2022

General Education Elementary Teacher Competencies and Training in Teaching Children With Autism in the U.S. Virgin Islands

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Walden University
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Abstract

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MA, University of the Virgin Islands, 2014

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Dissertation Submitted in Partial Fulfillment

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Doctor of Philosophy

Human and Social Services

Walden University

February 13, 2022

Abstract

The number of students diagnosed with autism spectrum disorder (ASD) is increasing. The overall problem in this study focused on showing how a lack of teacher training in ASD-specific courses could result in a lack of competencies in meeting the educational needs of children with autism in an inclusive setting. The purpose of this nonexperimental quantitative cross-sectional study was to determine if a difference exists in four teaching competencies among general education elementary teachers teaching children with autism in the general education classroom in the U.S. Virgin Islands based training. The theoretical framework was grounded in Medley's teaching competence theory that outlines how general education teachers use teaching competencies to help a student with autism learn in an inclusive setting. The independent categorical variable was the two groups of teachers: general education elementary teachers with training in ASD-specific courses and teachers with no training in ASD-specific courses. The dependent variables were continuous and represented the four teaching competencies: attitude, knowledge, skills and agency. The four dependent variables were measured using Mu et al.'s Learning in Regular Classroom Teacher's Professional Competence Scale. A one-way MANOVA was used to analyze the significant difference between the variables in the study. Results suggest that training did not have any significant differences on the four teaching competencies. The results of this study have potential implications for positive social change by increasing awareness of the impact of teaching competencies in academic functioning of children with ASD in the general education classroom.

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Dedication

This doctoral study is dedicated to God and my family. They have never given up on me. This academic journey has been one full of unknown twist and turns and at the same time filled with increased anticipation. I will be forever grateful to my husband, Hayse, and my three children, Rolani, Haysely, and Haysiann. They inspired me and gave me courage in accomplishing this study. Thank you for your continual support and love.

Acknowledgments

I would not have been able to complete this incredible journey without the support of my family and friends. I especially thank my husband, Hayse, and amazing children, Rolani, Haysely, and Haysiann, for always providing words and hugs of love and encouragement.

I thank Dr. Nicole Hamilton for agreeing to be the chairperson of my doctoral study. You are the best chairperson anyone could have asked for. Thank you for continuously inspiring, challenging, guiding, and encouraging me to do my best in everything. Thank you for working so hard sharing innovative ideas and priceless input.

Thank you, Dr. Glenn Starks, my second committee member, for your keen insight and support. To my university research reviewer, Dr. Gregory Hickman, thank you for working so hard to help me make this research accurate and effective. I would like to mention my academic advisor, Dr. La Toya Johnson, who patiently helped me navigate this challenging process. Thank you for offering professional advice and assistance. You always insisted on an update regarding where I was in the doctoral process. You are truly an agent of change.

To the general elementary education teachers willing to participate in my research study, thank you very much. Finally, to all who helped on this academic journey, including family, friends, colleagues, professors, and well-wishers, thank you for your love and continual support and encouragement.

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Chapter 1: Introduction to the Study

Introduction

The need to include children diagnosed with autism in the regular classroom has gained support from legislation, litigation, policy, advocacy, funding, and parental support globally (Busby et al., 2012; Hughes, 2011). Growing research has revealed that children with autism are now entering public schools with typically developing children and are spending more than 40% of their day in an inclusive environment (Hughes, 2011; U.S. Department of Education, 2004). The activities are causing general education teachers to experience stress and tension in the workplace (Segall & Campbell, 2012). Elementary public education teachers are not prepared to handle the challenges that may come with autism (Brock & Carter, 2013). Additionally, information is scarce on the teaching competencies used in the classroom by general education teachers and whether these competencies differ for teachers, as per their training, to address the challenges in working with children with autism (Brock & Carter, 2013; Saddler, 2014; Skaalvik & Skaalvik, 2017).

It was highlighted in Cavaradossi and Solomon (2016) findings that teachers who have had training in autism spectrum disorder (ASD) are better able to resolve conflicts that come with teaching children with autism in inclusive classrooms. Conversely, Mu et al. (2015) found that general education teachers who lacked training and essential educational skills in autism could be a predictor for children with autism to fail in these classrooms. However, the focus of this quantitative cross-sectional study was to determine the differences between the teaching competencies for general education

elementary teachers who have received training in ASD-specific courses who did not have no training teaching children with autism in the general education classroom in the United States Virgin Islands (USVI).

In this chapter, I discuss the historical background of autism and the teaching competencies needed to address the educational development of children with autism. I explain the statement of the problem, the nature of the study, the purpose of the research, and the theoretical approach of the study. A list of term definitions is highlighted. Also, I explain the assumptions, scope, limitations, and delimitations of the study, the implications to positive social change, the significance of the research, and a summary.

Background of the Study

The high rate of students with autism in mainstream classrooms at the state, national, and international levels is a growing problem for general education elementary teachers (Loiacono & Valenti, 2013). Many teachers lack training in autism teaching competencies to teach children with autism effectively. Past research has revealed that although many researchers discussed the issues with this population, but information was limited in providing the professional teaching community on how autism teaching competencies could be used in inclusive settings to enhance student learning (McCulloch & Martin, 2011; Mu et al., 2015).

ASD is the fastest growing disability, ranking as the sixth most commonly classified disability in the United States (Wingate et al., 2014). Characteristics of the disorder are noticeable in children who cannot talk, solve problems, think logically, or analyze information. Also, children with ASD often engage in disruptive behaviors

during teaching time (Mohammadzaheri et al., 2015). At the Columbia University Medical Center several studies were conducted in which researchers found that autism could develop from synaptic breaks in a child's brain development during infancy directly related to genetic defects in the brain (Autism Speaks, 2014; Busby et al., 2012). During an investigation with 26 children affected by autism and 22 other children without ASD, researchers found differentiating features among the two groups (Busby et al., 2012). The results suggest that the brain density of children with ASD will be reduced by 16% in their late teen years. Teachers need to be trained in ASD-specific courses regularly to become familiar with the disorder and to meet challenges with a positive approach in the general education classroom.

Highlights from a national survey showed that in every 88 children, one child is diagnosed with autism disorder (Hart & Malian, 2013). The prevalence of autism has increased from 10% to 17% each year since 2000 and is expected to grow (Hart & Malian, 2013). Moreover, there is a 15% to 20% chance that families with one child diagnosed are more than likely to have a second or third child diagnosed with ASD (Mohammadzaheri et al., 2015). Although the survey did not mention the USVI, families living in the USVI with children diagnosed with autism could experience the same issues.

Furthermore, recent research has revealed that the inclusion model of instruction has introduced many challenges for general education teachers who lack training in ASD-specific courses (Busby et al., 2012; Dessemonlet & Bless, 2013; Masterson et al., 2014; Saddler, 2014). The requirements of the individualized education program (IEP) procedures, record-keeping, and data collection for a student with autism in general

education classrooms are too extensive and redundant to follow (Hughes, 2011). There is also a lack of administrative support, training, and funding and limited access to resources and unrealistic expectations of what teachers should accomplish for students with autism; heavy workloads are too demanding (Coates et al., 2017). These daily demands made it a challenging experience for teachers to function efficiently in meeting the needs of children with autism in inclusive classrooms (Brock & Carter, 2013; Hart & More, 2013; Mu et al., 2015).

Teachers in the USVI are experiencing similar challenges that other teachers have been experiencing in the United States and developing countries (Wehmeyer & Patton, 2017). General education teachers have indicated they have a limited understanding of autism and are unable to identify warning signs and features related to ASD (Masterson et al., 2014; Saddler, 2014; Travers et al., 2013). Masterson et al. (2014) concluded that general education teachers could enroll in mandatory ASD-specific courses followed by intense classes regularly. Another researcher purported that introductory courses in ASD have provided teachers with a detailed understanding of the different aspects of autism, such as the biological, theoretical, etiological, diagnostic, assessment, and treatment for autism (Sharma, & Salend, 2016). Teachers at both undergraduate and graduate levels who actively participated in these courses should be prepared for these children (Hart & Malian, 2013; Masterson et al., 2014).

Teachers might differ in opinions and beliefs about teaching children with autism in the least restrictive environment (Busby et al., 2012). However, federal law requires teachers to ensure that children with autism and other developmental disabilities receive

the best care to help them learn in a safe environment (Busby et al., 2012). As the prevalence of ASD increases, there is a greater need for general education teachers to provide services and serve a more substantial number of students with disabilities in the inclusive setting (U.S. Department of Education, 2004). The Department of Education explained that these needs would continue to create pressing educational challenges for school officials and teachers. These challenges have created a need for teachers and other education officials in the USVI to focus their attention on meeting the needs of all students in inclusive classrooms.

Cavaradossi and Solomon (2016) and Saddler (2014) suggested that general elementary education teachers need specialized training in instructional techniques, coordinating services, and a unique curriculum that engages teachers in multiple opportunities to observe and participate in successful inclusive education. Other researchers have purported that empirical evidence shows that to understand autism teaching competencies, general education teachers need essential educational skills in autism; otherwise, children with autism fail to progress (Saddler, 2014; Segall & Campbell, 2012). Also, general education teachers must provide a clear explanation to children with autism, have confidence in their abilities, and practice enthusiasm while teaching (Hart & Malian, 2013; Masterson et al., 2014). Additionally, administrators must provide teachers with adequate training and support diverse clinical experiences to teach children with autism (Ashbaker & Morgan, 2012). These experiences would broaden teachers' knowledge, skills, and attitudes in the community, classrooms, and schools serving children with autism.

Problem Statement

There is an increasing number of students diagnosed with ASD (Stahmer, 2014). The high prevalence of children with autism highlighted in the 2010 USVI Decennial Census data cited that over 15,903 students diagnosed with autism enrolled in public schools (Kids Count, 2013). Of the total amount, 674 students enrolled in St. Thomas and St. John District and 883 students in the St. Croix district received special education services. The Decennial Census further reported that for the 2007–2008 school year, the overall estimated prevalence of ASD for students ages 5 to 19 years enrolled in special education programs during the school year was 2.8% (Erickson, 2012; Wehmeyer & Patton, 2017). This information from the census suggests that due to the rate of students with autism in the USVI, general education elementary teachers need training in autism competencies to meet the needs of these students.

Geschwind (2015) documented ASD as a lifelong disability associated with morbidity conditions, deficits in social communication, interaction, reasoning, and repetitive dysfunctional behavior. The American Psychiatric Association (APA, 2013) further explained how autism is a spectrum disorder with a diagnosis occurring on a continuum from mild to severe. Researchers have documented that children suspected of having ASD vary significantly, exhibiting skills below their age level in multiple areas of development (Anagnostou et al., 2014; Gowen & Hamilton, 2013).

Medical testing, physical examinations, and physical symptoms do not readily detect ASD (Gowen & Hamilton, 2013). Autism is a spectrum disorder that affects each student differently in varying degrees (Hughes, 2011). Kurth and Mastergeorge (2010)

stated that 67% of children with autism have a learning disability, and 30% to 75% function below the average intelligence scale. Therefore, learning about autism is a daunting experience for general education elementary teachers unprepared to deal with such a complex disorder (Hughes, 2011). However, perhaps general education teachers are not receiving training to manage this situation.

A general education elementary teacher in the USVI is trained to teach general education courses at the elementary (K–6) level (Dervent, 2015). Elementary education teachers in the USVI must graduate from a recognized accredited institution and have a minimum of 42 semester credit hours in six general academic areas. Also, elementary education teachers are required to hold a minimum of 36 semester credit hours in professional education in a planned program of study, which includes a foundation of knowledge, educational psychology, educational technology/comparable computer courses, exceptional learning, and student teaching. Educational psychology and specialized education courses are considered ASD-specific courses (Virgin Islands Department of Education, 2016). However, taking these general courses alone is a significant problem for teachers in the general classroom because the current programs are insufficient for preparing teachers to teach the growing number of children with autism (Masterson et al., 2014).

