child overcome the challenge described in the vignette?

## APPENDIX C

### Guiding Questions for Follow-up Interviews

1. What is your overall impression of the practice of including students with Autistic Spectrum Disorders (ASD) in general education classrooms?
2. What benefits or burdens do you believe inclusion of students with ASD serves?
3. What personal or professional experiences do you believe have contributed to your impression of inclusion of students with ASD?
4. How comfortable do you feel meeting the academic needs of students with ASD in a general education classroom? What experience or knowledge do you believe has produced this feeling?
5. How would you describe your knowledge base of students with ASD? What strengths and weaknesses do you possess in skills or understanding?
6. What practical experience have you had working with students with ASD? How do you think these experiences might influence your future teaching practice?
7. How comfortable do you feel addressing behavioral and social concerns of students with ASD? What experience or knowledge do you believe has produced this feeling?
8. What resources do you believe would be necessary to meet the needs of students with ASD adequately? Do you anticipate having access to these resources in your future job placement?
9. Is there anything else about your preparedness to teach students with ASD that you would like to share with me?

## APENDIX D

### Participant Cover Letter

# Indiana University of Pennsylvania

**Department of Professional Studies  
in Education**

Davis Hall, Room 303  
570 S. Eleventh Street  
Indiana, Pennsylvania 15705-1087

724-357-2400

Internet: <http://www.iup.edu>

Dear Preservice Educator,

You are invited to participate in research which will study preservice teacher self-efficacy and preparedness to educate students with Autism Spectrum Disorder (ASD). The purpose of this study is to examine the self-efficacy beliefs preservice early childhood educators and the various factors which contribute to their preparedness to meet the needs of students with ASD.

The topic of teacher self-efficacy and preparedness to work with learners with special needs has been heavily studied from a very generalist viewpoint; however, little attention has been given to specific learning needs. Consequently, much of what is known about the preparation of preservice educators to include students with ASD in general classrooms is assumed based on prescribed curricula within teacher preparation programs. The proposed study would make a significant contribution to the field by offering a very specialized perspective on teacher preparedness.

As a participant in this study, you will be asked to devote approximately 20 minutes to two survey instruments. The first survey consists of 12 questions using a 9-point scale. The second survey consists of a series of six vignettes describing common social, behavior, and academic challenges of students with ASD in inclusive classrooms. Participants will read the vignettes and describe their responses to situations, noting the knowledge, skills, or resources that would guide their decision-making.

When the survey instrument is complete, you will be asked if you would be interested in participating in a follow-up interview with the principal researcher. If you agree to participate in an individual telephone interview, you should supply your name, contact telephone number, e-mail, and address on a card which will be deposited in a box in the back on the classroom. Those who are uninterested in participating in an individual telephone interview will deposit a blank card.

The follow-up interview will require approximately 25 minutes of your time and will be digitally recorded. Participation or non-participation will not affect your status as a teaching candidate. Students who participate in the follow-up interview will receive a \$10 gift card to compensate them for their time.

Both the survey and interview questions are intended to be stimulating and challenging. However, if you feel uncomfortable at any point of this study, you may decline to answer any question or end your participation without penalty.

Your participation in this study is voluntary. Should you agree to participate in the survey but later change your mind, you may withdraw at any time by leaving the survey blank. If, after beginning the survey, you prefer not to continue, simply return your survey to the individual collecting the research materials, and any data collected from you will be destroyed. Your decision not to participate will not result in any loss of benefits to which you are otherwise entitled.

If you choose to participate, all information will be held in the strictest of confidence. You will not be identified by name. In the event the findings in this study are published, pseudonyms will be used to conceal the identities of the participants of the follow-up interview.

You may decline participation from this study at any time by notifying the principal researcher by e-mail or phone. Upon your request to withdraw, all data pertaining to your responses will be destroyed.

If you are willing to participate in this study, please sign the statement on the following page, and return to Tricia Shelton, the primary researcher. You may return the completed form to the address listed below. Please retain the second copy for yourself.

Sincerely,

Mrs. Tricia Shelton  
Principal Investigator  
102 Trotwood Drive  
Monroeville, PA 15146  
Telephone (412) 372-1454  
E-mail: wnnh@iup.edu

Dr. Mary Renck Jalongo  
Faculty Sponsor  
122 Davis Hall  
Professional Studies in Education  
Indiana University Pennsylvania  
Indiana, Pennsylvania 15705  
Telephone: (724) 357-2417  
E-mail: mjalongo@iup.edu

**This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).**

## APPENDIX E

### Interview Cover Letter



**School of Professional Studies in Education**

----- --, 2013

Dear Future Educator,

Thank you for agreeing to participate in the study, Exploring Preservice Early Childhood Educators' Self-Efficacy Beliefs and Preparedness to Teach Students with Autism Spectrum Disorder (ASD) in Inclusive Classrooms. Sharing your experiences and insight as a novice educator will provide a valuable contribution to the field of education.