In this study, I focused on the following areas of competency: knowledge, attitude, skills, and agency (Mu et al., 2015). *Knowledge* allows teachers to be prepared to promote the academic, social, emotional, and practical learning of all learners (Mu et al., 2015; Walkins & Donnelly, 2013). Male (2011) explained that competence in *attitude*

means that teachers are willing to assist students with diverse problems to feel confident in their classroom. With *skills*, teachers must understand different teaching approaches and correct academic responses when teaching students with autism (Allday, 2012; Baldiris et al., 2016; Mu et al., 2015). Competency in *agency* includes working with other educational professionals, community organizations, and families of students with autism (Mu et al., 2015). These competencies are essential for understanding and using best practices in teaching children with autism (Baldiris et al., 2016). However, there is a lack of information on how teachers should use the teaching competencies in the general classroom to teach children with autism. Thus, teachers are not meeting the competency needed in teaching children in the inclusive classroom (Hughes, 2011).

According to Zwart et al. (2018), children with disabilities represent a vulnerable group of citizens. Thus, specific laws and policies in the United States and Canada promote full participation and integration for disabled children into society, including educational institutions (Habtes et al., 2012; Loiacono & Valenti, 2013). Authors mentioned that current laws—such as the public law -94-142 (Dunn, 2013), the Rehabilitation Act of 1973 (Chamusco, 2017), and Individual with Disabilities (Yell et al., 2006)—have introduced new opportunities for children with disabilities. Thus, teachers must carefully follow the IEP for each child with autism (Busby et al., 2012). However, this adds responsibility for them and their heavy instructional load and planning of lessons. Negative perceptions, ideas, and beliefs about ASD and other developmental disorders have created a problem among other educators in the USVI (Brown & Avila, 2021; Granger, 2016) . Both educators and administrators have not

taken this issue seriously as a significant concern, and these attitudes have influenced the need for greater awareness and support for the disorder from stakeholders.

Overall, the teaching requirements, coupled with the needed teacher competencies and training to help evaluate the individual educational needs of children with ASD, have been a topic of great debate and has remained controversial in the USVI (Habtes et al., 2012). Thus, such an attitude has directly affected students' confidence and performance in the general classroom setting (McCulloch & Martin, 2011). Many teachers throughout the districts in the USVI are worried they are not meeting the needs of other students because of a need to spend significant time modifying lessons to reach students with learning disabilities (Leber et al., 2012). Therefore, teachers advocate for more support from their governments to provide the necessary tools and training to help facilitate learning for students with autism (Stahmer, 2014).

Reports from the Individual with Disabilities Education Improvement Act assessments showed that in July 2011, 54% of districts indicated difficulty in finding qualified teachers to teach children with severe behavioral disorders, including those with autism (McCulloch & Martin, 2011). These challenges make it overwhelming for elementary teachers who lack training in teaching children with autism. Such inclusion requirements force general education elementary teachers to face challenges without proper preparation (Loiacono & Valenti, 2013). In addition, teachers admitted they lacked understanding and training in teaching children with autism and were not familiar with the psychological, social, and behavioral characteristics of students with disabilities in their classroom (Loiacono & Valenti, 2013).

Therefore, the primary focus of this nonexperimental quantitative cross-sectional study was to compare the teaching competencies of general education elementary teachers who have received training in autism having taken ASD-specific courses and general education teachers with no ASD-specific training. This is a problem for general education elementary teachers in the USVI, where a lack of preparation could result in a lack of competencies in the educational needs of children (Mu et al., 2015).

Purpose of the Study

This nonexperimental quantitative cross-sectional study was conducted to examine if a difference exists in teaching competencies for general education elementary teachers who have received training in ASD-specific courses versus those teachers who have not received training in ASD-specific courses in general education classrooms in the USVI. In this research study, the independent categorical variable was the two groups of teachers. One of the groups included general education elementary teachers with ASD-specific training, and the other consisted of teachers with no such training. The dependent variables represented the four teaching competencies of attitude, knowledge, skills, and agency. The four dependent variables were measured using the Learning in Regular Classroom Teacher's Professional Competence Scale (Test Development; LRC) developed by Mu et al. (2015). Thus, the goal was to expand the existing literature by providing in-depth information about the four teaching competencies for general education teachers who work with children diagnosed with ASD. I surveyed public education elementary teachers to gain a deeper understanding of their teaching competencies and training.

Research Questions and Hypotheses

In this study, I compared the teaching competencies between general education elementary teachers who have received training in ASD-specific courses versus those who did not receive training in teaching those with autism in the general education classroom.

RQ1: Is there a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$1: There is not a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a1: There is a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ2: Is there a significant difference in the teacher competency of attitude for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$2: There is not a significant difference in the teaching competency of attitude for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a2: There is a significant difference in the teacher competency of attitude for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ3: Is there a significant difference in the teacher competency of knowledge for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$3: There is not a significant difference in the teacher competency of knowledge for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a3: There is a significant difference in the teaching competency of knowledge for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ4: Is there a significant difference in the teacher competency of skills for general education elementary teachers in the USVI based on either having received

specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$4: There is not a significant difference in the teacher competency of skills for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a4: There is a significant difference in the teacher competency of skills for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ5: Is there a significant difference in the teacher competency of agency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$5: There is not a significant difference in the teacher competency of agency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a5: There is a significant difference in the teacher competency of agency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

Theoretical Foundation

Medley's (1977) teaching competence theory is the theoretical framework that guided this study. The theory is used to explain how teachers develop attitudes, knowledge, skills, and agency in the workplace and the community. Medley believed that when teachers create these critical attributes in their teaching career, they positively influence students' educational outcomes. The theory shows how teachers develop these essential elements of character building in students' lives and help students make decisions that could positively impact their academic journey. Additionally, Medley highlights that teachers could encourage students to be logical and strategic thinkers and purposeful and intentional learners in their classrooms.

This theory is based on five main components: (a) pre-instruction, (b) presentation, (c) learning environment, (d) student learning, and (e) professionalism (Medley, 1977). The pre-instruction component indicates that teachers should have clear directions about teaching and learning and achieving the desired outcome they want to accomplish in their classrooms. Also, teachers should be knowledgeable about their subject matter and learn to align their lessons with proper instructional planning to achieve student success. The presentation component addresses the need for teachers to be innovative, strategic, and creative in their experiences to enhance student participation and learning (Medley, 1977). Medley stated that when teachers provide a safe, supportive, and educational environment for students in their classrooms, these factors help stimulate learning for all students to excel to their highest potential. Teachers should be mindful each day as they enter their classrooms to do everything they plan in a

learning environment. To execute these plans with a positive attitude and facilitate all students with disabilities and those with no limitations to offer more learning opportunities to enhance their academic growth.

The student learning component is focused on helping teachers understand the importance of developing a consistent and pleasant environment for students to learn to achieve the desired learning outcomes they want for their students. Additionally, Medley emphasized the importance of guided instructions in the classroom. Guided instructions focus on the teacher being the facilitator and the students taking a more active role in pacing themselves to learn and master specific skills in their academic lives. Professionalism competence outlines several essential factors to help teachers maintain a high standard of professionalism in the workplace and the community (Medley, 1977). Teachers develop, practice, and display professional behaviors, skills, knowledge, and attitudes with other teachers on the job, with students in and out of the classrooms, and with stakeholders in the community (Denne et al., 2015; Gallagher & Gallagher, 2013). By doing so, teachers are good role models for their students. Teachers accomplish these pleasant experiences as they try to develop an affirmative interaction plan with their students daily and assess their students' abilities in their classrooms. Furthermore, teachers can adjust their instructional and teaching skills to enhance student learning and help students achieve excellence.

Nature of the Study

The nature of this study was a quantitative research study. The one-way MANOVA analysis was used to determine if there was a significant difference in the four

areas of teacher competency—attitude, knowledge, skills, and agency—based on whether a teacher had previous training in ASD-specific courses. Olive (2017) mentioned that a one-way MANOVA could analyze the significant differences between two or more groups and provide information to indicate which group is different from each other. In this research study, the independent variable was the group of teachers that were either teachers who had previous training in ASD-specific courses or teachers who did not have training in ASD-specific classes in the general classroom setting. There were four competency-based dependent variables: (a) attitudes, (b) knowledge, (c) skills, and (d) agency. The dependent variables were measured using an ordinal scale of numbers where 1 would indicate *strongly disagree* and 5 as *strongly agree*.

The study population constituted all the primary public education teachers in District 1 in the USVI. A convenience sample with a web questionnaire was used to gain more participants in the study from the District of St. Croix. The numbers for each dependent variable were calculated to obtain a score for each competency. The calculation of each subtotal for each dependent variable was a continuous variable. Mu et al. (2015) treated dependent variables as constant by multiplying each raw score on a survey and then summing them. According to Mu et al., this approach ensures the correct estimate for each scale score in each category. The Cronbach's alpha for the instrument was .94, and for each variable, the alpha was attitude = .89, knowledge = .89, skills = .90, and agency = .83. All alphas were higher than the suggested cutoff .80. In the same study, Mu et al. explained that the four variables showed a cross-sectional relation with the mean score of teacher's agency being significantly lower (M = 3.10) than attitude (M =

3.99, $p < .001$, $r = .70$), knowledge ($M = 3.47$, $p < .001$, $r = .42$) and skills ($M = 4.03$, $p < .001$, $r = 75$).

Data were collected using the LRC developed by Mu et al. (2015), which measures the four teaching competencies. The instrument is comprised of 28 items across the four competencies: attitude (8 items), knowledge (6 items), skills (8 items), and agency (6 items). The 28-item test uses a five-point Likert scale that ranges from 1 indicating *strongly disagree* to 5 indicating *strongly agree*.

Definitions of Terms

Agency: Teachers work with other academic professionals and organizations locally and internationally to learn best practices on being an effective teacher in the classroom (Mu et al., 2015).

ASD-specific courses: A set of introductory classes that provide general education teachers with basic knowledge on the biological, psychological, and social issues of autism (Sharma & Salend, 2016).

Attitude: Teachers should always be pleasant and willing to accept students with disabilities in the inclusive classroom (Male, 2011).

Autism: A generic term that describes a group of disorders, including pervasive developmental disorder (PDD) or autism spectrum disorder (ASD; American Psychiatric Association, 2013). PDD includes autistic disorders, PDD not otherwise specified, Rhett's, and childhood disintegrative disorders. These disorders negatively impact children's learning, thinking, and problem-solving skills between ages 3 and 19 (Busby et al., 2012).

Competencies: A set of specific skills general education teachers develop to be productive and successful in teaching children with autism (Saddler, 2014).

General education elementary teacher: A teacher who has specialized training and is certified to teach general education courses at the elementary (K–6) level (Virgin Island Department of Education, 2016).

Knowledge: Teachers have an understanding for promoting the academic, social, emotional, and practical learning skills of all learners (Walkins & Donnelly, 2013).

Skills: Understanding different teaching approaches and correct scholarly responses when teaching children with autism (Baldiris et al., 2016).

Training: Professional development programs and workshops (Hart & More, 2013).

Assumption

In this study, I assumed participants might have a shallow working knowledge of the four teaching competencies. I assumed participants would be honest and truthful in answering the questions on the survey. However, I recognize that participants might feel pressured to explain the items in a particular way to make themselves look beneficial to the researcher. Results must remain anonymous to lessen the existence of biases in the research. Another assumption for this study was that I would solicit participants to participate in this study. I also assumed that the expected relationships between the four dependent variables—attitude, knowledge, skills, and agency—in the four research questions would be different. Furthermore, I assumed the validity of the data would not be violated when I used multiple regression analysis to analyze the data. Cohen (1992)

explained that when using multiple independent variables, the variables could become multicollinearity and create a problem to interpret the coefficient estimates while at the same time attempting to understand how each predictor worked. Finally, I assumed the sample would accurately represent the population to which I am making inferences.

Scope and Delimitations

The extent of the problem was focused on general education teachers who currently teach children with autism at the elementary (K–6) level in a public elementary school in the USVI on the island of St. Croix. The research study only targeted general education teachers because they generally lack training in ASD-specific courses (Hughes, 2011). The scope of the research study also involved obtaining permission from the Walden University Institutional Review Board (IRB) to conduct the research.

Teachers in special education did not meet the criteria to participate in the study. These teachers already have training in ASD-specific courses and are better able to function more efficiently than general education teachers in inclusive settings with children diagnosed with autism (Loiacono & Valenti, 2013; Mu et al., 2015). Middle and high school teachers were not part of this research as the focus was on elementary teachers. Therefore, the information cannot be generalized to the overall teaching population. Qualitative data were not used in this study because I was not conducting unstructured interviews to collect data to describe an event rather than measure it. I used a non-experimental quantitative cross-sectional approach; the instrument selected to acquire the data required quantitative or measurable responses and analysis to estimate the different variables in the study.

Limitations

This study was based on a cross-sectional design that focused specifically on the relationships between the four dependent variables—attitude, knowledge, skills, and agency—that measure the teaching competence of general education elementary teachers in the inclusive classroom in St. Croix. I used a convenient sample as opposed to a random sample. Therefore, the research study results can only be generalized to public education elementary teachers living in the USVI, with specific reference to St. Croix. While the study results are not widespread, other educational officials could use the findings from the survey to plan more professional development programs for general education teachers to improve competencies when working with children diagnosed with autism in the inclusive classroom.

Significance of the Study

This research study adds to scholarly research. The focus was to compare the teaching competencies between general education teachers who have training in ASD-specific courses versus those who have not received ASD-specific training. The research study is significant because the literature contains ambiguity and uncertainty for researchers, policymakers, educators, and parents regarding specific teacher competencies for teaching children with autism. This information could help develop a more conducive learning environment for children with autism and better training for general education teachers.

Due to the high prevalence of autism cases throughout the USVI, the research positively contributes to the practice and teaching profession and promotes social change

(Kids Count, 2014). This study is timely, necessary, and significant due to the high level of ambiguity among government agencies, researchers, and educators in developing autism teacher competencies to use in the general education classroom (Mc Culloch & Martin, 2011).

Positive Social Change Implications

This study has potential implications for positive social change by sharing new information that administrators in education could use to organize training programs in the teaching competencies to help teachers become prepared to teach children with autism in an inclusive environment. The findings of this study may also contribute to ASD awareness in USVI society. The results bring new light and a deeper understanding of children with ASD in the USVI. Increased knowledge of ASD may help increase advocacy for the public, teachers, care providers, nonprofit organizations, and government agencies to be more accepting, supportive, and sensitive to those affected by ASD.

Summary and Transition

This study was mainly focused on showing how a lack of teacher training in ASD-specific courses could result in a lack of competencies in meeting the educational needs of children with autism in an inclusive environment. A gap in the literature shows limited information on providing the teaching community on how the teaching competencies could be used in the inclusive classroom to enhance student learning. The results of the study could show a difference between teaching competencies for general education teachers who received training in ASD-specific courses and those who have

not received such training. Medley's (1977) teaching competencies theory outlined five main objectives to help teachers harness their skills in the teaching competencies and guide teachers in helping students learn in inclusive settings. The survey results have provided education officials in the USVI with clear insights on how they could plan and develop professional training programs for general education teachers. In Chapter 2, I present a review of the pertinent literature. The literature provides an expanded discussion on the theoretical framework of the study. Also, the research is focused on the four teaching competencies, which serve as the rationale for the current study.

Chapter 2: Literature Review

Introduction

In the literature review, I provide an introduction and address the literature search strategies used in the study. The areas of the No Child Left Behind (NCLB) act and autism, the role of the general education teacher, and the highly qualified teacher will be discussed in the review. The literature review is also focused on training to work with children with autism and the four teaching competencies—attitude, knowledge, skills, and agency—needed for the general education teacher in the classroom.

The NCLB (2002) provided schools with incentives to reach the yearly academic plan. NCLB also holds school personnel and teachers accountable for the educational performance and progress of all students. Next, I explain the different roles of the general education teacher in the general classroom: the nurturing, managerial, collaborative, and self-management roles (Friend & Cook, 2013; Mu et al., 2015). The nurturing role describes the care and commitment teachers should practice each day in the workplace to develop and nurture all students' social, mental, physical, and vocational skills in the inclusive classroom. The managerial role explains the heavy demands placed on teachers to perform multiple tasks in the classroom setting. Teachers are encouraged to develop expertise in classroom management, lavish more praise and less criticism among students to promote greater control to minimize classroom disruptions in the school setting. The collaborative role emphasizes the need for teachers to work together to achieve a common goal in the classroom to ensure that all students are treated fairly and are engaged in learning new life skills. Also, the self-management role describes the support

teachers should provide to students in helping them be independent and maintain self-control of their behavior.

The highly qualified teacher section introduces two subthemes: teacher certification in the USVI and special education teacher certification. These two sub-themes highlight the essential requirements and core standards of educators in the USVI. In the next section, I describe training to work with children with autism and the need for teachers to engage in professional development regularly and the value of previous training in ASD-specific courses. These two subthemes highlight an urgent call for governments, administrators, and other educators to provide teachers with hands-on job training opportunities to develop teaching skills and knowledge about autism and prepare teachers for the inclusive classroom.

Lastly, discussions of the four teaching competencies—attitude, knowledge, skills, and agency—are focused on helping teachers understand that these competencies are considered the main pillars and foundation in establishing a successful classroom setting. Teachers are encouraged to develop these competencies to make all students feel accepted in the inclusive classroom. Overall, teachers should respond positively and creatively to the changing circumstances to meet the needs of all students, including those diagnosed with autism.

Literature Search Strategy

Numerous research databases were accessed via Walden University's Library to acquire a wide range of peer-reviewed resources to conduct this study. The databases included Dissertations and Theses at Walden's Library, EBSCO, the Education Resource

Information Center, PSYC Info, and ProQuest. Relevant resources came from Google Scholar that supplemented this search and generated various scholarly resources that helped review the literature. Key operational terms used to conduct the literature search included *autism, agency, attitude, ASD-specific courses, competency, general education teacher, inclusive education, regular classroom, No Child Left Behind (NCLB),* and *teaching skills*. The materials were limited to those published between 2008 and the present. Over 95% of the literature was published within the last 5 years to ensure accuracy of information.

No Child Left Behind Act and Autism

The latest Decennial Census of 2010 found that 9.8% of all people have at least one disability (Erickson, 2012). In 2014, 7% (1,282) of children in the USVI between birth and 17 years were identified with developmental delays (Annie E. Casey Foundation, 2019). According to Wehmeyer and Patton (2017), less than 40% of students with an intellectual disability and autism graduate from high school each year. However, based on state performance, 42.4% of these youths have an IEP. Additionally, 31.9% of these students graduated from the St. Croix district in 2014, and 11.11% from the St. Thomas/St. John district (Erickson, 2012). Teachers must receive training and certification in the teaching competencies to meet the needs of these children in the general education classroom.

President Lyndon B. Johnson introduced the Elementary and Second Education Act (1965) to ensure full educational opportunities for all students. However, even though schools made changes due to this act, children with disabilities were not allowed

in the general education classroom. The Elementary and Second Education Act was renamed the NCLB in 2001 to address student success and to improve specific achievement gaps that existed in the schools (Elementary and Secondary Education Act, 1965). Dee et al. (2010) proposed that the NCLB of 2001was established based on the assumption that elementary and secondary public schools were fragmented and incoherent from each other. Danielle (2017) agreed that the primary goal of the NCLB policy was to hold administrators, school districts, and officials of state education departments accountable for academic progress in schools by the 2013–2014 school year. Administrators conducted yearly student progress assessments using high stakes standardized testing and increased classroom academic rigor (Danielle, 2017). NCLB mandated administrators to hold schools responsible for not reaching their yearly plans (NCLB, 2002).

Notwithstanding and softened harsh demands of NCLB, a clause was put in place to provide schools with incentives or rewards based on performance or status (Dee et al., 2010). A critical gesture was to provide teachers with incentives to pique their interest in developing a more innovative approach while teaching these competencies in the general education classroom. According to Dee et al. (2010), policymakers believed these incentives would fix schools' fragmentation and performance problems. During the passage of NCLB, parents, teachers, and other stakeholders, like interest groups and education-based organizations, expressed mixed opinions about the policies that governed the accountability system (Danielle, 2017). Of concern was how educators could be encouraged to keep and maintain the standards set by NCLB (Mills, 2008).

NCLB's name was changed to the Every Student Succeed Act, which transferred the accountability back to the local schools to create plan goals for students, including students with disabilities (Danielle, 2017).

All public schools in the United States were mandated to follow and abide by the agreements outlined in these laws (Mills, 2008). The USVI also had to comply with these laws (Habtes et al., 2012). Therefore, in response to these standards, in 2005, the USVI Department of Education (2016) adopted the Virgin Islands Territorial Assessments of Learning (VITAL) as the annually administered standard-based assessment. VITAL would meet the federal requirements directly related to evaluating students' progress in the territory. Moreover, due to the adoption of VITAL, students with autism were provided with opportunities to have a fair and equal chance to take part in high stakes testing and obtain higher education. In 2010, VITAL was replaced with the Smarter Balanced Assessment Consortium to measure students' knowledge and skills in mathematics and science (Everett, 2017; Danielle, 2017). Between the two governments of the United States and the USVI, these laws introduced significant benchmarks in measuring the academic achievement of all students each year.

Education: The Role of the General Education Teacher

Education should mean more than just giving instructions in an academic context (Sadowski, 2018). *Teaching* is also more than the delivery of educational content and curriculum in the general education classroom (Scruggs et al., 2012). In essence, education should focus on the development of the whole child and should cultivate the knowledge, attitude, and skills of teachers and stakeholders in helping students integrate

into society successfully (Sadowski, 2018). Hughes (2011) suggested that general education teachers should be highly qualified to teach children in inclusive classrooms, including those with autism. Similarly, McCulloch and Martin (2011) posited that one central goal administrators must ensure is that all preservice providers working with children with autism can demonstrate competency in providing and delivering instructions to this diverse population of students. McCulloch and Martin further explained that many states have encouraged and urged teachers to undergo different forms of vigorous training and testing to become licensed or certified.

For these transitions to occur successfully, general education teachers should fill several roles in the inclusive classroom (Mu et al., 2015). For example, a teacher performs the roles of thoughtful professional, instructor, researcher, manager, historian, philosopher, instructional content developer, collaborator, supporter, counselor, administrator, behaviorist, advisor, and technician in their classrooms (Friend & Cook, 2013; Hughes, 2011; Scruggs et al., 2012). However, the four essential roles filled by general educators in the inclusive classroom include (a) the nurturing role, (b) the managerial position, (c) the collaboration role, and (d) the supportive role. These skills were needed to help students in the inclusive classroom develop their academic and social skills.

Nurturing Role

The general education teacher should fill a nurturing role (Cohen & Sandy, 2003). Nurturing is defined as caring, encouraging, protecting, and developing children's social, physical, mental, and vocational skills in the general education classroom. However,

children with autism could reach their goals as teachers and parents helped them develop their academic, social, emotional, and ethical awareness, providing an essential foundation for lifelong learners (Gallagher & Gallagher, 2013). Aliza (2013) suggested that teachers promote happiness and a sense of well-being in their classrooms through nurturing.

Carr et al. (2014) believed that people would experience happiness and participate in positive activities in a nurturing environment. Past research revealed that teachers could not teach children to be happy, but they could be encouraged, and their attention could be redirected to the three major routes to happiness in the general class (Seligman et al., 2009). Seligman et al. further explained that the three paths to happiness include (a) developing positive emotions and pleasure, (b) stability, and (c) a nurturing attitude. The authors found that people who took part in all three paths every day were satisfied with their lives and were ready to nurture others to succeed.

Another essential element teachers could nurture in the inclusive classroom is positive self-worth in students (Cohen & Sandy, 2003; Gallagher & Gallagher, 2013). Encouraging students to listen to themselves and others and respond to others appropriately can help them build their self-esteem. Teachers should teach students how to resolve conflict nonviolently; work with others toward a common goal; be caring, honest, and respectful; and serve and participate in acts of goodwill in the community (Gallagher & Gallagher, 2013). Engaging in these social, emotional, and ethical behaviors prepares students in an inclusive classroom for long-term success as happy, satisfied citizens (Cohen & Sandy, 2003).