Our interview is scheduled for \_\_\_\_\_ (date and time). Additionally, you indicated that you would like to be contacted at \_\_\_\_\_ (phone number). If this day/time is no longer convenient for you, please contact the principal researcher as soon as possible.

The interview will be digitally recorded and should last about 25 minutes. In accordance with federal regulations, data from the taped interviews will be locked in the researcher's home office and maintained for 3 years.

If you have agreed to participate in the interview portion of this study, but have now changed your mind, you may withdraw by contacting the principal investigator via email ([wnnh@iup.edu](mailto:wnnh@iup.edu)). Both the survey and interview questions are intended to be stimulating and challenging. However, if you feel uncomfortable at any point of this study, you may decline to answer any question. You also may choose to withdraw from the study by requesting to stop the interview process, at which time all collected data will be destroyed.

If you choose to participate, all information will be held in the strictest of confidence. You will not be identified by name. In the event the findings in this study are published, pseudonyms will be used to conceal the identities of the participants of the follow-up interview.

At the conclusion of the interview, you will be asked to provide an address where your \$10 gift card can be sent. Please feel free to call me at (412) 372-1454 or e-mail me at [wnnh@iup.edu](mailto:wnnh@iup.edu) if you have any questions or concerns regarding the study.

If you are willing to participate in this study, please sign the statement on the following page, and return to Tricia Shelton, principal investigator via postal mail or as a scanned e-mail attachment to [wnnh@iup.edu](mailto:wnnh@iup.edu). Please retain the second copy for yourself.

Sincerely,

Mrs. Tricia Shelton  
Principal Investigator  
102 Trotwood Drive  
Monroeville, PA 15146  
Telephone (412) 372-1454  
E-mail: wnnh@iup.edu

Dr. Mary Renck Jalongo  
Faculty Sponsor  
122 Davis Hall  
Professional Studies in Education  
Indiana University Pennsylvania  
Indiana, Pennsylvania 15705  
Telephone: (724) 357-2417  
E-mail: mjalongo@iup.edu

**This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).**

## APPENDIX F

### Voluntary Consent Form

# Indiana University of Pennsylvania

Department of Professional Studies  
in Education  
Davis Hall, Room 303  
570 S. Eleventh Street  
Indiana, Pennsylvania 15705-1087

724-357-2400  
Internet: <http://www.iup.edu>

### **VOLUNTARY CONSENT FORM:**

I have read and understand the information on this form and I consent to volunteer to be a subject in this study. I understand that my responses are completely confidential and that I have the right to withdraw at any time. I have received an unsigned copy of this informed consent form to keep in my possession and will return the other copy via postal mail or as a scanned e-mail attachment to [wnnh@iup.edu](mailto:wnnh@iup.edu).

**Name (PLEASE PRINT)**

**Signature**

**Date**

**Phone number or location where you can be reached**

**Best days and times to reach you**

**I certify that I have explained to the above individual the nature and purpose, the potential benefits, and possible risks associated with participating in this research study, have answered any questions that have been raised, and have witnessed the above signature.**

---

**Date**

---

**Investigator's Signature**

**This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone: 724/357-7730).**



APPENDIX G

Interview Follow-up Letter



**School of Professional Studies in Education**

----- --, 2013

Dear Future Educator,

Thank you for taking time out of your busy schedule to talk with me last week. Your descriptions of your preparedness to teach students with ASD were very valuable to this research. I appreciate your willingness to discuss your experiences and insight with me. Please accept the enclosed \$10 gift card as a token of appreciation.

Please contact me at (412) 372-1454 or [wnnh@iup.edu](mailto:wnnh@iup.edu) if you have any questions about this research.

Thank you for your help!

Sincerely,

Tricia Shelton, Principal Investigator

Indiana University of Pennsylvania

102 Trotwood Drive

Monroeville, PA 15146

[wnnh@iup.edu](mailto:wnnh@iup.edu)

(412) 372-1454

## APPENDIX H

### Researcher-Developed Rubric for Open-Ended Vignette Survey Responses

	No Response 0	Basic 1	Proficient 2	Advanced 3
Learning Goal	No response or an unrelated response is provided.	Learning goal provided is general and not observable.	Learning goal provided is observable and addresses the immediate and underlying problems in the vignette.	Learning goal is observable and addresses both immediate and underlying challenges. Measureable outcomes are also included.
Resources	No response or an unrelated response is provided.	Resources may be appropriate, but are stated generally. Resources are unavailable or inaccessible in inclusive classrooms.	Resources suggested are specific and appropriate. Resources are available in inclusive classrooms.	Resources suggested are specific and appropriate, and commonly available in inclusive classrooms. The purpose of each resource is described.
Strategies	No response or an unrelated response is provided.	Strategies suggested may be appropriate, but are not descriptive.	Strategies are described with some detail. Strategies address the immediate challenge in the vignette only.	Strategies offered address the immediate and underlying challenges in the vignette, and are described thoroughly.