Managerial Role

In addition to the nurturing role, the general education teacher should fill the managerial or administrative role (Dargan, 2012). The managerial position highlights several ways a teacher supports and encourages students with disabilities in the general education classroom. According to Autism Speaks (2012), to effectively control the inclusive classroom, public education teachers should develop better expertise in classroom management. Providing humor, warmth, feelings of safety, and appreciation to students encourages greater control in the classroom (Austin et al., 2011; Brookhart, 2017).

An effective teacher devotes less time to managing classroom behaviors and more time to academic activities (Roger & Mirra, 2014). Teachers should be less critical of student behaviors and more apt to praise to encourage good practices and positive attitudes in children (Autism Speaks, 2012). Dargan (2012) suggested that teachers who give students extra time and freedom to govern their behaviors and activities in the classroom tend to develop more permissive practices. However, maintaining an environment where helpful teaching instructions are practiced in an inclusive classroom with diverse learners could be challenging. Therefore, general education teachers must do everything in their power to upgrade their skills to respond positively to the new challenges provided by their changing roles (Autism Speaks, 2012).

The central notion in the general education classroom is to perform effectively (Friend & Cook, 2013). Teachers can maintain control by providing positive feedback to students (Cohen & Sandy, 2003). Positive feedback could provide students with

disabilities and students without disabilities with pertinent knowledge to understand where they are in their learning experience and what they need to do next (Brookhart, 2017). Therefore, providing feedback to students is one way a teacher can manage and develop a good teacher-student relationship in the classroom (Wolff et al., 2017).

Given that some students have different levels of autism, unique behavioral issues may present in the general education classroom (National Professional Development Center on Autism Spectrum Disorder (2010). Teachers should understand that these behaviors may not be intentional or willful (Shanker, 2013). Addressing these unique behaviors with fidelity shows that a teacher's focus is on developing students' social and communication skills (Friend & Cook, 2013). A teacher's image in the classroom as a managerial leader shows that the teacher is the boss. Furthermore, the teacher's image shows that they exhibit critical judgment, practical knowledge, and skills in molding and shaping students into becoming individuals with good character (Wolff et al., 2017).

Collaborative Role

In addition to the nurturing and managerial role, the general education teacher should fill a collaborative role (Avcioglu, 2017). Friend and Cook (2013) stated that teachers should work cooperatively together to achieve one common goal. The common goal is to ensure that all students in the inclusive classroom actively learn new life skills. Collaboration helps teachers develop a mutual understanding, respect for each other, shared responsibilities, support for each other, and the ability to learn about different strengths, weaknesses, likes, and dislikes (Everett, 2017). Working together helps novice teachers overcome administrative challenges such as inadequate leadership and large

classroom sizes (Everett, 2017; Topping & Ferguson, 2005). Furthermore, co-teaching as a part of collaborative learning in an inclusive classroom could help bring out the best behaviors and attitudes in a person, improve the learning environment, and enhance student learning and creativity in the general classroom (Everett, 2017).

Cooperative learning and peer tutoring are two of the most effective strategies used in the inclusive classroom (Ahmad & Mahmood, 2010). Students actively take part in classroom learning and develop their social interaction skills (Avcioglu, 2017). Capodieci et al. (2016) found students In a cooperative learning group with students with and without disabilities in a cognition program showed paramount achievement than students who were placed in an individualized group.

Similarly, Cook et al. (2017) explored the impact of a peer-tutoring program on reading and social interaction skills within classrooms that included children with autism. The reading, comprehension, and interaction skills improved for both students with and without autism. These results suggested that children could be prosperous in-class interactions and enhance their academic performance when teachers plan these activities meticulously. General education teachers could introduce cooperative learning and peer tutoring as supplemental strategies to help students, but more categorical, for students who need to have one and one instructions (Everett, 2017).

Self-Management Role

Beyond filling the nurturing, managerial, and collaborative role, the general education teacher should fill the self-management role (Schulze, 2016). Providing support for a child with autism in the general education classroom is a significant priority

(Shanker, 2013). The general education teacher could increase academic and social performance in the mainstream classroom (Friend & Cook, 2013). Supporting students' independence in the classroom could also mean that the general education teacher is helping a student with autism to develop their self-management skills (Everett, 2017). Yeung and Yeung (2015) found that the self-management role encourages students to be responsible in the classroom. Gallagher and Gallagher (2013) described four critical ways in which self-management could help students with disabilities to become independent. The four strategies include (a) helping students to identify appropriate behaviors, (b) encouraging students to take time out, (c) analyze the behavior, and (d) to evaluate his or her actions. Teachers should consistently monitor and support students to keep a log of their actions and reinforce students' positive responses when they meet a goal. Everett (2017) also suggested that teachers need to support self-advocacy in the general education classroom. Teachers could assist students by offering them relevant life examples to help them connect with their experiences (Autism Speaks, 2012).

Self-management means constantly monitoring a student's behavior to bring about change and control other negative responses that the aggressor has subsequently displayed in the classroom (Carr et al., 2014). Thus, as the teacher's model, this behavior in the daily school programs students would notice and mimic these virtues as they learn to control their actions and give back to their society in a tangible way (Schulze, 2016). Conversely, Lombardo et al. (2010) argued that the self-monitoring technique would not be a robust intervention plan to help children with autism learn. However, most of these children do not have the reasoning powers to monitor their actions, behaviors, and

thoughts to track their growth patterns. Nevertheless, the self–management procedures have been effectively used in several programs to help children with autism improve their academic work and their social and behavioral skills in the classroom.

Henderson et al. (2015) and Schulze (2016) work did not share similar results to that of Lombardo et al. (2010). Henderson et al. (2015) and Schulze (2016) reported that one self-management strategy that a teacher could use to help students in the inclusive class is a self-monitoring plan as this focuses on the behavioral changes and the behavioral growth patterns of the child. They both argued that self-monitoring is all about developing one's ability to assess and evaluate one's behavioral growth pattern or progress towards achieving a particular goal, such as controlling one's behavior in the classroom. Carr et al. (2014) and Schulze (2016) found similar results to that of Briesch and Chafouleas (2009) study, indicating that the self-monitoring intervention plan is a dynamic strategy used with students with autism to improve their academic achievements, complete tasks, and show improvement in other social behaviors in the classroom. The self-monitoring intervention plan allows the student to engage in self-observation and easily track whether any changes occurred in their behavior over some time (Schulze, 2016).

In summary, the current research and investigations showed that for teachers to be successful in the inclusive classroom, the student's academic needs and social needs must be a top priority (Everett, 2017; Gallagher & Gallagher, 2013; Schulze, 2016). Findings from the review literature supported the idea that using cooperative learning, peer tutoring, and self-monitoring strategies in the general classroom could lead to significant

student changes. Therefore, teachers could work collaboratively together to ensure the holistic development of each child.

The Highly Qualified Teacher

To be considered a 'highly qualified teacher. A teacher should have expertise and skills in the subject area in which he would be teaching and full state certification (Darling-Hammond, 2017). Callahan (2016) stated that past research had indicated a relationship between highly qualified and trained teachers on the development of student's critical thinking and reasoning skills, student's increased rate in achievements, and the improvement in student behavior. Furthermore, a report presented by the National Commission on Teaching and America Future (2007) found that it cost the government over 8000 dollars to replace a teacher who leaves the teaching profession and about 2.2 billion dollars each year to recruit, train, and hires new teachers on a national scale. These findings suggested that teachers are a critical factor in the developmental skills of children with autism. Therefore, government agencies should ensure that highly skilled teachers are available to teach an inclusive classroom.

Teachers Certification in the U.S. Virgin Islands

In the USVI general education teachers have been experiencing this vicious cycle of testing to ensure they are highly qualified (Wehmeyer & Patton, 2017). However, the demands and increasing legislative laws emphasizing the need for teachers to be certified have caused intense scrutiny to teachers working with children who have ASD (Dee et al., 2010). As teachers became more qualified and acquired full state certification, they have been encouraged to develop mastery in core academic subjects such as the English

language and mathematics (Virgin Islands Department of Education, 2016). This statement suggested that teachers need to understand what should be accomplished based on the requirements of each state's educational standards to teach in the general education classroom and teach children with autism in this same classroom (Simpson et al., 2004).

More importantly, in the USVI, teacher's certification is divided into three main categories, including; the substitute teacher pool certificate (which expires every five years), the professional Class 1 certification (given to educators with a bachelor's degree), and the professional educator Class 2 certificate (issued to professionals with a master's degree) (Virgin Islands Department of Education, 2016). To receive a teacher certification to teach in the general education classroom, the Virgin Islands Board of Education (2016) requires that applicants submit their bachelor's degree and all official transcripts from an accredited university to the Department of Education. Educators must also provide all official documents to demonstrate that they have obtained U.S. citizenship in the United States or show that they hold a permanent residency card or work status credentials. Furthermore, educators must complete a course in Virgin Island history and its culture within the first year of employment. Teachers must also successfully pass the PRAXIS-1 and PRAXIS-2 tests, the National Teacher's Proficiency Examinations. Teachers must pass the exams for the subject and grade level they are expecting to teach. Also, teachers are encouraged but not required to complete the student-teachers training program at the University of the Virgin Islands to meet the basic requirements for teaching children with autism in an inclusive setting (Rivera, 2016).

Furthermore, elementary teachers are mandated to complete an additional 36 educational credits, and secondary high school teachers are required to complete another 26 credits to be qualified for certification (Rivera, 2016). General education teachers were also encouraged to attend workshops and professional development programs to enhance their teaching skills, provide instructions in an inclusive classroom, and modify work for students with Autism (U.S. Department of Education, 2004). The 2012 and 2013 school year showed that 64% of general education teachers are certified when compared to 55% in 2010 school year (Virgin Islands Department of Education, Part B FFY, 2014). These reports imply that the Virgin Islands Department of Education is working slowly towards ensuring all teachers in the territory are highly qualified to teach in inclusive classrooms. However, considering the challenges that come with autism, much more work is needed to ensure that all teachers meet the requirements of becoming highly qualified and have developed their skills in the teaching competencies.

Special Education Teacher Certification

Teachers with a special education certificate in the USVI must first hold a professional Educator Class I certificate to teach in the inclusive classroom (Virgin Islands Department of Education, 2016). They must also maintain 40 to 42 semester hour's credit in five of the six general academic areas. These areas include English language, mathematics, social studies, natural sciences, fine arts, and foreign language. Additional certification in special education provides the individual education teacher with the privileges of teaching kindergarten through the 12th grade level and other adult education programs in education.

Specialization areas mean different areas in special education programs or majors (Topping & Ferguson, 2005). An individual can choose from a wide range of subjects to study and become a specialist in that research area to teach children with varying learning problems. Educators can also focus on specialized reading programs to focus specifically on the learner's problems and lessen them. Areas of specialization for special educators include; mild, moderate, or severe disabilities, emotionally disturbed, mentally retardation, specific learning disabilities, autism, and early childhood development (Topping & Ferguson, 2005). Other areas are special education, visually impaired, deaf and blind, special education orthopedic, handicapped, and other health-related fields. Teachers with a special education certification working at the middle or junior or the high school level must complete other courses that include introductions to the education of exceptional children, behavior management, assessment of the student, and curriculum and methodologies. Special education teachers must complete courses in language and speech development, educational psychology, adaptive technology, student teaching and work collaboratively with the school, home, and community (Topping & Ferguson, 2005).

Special education teachers should focus on academic subjects such as mathematics, science, social studies, and the English language in the resource classroom (Wehmeyer & Patton, 2017). More importantly, students should receive additional services that are not directly involved in classroom instructions. For example, students should have received evaluations from the school's psychologist and counseling from the guidance counselor's department. These findings implied that teachers and other

educational personnel must work collaboratively to ensure the smooth functioning of a disabled child in an inclusive setting. These reports also revealed that the general education teacher in the regular classroom must receive training in the teaching competencies to respond positively to all students in the public classroom setting.

In summary, for inclusion to work and become successful in schools, it must have support at the school district level and in the general education classroom (Mu et al., 2015). The research has also supported the idea that school systems must have workable strategies to facilitate public education teachers to implement these special hands-on activities in inclusive classrooms. Besides, research also helped the claim that teachers need to have adequate resources, social support from administrators, funding, and regular training to teach effectively.

Training to Work With Children With Autism

Teacher skills development has improved through coaching, teacher mentorship, conferences, workshops, collaborative planning, and regularly sharing teaching competency practices among other professionals and colleagues (Vikaraman et al., 2017). Therefore, since teachers are considered active agents of change for young learners in the inclusive classroom. Then, it is critically important that they receive training and coaching intervention techniques for changing children's behavior (Shepley et al., 2018). Furthermore, these training sessions had helped teachers know how to address a problem when it popped up in the classroom and know what behavior to address during a crisis or an instructional session at the school. Service providers, for example, school counselors, behavior analysts, school psychologists, special education teachers, and speech-language

pathologists, should never assume that teachers accurately understand and interpret the target behavior in a child's individualized education plan. These findings suggested that teachers in early childhood classrooms should effectively use this training and coaching to support instructional procedures with fidelity in an inclusive setting.

Professional Development

General education teachers and paraprofessionals, alike, needed adequate training to improve the implementation of new interventions in the inclusive classroom, especially for autism (Brock & Carter, 2013). Wehmeyer and Patton (2017) found that teachers in the USVI received several different opportunities to develop themselves. However, these training programs occurred both in and out of the territory. Some of the training took various forms, including in-person, through many organizations, and other distant educational programs. However, the main types of professional development received in the Virgin Islands were mainly in seminars and conferences.

Furthermore, Wehmeyer and Patton (2017) found that these seminars, discussions, and professional development programs were primarily focused on but are not limited to educational learning theories. To be more specific, Wehmeyer and Patton indicated that these pieces of training were focused mainly on the development, compliance, behavioral, and academic strategies that were directly related to instructions in the classroom. Also, these training sessions were precisely aligned with the unique educational program, nonviolent crisis intervention, working with families, and decision-making procedures in education.

Training teachers regularly should not be limited to only experienced teachers (Wolff et al., 2017). The preparation of general education teachers was necessary as they were vital team players in the decision-making process of the school climate (Brock & Carter, 2013). These teachers were responsible for implementing and ensuring that the inclusive model worked successfully in regular classrooms (Hughes, 2011). There was a positive relationship between the training of teachers and a higher percentage of students with academic success (Chung et al., 2015). Brock and Carter (2013) found that teachers who had substantial training in autism competencies tend to hold higher expectations for their students than teachers with little or no experience teaching in the inclusive classroom. Similarly, Hart and More (2013) indicated that teachers who had more training in individual educational courses displayed more patience and understanding in the inclusive classroom.

Consequently, when teachers were allowed to engage in professional development and training, the students, including children with autism, benefited from maximizing their chances of receiving higher scores on placement exams (Masterson et al., 2014). Hart and More (2013) and Masterson et al. (2014) found that schools that engaged all teachers in autism-specific training experienced higher academic outcomes than schools with a low percentage of teachers involved in autism relative training. Everett (2017) concurred that training in autism enhanced students' academic performance and understanding of mathematics and the English language. Masterson et al. (2014) also found that those general education teachers who participated in autism-specific training tend to encourage a better student-teacher relationship. Students of teachers who had a

positive attitude and welcomed the inclusive model tend to be more optimistic and are more likely to succeed academically, socially, and behaviorally.

Furthermore, students with autism who received adequate training from their teachers in the general setting would likely be able to transition into the workforce more quickly than those students who had not benefited from autism-specific training (Coates et al., 2017; Masterson et al., 2014). Papacy and Bambara (2014) found that these children were more prepared to find a job after graduating from high school. These findings revealed that adequate time for regular training, feedback, and support from administrators would only result in positive growth for both students and teachers.

Teachers who has a deeper understanding and knowledge about the inclusive model tend to have a more pleasant disposition and calmness towards children with autism (Hughes, 2011). More importantly, Coates et al. (2017) highlighted that teachers in autism-specific programs developed more interventions and strategies and were more willing to welcome children with autism into their classrooms. The authors suggested that these teachers may be more open-minded to embrace and implement the inclusive model into their classes than those teachers who had less exposure to autism-specific training. Such actions made it essential for the administration to provide more opportunities for educational training and accommodations on autism competencies to successfully maintain an inclusive environment (Masterson et al., 2014). When administrators and other educational leaders provided opportunities for teachers in training, then they were helping teachers to benefit from new knowledge as a collaborative effort (Loiacono & Valenti, 2013).

ASD-Specific Courses

Due to the challenges that characterized Autism, Chung et al. (2015) found that federal laws require general education teachers to train in ASD-specific courses to help children with autism in the mainstream classroom. A study by Smith and Kennedy (2014) found that these challenges had to be taught in schools to help teachers be effective in the inclusive classroom. Hart and More (2013) stated that ASD-specific courses were a relative area of development. Similarly, Hicks-Monroe (2011) found a lack in the current programs at schools in preparing teachers in general education to teach the growing number of children with the disorder.

Besides, Coates et al. (2017) found a need for programs to be developed and centered correctly on ASD. To address the lack of courses in autism, Hart and More (2013) recommended that general education teachers use the Instructional Intervention Technology Program to help boost their effectiveness in the inclusive classroom. On the same topic, Masterson et al. (2014) stated that one primary problem teachers encountered in the general classification were an increasing need to access autism-specific materials and resources. Masterson noted that these materials and supplies were necessary for preparing teachers to plan lessons that helped all students advance to the next level. Hughes (2011) argued that there was not enough research done in this area to prepare teachers to teach students with autism in an inclusive setting. Conversely, Hughes (2011) found that increasing knowledge for general education teachers in autism-specific courses would positively impact the inclusive classroom environment.

Another problem identified by Masterson et al. (2014) and Ahn and Vigdor (2014) was the need for educators to engage in professional development in autism-specific courses regularly. Saddler (2014) highlighted that many teachers who worked with children with autism had testified that they lacked knowledge in autism-specific classes. Saddler stated further that teachers mentioned that they had no preparation and that they lacked training. Furthermore, Masterson et al. (2014) and Saddler (2014) reported that those general education teachers said they had no professional development related to the disorder to prepare them to teach in an inclusive classroom.

Professional development in ASD-specific courses is necessary to help teachers self-awareness and to lessen discrimination or treatment of children with autism unfairly (Chung et al., 2015). Professional development in autism-specific courses help teachers to examine themselves to see whether their perceptions and attitudes have created any discriminative barriers in their interaction with children with autism in their classroom. Chung et al. further mentioned that it is crucial for teachers to re-examine their attitudes and behaviors with children with autism because findings highlighted that some teachers tended to be more willing and ready to work with students who have a high ability to perform academically. While at the same time, students who had a lower-performance rating had less intriguing questions and feedback. One other problem was that most teachers who graduated from a tertiary institution only received minimal preparation in autism competencies to teach this population of students (Hart & More, 2013). Similarly, Austin et al. (2011) posited that the courses that teachers were encouraged to take in universities should prepare them to teach a diverse population in the inclusive classroom.

Besides the lack of training, professional development, and ASD resources, one additional problem related to ASD training, is the lack of funding (Tiwari et al., 2015). Dee et al. (2010) found that a lack of funding and resources towards education impeded the growth and development. More specifically, Loiacono and Valenti (2013) suggested that it was essential for administrators to support, encourage, and assist teachers with the necessary tools to prepare them for these challenges. Therefore, administrators helped teachers and staff by implementing current programs in schools to have access to best practices in ASD teaching competencies and courses. According to Masterson et al. (2014), autism competencies and ASD-specify courses prepared and equipped both general and paraprofessional teachers to address the social, behavioral, and academic problems with children with ASD in the inclusive classroom.

Therefore, general education teachers could remain current in autism-specific courses, as they learn to understand their resources, perform daily better, and know how effective they are in presenting information to a student with Autism (Austin et al., 2011). Such knowledge could grow through ongoing training in ASD-specific courses (Masterson et al., 2014). Chung et al. (2015) suggested that for ASD training to be operational and highly effective, the training programs should have a combination of theoretical orientation and foundational background in autism competencies. Coates et al. (2017) stressed the importance of educators' training in ASD-specific courses as a priority and, most specifically, part of the policy. On the other hand, Masterson et al. (2014) suggested that without training in ASD-specific courses. Teachers would continue

to be inadequate in providing developmentally appropriate learning opportunities for children with autism.

Teachers who had access to resources, funding, and opportunities for learning new knowledge excelled in becoming exemplary teachers (Tiwari et al., 2015). Also, teachers who had opportunities to receive training in ASD-specific courses were better able to adequately and effectively implement these strategies in their classrooms (Masterson et al., 2014). Hall (2012) found that teachers believed that they were better able to serve and meet the needs of their students ‘when they had training. Conversely, Humphrey and Symes (2013) mentioned that teachers who have had years of unpleasant experiences due to not being adequately prepared to teach a diverse group of students in an inclusive classroom continued to develop negative attitudes towards children with autism.

More importantly, Male (2011) argued that issues of this nature excluded students with autism from the mainstream classroom and prevented them from developing genuine friendships with their classmates. Similarly, Segall and Campbell (2012) found that this problem caused children with autism to produce a poor self-image and a sense of failure in the general classroom. Therefore, training in ASD-specific courses to address the different behavioral problems at the school was essential. There was a lack of widespread use of autism competencies to inform teachers of the etiology of autism, its manifestations, and the opportunities for teachers to be familiar with autism competencies (Masterson et al., 2014). Mu et al. (2015) agreed that few papers existed concerning how

teachers conceptualized and organized the contents of ASD-specific courses for undergraduate studies in their education.

To help teachers develop a clearer understanding of ASD–specific courses, Masterson et al. (2014) recommended a sequence of behavioral treatment courses in applied behavioral analysis and effective communication strategies that helped teachers develop a solid foundation of the different strands of ASD. Masterson et al. stated that teachers should understand the disorder's biological, theoretical, diagnostic, assessment, and treatment aspects. Nevertheless, educators in the bachelor's and graduate programs learned the basic concepts about ASD. Hence, introducing these courses ensured teacher training excellence and created a standard across the content areas. Coates et al. (2017) proposed a working copy of the ASD course content recently used by universities worldwide. It is believed that teachers in their first, second, and third years of study in a tertiary institution completed a wide variety of foundational courses in ASD, including history, different theories, medical issues associated with autism, and language enhancement to clear up miscommunication. Then, in their fourth year, they combined their practicum experiences and other professional development opportunities to work in different organizations or fields.

These findings show that teachers learned specific ASD knowledge to identify early warning signs of autism in young learners (Hart & More, 2013). Also, teachers had up-to-date information on different approaches and strategies about autism. They will also learn to assist parents in accessing early intervention services for their children in the mainstream classroom. Hart and More found that the program's content was carefully

selected and designed to ensure that the information has not come to light in the classroom and that it represented the most up-to-date, critical, and relevant information student teachers would need to know to teach children diagnosed with ASD.

Four Teaching Competencies

Competencies in the study context mean specialized training and the capacity to adapt with flexibility into a changing environment (Dunn, 2013). Zwart et al. (2018) found that developing the four teaching competencies allowed teachers to respond positively to their students in the inclusive classroom. This positive approach included harnessing their instructional abilities and embracing the rapidly changing environment around them. Creating real-life skills meet the needs of all students in the least restrictive classroom setting. Priestley et al. (2012) found that the lack of support and training adversely affected general education teachers' attitudes in an inclusive environment. A teacher's mindset, knowledge, skills, and agency were considered the main pillars for professional teaching as these virtues tend to establish a successful classroom of inclusion (Mu et al., 2015). According to Topping and Ferguson (2005), these professional competencies in teaching were valuable for successfully implementing inclusive education policies in classrooms worldwide.

These competencies were invaluable and enabled the general education elementary teachers to serve every child in the inclusive classroom. Blecker and Boakes (2010) found that these competencies prepared public education teachers in many ways. To provide better support and assist children with autism in the most potent possible ways in the general classroom. More specifically, public education teachers who worked

in the general classroom and with the administrative team. In designing educational programs and school curriculums for general classrooms, they were also the primary decision-makers (Habtes et al., 2012). Therefore, it was essential to critically examine the teaching competencies in the inclusive classroom in the USVI.

Attitudes

The teacher's approach directly affected a student's cognitive and behavioral development in an inclusive classroom (Chung et al., 2015). Similarly, Hacieminoglue (2016) mentioned that the teacher's attitude influenced student scores on quizzes, exams, regular assessments, and achievement tests. Additionally, the teacher's opinion impacted students' attendance, involvement in class discussions, classroom behaviors, motivation for learning, and attitude towards themselves, school, and the class, as described in Medley's (1977) teacher competency theory. Medley found that the professional attributes designed to help general education teachers adapt positive attitudes to improve student outcomes in the inclusive classroom are helpful.

As I utilized these categories, I intended to provide a clear understanding based on Medley's (1977) theory to show how a teacher's negative or positive attitudes affected children with autism. Medley found that teachers who positively foster excellent communication and opinions in the inclusive classroom created a pleasant and safe learning environment to accommodate children with autism. Medley suggested that the teacher's role in general education was to foster the growth of essential skills and attitudes in all children and nurture the cognitive, moral, social, and emotional development of these attributes for survival in and outside of the mainstream classroom.

Consequently, Chung et al. (2015) mentioned that general education teachers who had a negative attitude to the inclusion model and lacked the training to mitigate the negative impact of their opinions failed to implement the pre-instructional concept in the inclusive classroom successfully. Pre-instructional attributes were another name for cooperative learning (Hughes, 2011). Hendricks (2010) suggested that a general education teacher who displayed an attitude of acceptance, enthusiasm, and influence; introduced the model intervention strategies successfully in the inclusive setting. Similarly, Segall and Campbell (2012) found that teachers' positive attitudes encouraged the use of these strategies. On the other hand, Lambe and Bones (2008) found that an investigation in preservice and in-service teachers' perception showed that some teachers who had a negative experience at the beginning of their teaching experience in the inclusive classroom continued to develop those behaviors over some time. These findings suggested that administrators could improve teachers' educational training. To help them promote better attitudes towards children with Autism (Chung et al. 2015).

Teachers who developed a positive attitude to present information, to students including children with autism. Should include priming, prompt delivery, and visual schedules to allow student time to preview the activity before engaging in the activity (Medley, 1977). Chung et al. (2015) suggested that a positive attitude and self-confidence in teaching could influence the academic outcome nationally. Similarly, Medley (1977) found that an effective teacher would communicate simple and clear instructions to students in the classroom. La Barbara and Soto-Hinman (2009) found that students with disabilities, including children with autism, had problems understanding long and un-

clear presentations. Therefore, teachers who specialized in general subjects had to be well organized when introducing new activities in the inclusive classroom. Also, Smith and Kennedy (2014) found that the teacher's positive attitude and creative skills in presenting materials to children with autism in the inclusive classroom can pique their interest and improve their academic scores. To encourage students' academic and social development in the school, general education teachers could introduce visual cues to assist students in learning in an inclusive setting (The National Autistic Society, 2012b). Visual cues include snap words, pictures, timer, written timetable, alarms, and storytelling. Conversely, general education teachers who held negative attitudes towards children with autism would spend less time discussing and teaching students with Autism (Hampton & Kaiser, 2016).

Another critical point Medley (1977) mentioned was the need for schools to provide safe learning in the inclusive classroom. According to the National Autistic Society (2012), quiet disposition and a positive attitude are vital in creating a stress-free learning environment for including students with autism. Given that students with autism experience behaviors that are disruptive, oppositional, confrontational, and aggressive. The training was crucial to address these atypical behaviors in the mainstream classroom (Wolff et al., 2017).

A teacher's positive relationship with the parents and the student could impact their overall attitude and academic performance in the inclusive classroom (Hart & More, 2013). Tiwari et al. (2015) suggested that general education teachers have identified children with autism as the most challenging and stressful students to teach in their

classrooms. On the other hand, Hampton and Kaiser (2016) and Avcioglu (2017) found that teachers react to this population of students with more aggression, anger, and frustration due to their academic, behavioral, and social disorders. These findings suggested that general education teachers need urgent ASD-specific care to show empathy and altruism in the classroom setting. O'Kane and Goldbart argued that people who made these errors lacked training, skills, awareness, and experiences of the context (O'Kane & Goldbart, 2016).

Knowledge

Developing new knowledge about ASD-specific courses was another critical level of the teachers' professional competency scale (Mu et al., 2015). Since children with Autism experience behavioral problems, they cannot communicate effectively but solely rely on their behavior to convey a specific message. Then teachers in the general classroom should look beyond the student's behavior and identify the messages the student was trying to convey (Walkins & Donnelly, 2013). On the other hand, The National Autistic Society (2012) argued that the teacher's self-awareness and familiarization on communicating and focusing specifically on children with autism could only increase and develop with continuous training in autism teaching competencies.

Mu et al. (2015) outlined four essential steps in how teachers could acquire knowledge on the inclusion model. The first step was the general education elementary teacher's main subjects in the inclusive classroom about autism. The second step encouraged general education teachers to teach their students about autism. Step three

focused on having a basic understanding of a child's weaknesses in learning in past general education classrooms. Lastly, step four was about understanding the context of policies about implications that govern standards teachers have to maintain while teaching in the inclusive classroom.

Another effective strategy general education elementary teachers used for improving their knowledge were sharing their experiences with Para educators about meeting individual student needs (Walkins & Donnelly, 2013). According to Dervent (2015), sharing and learning from each other experiences is the best method to examine and reflect on our strengths and weaknesses. Similarly, the Spense Fact Sheet (2002) found that paraprofessionals who spent time in contact with general education teachers planning lessons, curriculum development, evaluation of programs, and other collaborative work were better able to work in the inclusive classroom. Dervent (2015) found that many educators and professionals in varying disciplines lacked knowledge about autism and its development in children. One recommendation was that they should enrolled in specialized training in Autism and Speech-Language Pathology to function more effectively in the community.

Hey, et al. (2017) examined 106 parents and educators in Nepal to better understand ASD and how it affects children. The results highlighted that both parents and teachers alike had no idea and lacked awareness of ASD. The author reported that the participants believed that environmental factors, birth complications, and poor style in parenting were the leading causes of autism. Besides, both parents and teachers need in-service training to identify the initial warning signs and features of ASD. Bocala et al.

(2010) indicated that most teachers teaching general classes has a shallow understanding of inclusive education. The authors suggested that teachers should enrolled in special education. Others also pointed out that they lacked historical knowledge of special education and its related services (Dee et al., 2010; Litton et al., 2017; Tiwari et al., 2015).

General education teachers should be knowledgeable about the learning styles of each student (Scruggs et al., 2012). This suggestion was valuable because each child's situation differs significantly, and the method that might be successful for one student could be different for another student. Also, there is a need for teachers to understand the motivational patterns of differently-abled children in the classroom. Understanding these critical ideas aided teachers in getting acquainted with different available resources, support systems, and getting help for themselves and the students they serve.

One point is that general education teachers must present information clearly to the students (Benedict et al., 2016). Introducing materials clearly and concisely to students would enable them to assimilate the information more readily as they try to connect the data with their personal experiences to acquire the knowledge needed. Similarly, Bliz (2013) suggested that teachers should find time to engage in preservice and in-service teaching programs to build and extend their knowledge base. These propositions lend support to Medley's (1977) teaching competence theory that explained how the teacher's presentation of the materials in the inclusive classroom could enhance a student with and without disability innovative, bright, and creative thinking.

Another study by Rock et al. (2016) recommended that teachers engage themselves in pre-and- in-service development programs that will prepare them to use technology systems to help to facilitate the transfer of knowledge and understanding. By doing so, they would have selected, implemented, monitored, and evaluated different computer programs through deliberate practices and feedback. Bessen (2016) further suggested that using technology in the classroom could help teachers and students engage in higher-order thinking and better problem-solving skills. Also, teachers could benefit as they support differentiated instructions and create new and innovative approaches to teaching specific content to specific learners in the general education classroom.

On the other hand, Smith and Kennedy (2014) found that general education teachers has to be compelling in the classroom and the real-world setting. However, Hare et al. (2014) advised that this realism was achievable when teachers take the time, daily, to reflect on their practices. Reflective thinking is learning from our own experiences, beliefs, and perceptions. Moreover, through reflective thinking, teachers can address areas for growth to assist them in their teaching experience (Dervent, 2015). Therefore, reflective thinking plays an integral role as teachers developed their professional skills in the classroom.

Consequently, these authors mentioned that community efforts were needed to trained teachers and alert stakeholders about autism. Also, training was needed for the different professional competencies available and used to help students in the inclusive classroom. The authors advised that training took place regularly to meet state requirements and standards, which would give teachers exposure to basic knowledge

about the disorder. Besides, these training programs should prepare general education teachers to communicate effectively and help make differently-abled children live an enjoyable experience in the mainstream classroom.

Skills

Skill competencies for general education teachers are viewed by the Virgin Islands Developmental Disabilities Council (2016) as having the ability to plan programs in classrooms to serve and meet the needs of all students. Skill competencies focus on diagnosing children with ASD. More specifically, it aimed at developing and improving the vocational and social skills of children with autism in the classroom. Skill competencies were different from knowledge competencies. For example, general education teachers need specialized skills to teach a diverse student population (Mc Culloch & Martin, 2011).

Skill competencies are vital in teaching children with autism with inclusive educational practices (Mu et al., 2015). The National Autism Society of America (2006) selected eight competencies needed in general education to use in a classroom setting. The eight skills included (a)Teachers to have a working knowledge and changes in the developmental cycles of a child with autism from infancy to adulthood, (b) effective use of social skills strategies, (c) positive reinforcement, (d) understanding the learning styles of children with autism, (e) excellent communication skills, (f) understanding the sensory-motor development of children with autism, (g) utilizing visual supports, and (h) encouraging independence and aptitude.

Similarly, Fiore et al. (2018) outlined six critical skills to encourage general education teachers in the classroom to function effectively. These seven highly prioritized skills for inclusive teaching include (a) having clear curriculum objectives (b) instructional modification, (c) accommodation, (d) assistive technology, (e) collaborative instruction, (f) personal and behavioral support, and (g) literacy instructional care. On the other hand, Bocala et al. (2010) recommended that all teachers take ASD- specific courses to develop the essential skills for teaching in an inclusive setting. According to Bocala et al. (2010), these skills in ASD- specific courses will prepare general education elementary teachers to adapt, accommodate, differentiate, modify, and use a wide variety of instructional methods while teaching in the inclusive classroom environment. After analyzing the literature, I found it more fitting to categorize these skills into six essential groups. These six groups include communication skills, visual aids, technology, understanding sensory functioning of children with autism, the executive functioning of the brain, providing clear and consistent rules, and caring.

Both Polk (2006) and Papacy and Bambara (2014) indicated that a teacher's skillfulness at teaching would depend on how clearly and forcefully the instructional objectives of the class or the subject matter is communicated to the students. The authors argued that the skillfulness of the teacher would be evident in the way students with autism relate, understand, and maintain full attention to the teacher's teaching. Smith and Kennedy (2014) suggested that the teacher could use the question-and-answer method to create interest and mobile students' participation in the classroom apart from using assistive technology.

A similar study by Friend and Cook (2013) found that what piqued children's interest in Asperger's Syndrome in a meaningful way was when the teacher engaged all students in the class activities. La Barbara and Soto-Hinman (2009) mentioned that children with autism have an impaired ability to draw references. They also have difficulties with language comprehension, retelling stories or incidents, and relating to a general topic. The challenges some students faced were noticeable when they were required to read and make inferences. Alternatively, when the teacher asked them to imagine themselves in a particular situation outside of their experiences, they had difficulty doing so (Papacy & Bambara, 2014). La Barbara and Soto-Hinman (2009) explained further that current research has revealed that these children experienced problems with their reasoning skills, an integral part of reading development. Therefore, it was critically important that teachers engaged them in class discussions and other activities in the classroom. The authors stated further that engaging children with ASD would improve their language skills. More importantly, general education teachers could invite students in an inclusive classroom to share their knowledge and experience with their classmates as a learning experience (Austin et al., 2011).

Besides, Bullas (2012) observed in his research that an effective teacher demonstrated his skills in teaching. By explaining basic instructions and concepts multiple times to students with disabilities in the classroom. So that they could grasp the concepts of the subject discussed; moreover, Bullas further stated that teachers need to be proactive and creative in their approach while teaching. The reasoning being children with autism have difficulties following instructions. However, these difficulties were due

to poor language development and poor communication skills (La Barbara & Soto-Hinman, 2009). Also, these children had problems understanding long and un-clear instructions and shifted their attention from one activity to another (National Professional Development Center on Autism Spectrum Disorder (2010). So teachers would need to reinforce their points several times over and point to the instructions on the chalkboard so that students could connect with the topic (Bullas, 2012).

However, the vital point was that children with ASD may not have fully developed sensory perception and social skills. Hence, they found it challenging to concentrate on the tasks in the general education classroom (The National Autistic Society, 2012). For this reason, public education teachers had to be well prepared when introducing a new activity or topic in the mainstream classroom. One skill that has proven to help students with autism was arranging the class activities in advance to know what to expect in the following class period. The teacher could write the instructions on the chalkboard that day to know what they would be doing in the class.

Gillion et al. (2017) found that the brain's executive functioning in children with ASD did not coordinate correctly. Unfortunately, this means children with autism could not reason, engage in problem-solving, planning, and organizing (La Barbara & Soto-Hinman, 2009). Researchers like (Hart & More, 2013; Papacy & Bambara, 2014) recommended that general education teachers accommodate autism classrooms by creating daily planners, post-it notes, color coding for documentation, and visual timetables. To help students to develop time management skills, general education teachers could practice referring students to clocks, timers, alarms, and written calendars

(The National Autistic Society, 2012b). Students in the inclusive classroom would be ready to complete their activities to transition to the other event (Florian & Beaton, 2018).

According to Pratt (2008), students in elementary schools preferred teachers who cared about them, engaged them in learning activities in the classroom, made them feel important, used meaningful assessment, and made learning fun. Similarly, Mowrer-Reynolds (2008) suggested that teachers who were humorous, entertaining, funny, easy to talk to, approachable, and provided outside help to students were exemplary. Consequently, teacher effectiveness was the skills and qualities that a teacher had that influenced the student and maintained a positive teacher-student reaction in any situation (Pratt, 2008).

Therefore, one skill the general education teacher could use to accommodate students with autism was by providing wait time for them to process the information (Austin et al., 2011). Madriaga and Goodley (2009) mentioned those general education teachers would need to communicate clearly with well-defined requirements, instructions, and clear expectations for students to understand what was required. Besides, teachers maintained consistent routines and scheduled quiet times to help students calm down (Hare et al., 2014).

Another skill that teachers could use in the inclusive classroom was to introduce the new sensory experience using the students' interests (The National Autistic Society, 2012a; Madriaga & Goodley, 2009). Lawrence et al. (2010) mentioned that children with ASD were hypersensitive to sensory stimulation, including sound, touch, smell, and

people. Consequently, general educators will need to know the best time to transition the students between activities and classes. Furthermore, Lawrence et al. (2010) suggested that general education teachers needed to allow children diagnosed with autism to leave the classroom earlier or later than the leading group to lessen stress and frustration.

According to Austin et al. (2011), these positive behaviors were easy to learn. For example, developing a language, patience, and empathy were skills people could learn over time. Austin et al. further suggested that some of these skills could be challenging for novice teachers to develop. Conversely, qualified teachers have shown that these skills take little effort to acquire. More specifically, teachers who used them steadfastly in the classroom were highly rewarded.

In summary, the literature review for the competency of skills showed that general education elementary teachers' effectiveness displayed in their skillful manner. They provided a stress-free, safe, and fun-loving learning environment for children with differential abilities in the mainstream classroom. Developing a willingness to understand, making accommodations for children leads to happiness and a positive attitude to move from one activity to another for both students and teachers. It was essential to encourage meaningful discussions and decision-making in their transition program in and outside of the classroom. These children would be motivated to take on additional studies or feel inspired to work a job after they graduate and leave school (Papacy & Bambara, 2014).

Agency

Teacher agency is the fourth dimension in the LRC framework (Mu et al., 2015). To remain an effective teacher in an inclusive classroom, teachers had to engage in lifelong learning (Austin et al., 2011; Polk, 2006). Priestley et al. (2012) indicated that teachers who actively contributed a higher degree of professional judgment, discretion, and professionalism on their jobs should work with other professionals to gain more in-depth knowledge to respond positively to problems in the inclusive classroom. More importantly, the main distinctive feature of teacher agency should not seem like individuals who can function in his or her environment alone (Mu et al., 2015). Instead, general education teachers could perform in environmental conditions and shape different relationships with others in the community. Therefore, a teacher's performance occurs every day in and outside the classroom (Smith & Kennedy, 2014).

Current researchers (Austin et al., 2011; Bocala et al., 2010; Mu et al., 2015) shared similar thoughts that teacher agency referred to teachers who actively performed multiple tasks to facilitate learning in the general classroom setting. For example, Segall and Campbell (2012) suggested that teacher agency was all about teaching and learning in the mainstream classroom. Similarly, Priestley et al. (2012) viewed teacher agency as teachers having the capacity to shape their responsiveness to solving problematic situations, in and outside the inclusive classroom. Furthermore, Mu et al. (2015) found that this virtue helped teachers seek independent support and local organizations for training and experience while working in an inclusive classroom. In addition, Bocala et al. (2010) believed that teacher agency could be the behavioral component of attitude.

Additionally, Tao and Gao (2017) highlighted that teacher agency is different from teacher autonomy. In agreement with Strauss's findings, Mu et al. (2015) mentioned that this was important, mainly when teachers used it in the classroom as the only judge and executer in all educational matters. Mu et al. also indicated that teacher agency should be viewed differently from the concept or idea of teacher leadership. The reason is that teacher leadership focuses mainly on how some teachers are leading other teachers. In contrast, the teacher agency focused specifically on working with other communities and skilled professionals to enhance their careers. According to Mu et al., one crucial point leaders needed to consider was how teachers achieved the agency every day and what could hinder them from attaining this unique trait.

Another suggestion was that teachers remain successful while implementing the learning framework in their classrooms (Mu et al., 2015). General education teachers should seek support from community members and other skilled professionals in other disciplines. Therefore, seeking advice is crucial for these teachers in a regular classroom to learn as much as possible about the four main competencies and how they are used to influence students' success. More importantly, to note, teachers cannot wait for help to come to them. Instead, they should be willing and actively looking for support.

Bocala et al. (2010) found that five out of the nine peer-reviewed materials they evaluated required general education teachers from schools to network with other teachers across the country. The findings indicated that teachers were also encouraged to collaborate with the community to serve and assist students with disabilities. Mu et al. (2015) mentioned that the learning in a regular classroom professional competence tool

helped push teachers to seek support from various resources to ask for help actively. More specifically, learning in regular classroom teacher professional competence tool encourages teachers to work collaboratively to discuss how they could solve problems in the general classroom.

In the same way, the Interstate New Teacher Assessment and support consortium (2001) recommended that general education teachers have access to resources to support the unique styles of children with autism in the general classroom. Wong et al. (2012) suggested that public teaching education requires gathering materials and resources to find new information. Similarly, Mu et al. (2015) indicated also that accessing resource materials would help general education teachers to learn new knowledge and background about autism, advanced research, and new policies. Also, public education teachers needed to upgrade their experiences on the teaching competencies (Interstate New Teacher Assessment and support consortium, 2001).

Gillion et al. (2017) recommended general education teachers to work with the Speech-Language Pathologist (SLP), an essential professional group that supports the diagnosis, assessments, and treatment of children with ASD as they learn everyday activities. According to Gillon et al., associating with other professionals allowed general education teachers to reflect and evaluate their practices, set benchmarks, and improve students academically in the classroom. More importantly, working with other professionals would help general education teachers to identify effective methods that could be shared internationally and provide insights into the work of Speech-Language

Pathologist (SLP) who are in support of educating the masses about ASD (Gillion et al., 2017; Hampton & Kaiser, 2016).

Likewise, general education elementary teachers could work with experts in the field who shares similar background knowledge in ASD, advanced research, and new policy directives (Mu et al., 2015). Mu et al. mentioned further that one barrier to working with other experts was that available opportunity and time might be limited. However, teachers need to be self-motivated to find out more information on matters of autism. Similarly, Hendricks (2010) found that working with other professionals provided teachers with ongoing support, social opportunities and prevent social isolation. Nevertheless, general education teachers need to learn how to value other peoples' views and contributions to work and foster an inclusive workplace (Biesta et al., 2017).

Working with community members allowed teachers to access different support services (Witte & Sheridan, 2016). Also, support groups provide general education teachers with opportunities to meet with guest speakers and exchange and concerns in the community. Forte and Flores (2014) found that public education teachers had more connections with other parents of children with disabilities in the city. Furthermore, Biesta at al. (2017) believed that teachers would maximize their learning and advocacy in the community, become a source of support and emotional help, and develop a deeper understanding of the cultural, linguistic backgrounds in the community.

Schools that failed to form relationships and productive partnerships with parents and the community missed utilizing highly valued information and meaningful programs for children with autism (Witte & Sheridan, 2016). White and Sheridan further mentioned

that teachers with behavioral problems in rural communities reported less positive relationships with parents. However, teachers who joined efforts in local communities worked collaboratively together to develop a supportive and positive relationship for the social and academic setting. Besides, both teachers and students could benefit immensely from developing and forming productive partnerships with parents and the community.

Summary

The literature surrounding the competencies of knowledge, attitude, skills, and agency for general education teachers highlighted several problems in the inclusive classroom. Some key ideas that remain evident in this exhaustive research study highlighted the need for teachers to have regular training in ASD-specific courses and the need to attend professional development programs in special education. Such initiatives ensured that teachers could adequately and effectively address the behavioral and academic challenges in the inclusive classroom with children with autism.

The knowledge competency suggested that most teachers teaching in inclusive classrooms had a shallow understanding of inclusive education and lacked the knowledge and experience regarding teaching children with ASD. Competency of skills displayed in a teacher's skillful manner provides a stress-free, fun, and motivational environment for children with differential abilities in the inclusive classroom. The teacher's attitudes were also displayed in their nurturing managerial, supporting, and collaborative skills. These skills point towards helping all students be ready and better equipped with tools for further developing their social interaction skills and academics. Competency in the agency focused on building and maintaining a positive environment for children in the

mainstream classroom. It also gave teachers information on creating and developing a robust ethical working environment to work collaboratively with others and share best practices in ASD competencies. On the other hand, Mu et al. (2015) mentioned that more research is needed because many questions remain unanswered about how these four teaching competencies worked interdependently. Furthermore, there are questions about whether educational, psychological, social, and demographical changes could influence these teaching competencies.

The gap in the literature addressed the limited information on providing teachers with information on how the competencies could enhance student learning for children diagnosed with autism in the inclusive classroom. The data indeed extended more knowledge in the discipline and encouraged other researchers to build on the findings. The research supports the idea that school systems had to establish working strategies to facilitate and accommodate teachers to implement hands-on- activities in the inclusive classroom. Also, administrators should provide regular feedback, support, and consistent encouragement to boost teacher and student morale and encourage growth academically, socially, and emotionally (Mu et al., 2015).

As I analyzed the materials more carefully, Medley's (1977) teaching competence theory contributed to much in-depth understanding and knowledge. The teaching competence theories laid the foundation for the development of this research by encouraging teachers to include students with autism in the decision-making procedures and classroom activities as these activities were preparing them for a transition into

everyday life after graduation. Chapter 3 will focus on the methods used to select the participants, the research design, and the procedures for collecting and analyzing the data.

Chapter 3: Research Method

Introduction

In this nonexperimental quantitative cross-sectional study, I focused on determining if a difference exists in the teaching competencies of general education elementary teachers who received training in ASD-specific courses and those teachers with no training teaching children with autism in general education classrooms in the USVI. In this chapter, I explain the reason for selecting this research design. Included in this chapter is a description of the design, the survey instrument, sample participants, data collection procedures, data analysis, reliability and validity of the study, ethical considerations, and a summary.

Research Design and Approach

A cross-sectional research design was used to identify the possible differences in the teaching competencies of general education teachers who received training in ASD-specific courses and those teachers who had no such training in the general education classroom in the USVI. I selected the quantitative and cross-sectional survey design to describe the relationship between the variables. The independent variable was a categorical variable categorized into two groups: (a) teachers who have received training in ASD-specific courses and (b) teachers who had not received training in ASD-specific courses. The dependent variables were teacher competencies measured in four categories: (a) attitudes, (b) knowledge, (c) skills, and (d) agency on the LRC (Mu et al., 2015).

The cross-sectional design was fitting for this study because this design measures two or more variables. Furthermore, the cross-sectional design uses random selections to

select participants in a study. One group included general education elementary teachers with training in ASD-specific courses, and the other group consisted of teachers with no training in ASD-specific courses.

Teaching competencies in ASD-specific courses is a relatively new area of study and exploration in the social sciences. Therefore, this study could help educators inform decision making about the type of programs that could help to improve the teaching practices and approaches used in the inclusive classroom. This research was also essential because other researchers would be able to build on the findings in this study. Baldiris (2016) posited that the field is waiting for a treatment approach to help children with ASD. Furthermore, Cassady (2014) highlighted that autistic culture has developed over the last 30 years; some researchers are seeking a cure, while others believe that autism should be accepted as a difference in people and not treated as a disorder.

The research may also help to illuminate new knowledge in helping other educators, teachers, and stakeholders in teaching and caring for children with disabilities in the USVI. Also, this research could help administrators to develop and organize regular training programs and workshops to assist teachers and create awareness of the disorder. Benedict et al. (2016) stated that early behavioral, cognitive, and speech interventions could help children with autism gain self-care ability and improve their social and communication skills in daily life. Cavaradossi and Solomon (2016) stated that the needs of children with autism differ consistently. Thus, each child learns at a different level and understands concepts at different times. Therefore, teachers need assistance in tailoring class assignments to meet the specific needs of each child.

Methodology

Population

The participants constituted a convenience sample of public elementary teachers who teach children with autism (K–6) in the USVI in St. Croix. I used the public domain database to locate participants to take part in the study. A convenience sample provided a broad cross-section of the teaching population in area one. Participants in this study were selected as teachers readily available and certified elementary school teachers, as this fits the research. Teachers from the elementary schools were the participants in the survey; the prevalence rate of autism is highest among children between ages 3 and 8. Furthermore, early intervention programs are crucial for these students to succeed academically, emotionally, and socially (Autism Speaks, 2014). For this study to be practical, the power analysis for a one-tailed test at $p = <.05$ should have an effect size of .30 for an 80% power, which requires a sample size of about 85 participants (Cohen, 1992).

Sampling and Sampling Procedures

Participants for the study came from different elementary schools located in the, in St. Croix. I used the public domain database to locate participants to take part in the study. More female teachers teach in these schools than male teachers (Wehmeyer & Patton, 2017). A convenience sample of public elementary teachers who teach children with autism at the K–6 level took part in the survey. Surveys were sent out to participants and collected via Survey Monkey through emails, LinkedIn, WhatsApp, Twitter, and Facebook Messenger. Using a convenience sample captured an apparent demographical

diversity of school teachers in St. Croix. In the district of St. Croix, there were 328 elementary teachers across the eight elementary schools. Based on past research, I anticipated a medium effect size when examining general education elementary teachers' competencies and training in teaching children with autism in the USVI. Mu et al. (2015) found that the mean differences presented a large, medium-to-large, and large effect size, respectively. A G-power analysis is used to determine the appropriate size. Cohen (1992) explained that medium effect size represents an effect visible to the naked eye of a careful observer and that approximates the average size of observed effects in various fields. Therefore, if a researcher performs a multiple regression cross-sectional analysis and performs all the significance tests at .05, a cell size of 30 with the statistical power 0.8 or 80%, then the minimum required sample size was 85 participants.

Participants received an email invitation (see Appendix A) with a brief introduction of the study and a link. The link took participants to the study's landing page, which contained the informed consent form, a brief background of the study, the purpose, nature of the research, participant confidentiality, how participants should proceed with the survey, and voluntary actions and ethical considerations. Clicking the button labeled *next* at the end of the informed consent served as consent to participate, and the participant started the survey. There was no need for participants to return anything. Once the participants clicked *submit* on the survey, the results were submitted anonymously. Participants could contact me with questions via an email address or contact number on the informed consent.

Procedures for Recruitment, Participation, and Data Collection

Before proceeding with the project, I obtained research approval from the Walden University IRB office (approval number 12-31-20-0546465). I posted the consent form to social media platforms, including LinkedIn, Twitter, Facebook Messenger, and WhatsApp. The informed consent supplied a brief background about the study, the purpose, nature of the study, participant confidentiality, how participants should proceed with the questionnaire, voluntary actions, and ethical considerations.

The link connected the participants to Survey Monkey, where they read the informed consent and by clicking on *next* indicated their permission and started the survey. Participants concluded the survey by clicking *submit*. Responses were anonymous as completed surveys were emailed back to me without any identifiable information.

Instrumentation and Operationalization of Constructs

The independent variable was a categorical variable divided into two main groups: teachers who had training in ASD-specific courses and teachers who had no training in ASD-specific courses. The independent variable was not part of the existing scale. Instead, the categorical question became part of the existing survey as the first question to complete.

The LRC (Mu et al., 2015) measures the dependent variables of the four teaching competencies—attitude, knowledge, skills, and agency—as four continuous variables, one for each competency. I wrote the instrument's developer to request permission to use it in this study as the tool was available from the PsycTests Database from Walden

University Library (see Appendix B). I received permission to use the survey (Appendix C). The survey came from a study in Beijing during a series of LRC workshops conducted for 1,159 elementary teachers and 554 junior high school teachers, of which 83.97% were female teachers.

The LRC (see Appendix D) has a total of 28 items with a five-point Likert scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The Likert scale was used in this study to assess the professional competence of general education teachers in the inclusive classroom. The breakdown of the items was as follows. The first competency has eight questions to evaluate teachers' attitude while educating students with disabilities in the general classroom. The second competency has six questions to examine how knowledgeable the teacher is about policies, theories, and practices about children with disabilities in the general classroom. The third competency, skills, has eight questions designed to assess a teacher's expertise in planning, implementing, and evaluating the instructional approach used when teaching in the inclusive classroom. Finally, the fourth competency, agency, has six questions that focus on a teacher's agency in seeking support to serve children with disabilities in the general classroom setting. The 28-items in the LRC were scored by multiplying the number of items in each competency and then summing each group to obtain four total scores. Each competency was treated as a continuous variable and the scores from each subtotal group as continuous data.

The LRC is considered a reliable survey (Mu et al., 2015). Compared to the Beijing Learning in Regular Classroom Teachers' Professional Competence Scale, the LRC was similar (Mu et al., 2015). In a recent study Mu et al. found the mean score for

teacher agency (m = 3.10) to be significantly and statistically lower when compared with the scores on teachers' attitude (m = 3.99, t = –29.51, p < .001, r = .70), teachers' knowledge (m = 3.47, t = –13.60, p < .001, r = .42), and the skills of the teachers (m = 4.03, t = –33.49, p < .001, r = .75) that was measured previously by the Beijing professional competence scale. The higher scores of the LRC revealed a failure to implement a reliable support system to improve and better serve students with disabilities who had diverse needs in the inclusive classroom.

There was a medium relationship between teacher agency and teacher attitude (r = .48, p < .001). A relationship also existed between skills and teacher agency (r = .52, p < .001), which explained the concept that teacher agency stands on its own as an individual category as the other three competencies, but teachers lacked resources, training, and a reliable support system for supporting children in the inclusive classroom (Mu et al., 2015). Also, the Cronbach alpha reliability showed that the questions on the LRC scale measured a single construct (Mu et al., 2015). The alpha reliability for the instrument was .94, attitude = .89, knowledge = .89, skills = .90, and agency = .83. These scores demonstrate a better fit to predict that teachers' agency needs more attention and improvement to help meet the diverse needs of children with deferential disabilities in a live classroom setting (Mu et al., 2015).

The LRC was an appropriate and valid instrument for this study as it draws on Medley's (1977) theory that explains how teachers should develop competencies in knowledge, skills, attitudes, and their professional lives in the workplace and the community. The construct's validity using a non-standardized regression to measure the

four categories combined constituted 61.32% of the variance and supported the claim that teachers in Beijing lack training in seeking support to help with the services for students with disabilities in the inclusive classroom (Mu et al., 2015). The information collected from the surveys was analyzed using the IBM SPSS 27.0 for Mac.

Operationalization of the Variables

The independent variable was a categorical variable divided into two main groups: teachers who had training in ASD-specific courses and teachers who had no training in ASD-specific courses. The independent variable was not part of the existing scale. Instead, the categorical question became part of the existing survey as the first question to be completed. The dependent variables were the four teaching competencies: attitude, knowledge, skills, and agency (Mu et al., 2015). The LRC (see Appendix D) measured the four continuous variables, one for each competency.

The first question on the survey asked if the participant had taken previous ASD-specific courses or not, as per the independent variable in the research. The first competency had eight questions to evaluate teacher attitudes while educating students with disabilities in the general classroom. The second competency contained six questions to examine a teacher's knowledge about policies, theories, and practices about children with disabilities in the general classroom. The third competency, skills, had eight questions designed to assess expertise in planning, implementing, and evaluating the instructional approach used when teaching in the inclusive classroom. Finally, the fourth competency, agency, had six questions that focused on agency in seeking support to serve children with disabilities in the general classroom setting. The 28-items of the LRC were

scored by multiplying the number of items in each competency and then summing all the numbers for each group to obtain four total continuous scores.

Table 1

Operational Definition of Independent and Dependent Variables

Independent variables	
Training during and following a teacher's certification	The question will ask the participant if they have taken or not taken any previous ASD –specific courses. Yes No
Dependent variables	
Attitude	Participants will complete the LRC. The competency has eight questions to evaluate the teacher's attitude towards the student with a disability in the classroom.
Knowledge	Participants will complete the LRC. The competency has six questions to evaluate the teacher's knowledge about policies, theories, and practices about children with disabilities in the classroom.
Skills	Participants will complete the LRC. The competency has eight questions to assess the teacher's expertise and instructional planning in the classroom.
Agency	Participants will complete the LRC. The competency has six questions to evaluate how the teacher seeks support from other professionals in the discipline.

Data Analysis Plan

The information from the participants was analyzed using the IBM SPSS 27.0 for Mac (Ghozali, 2016). SPSS is a computer-based software package used to help researchers clean, manage, and quickly analyze complex statistical data. In cases where data were missing or where the participants could not complete sections of the survey or did not answer, items of the survey were excluded from the analysis.

A one-way analysis of variance (MANOVA) determined the possible statistically significant differences in teacher competencies for teachers that had taken ASD-specific courses versus those teachers with no training teaching children with autism in general education classrooms. A one-way MANOVA was used to analyze significant differences between two continuous, dependable variables and one categorical independent variable (Simple and Multiple Linear Regression, 2018). In this case, there was one categorical variable (training) and four continuous dependent variables (knowledge, attitudes, skills, and agency), which made the one-way MANOVA an excellent fit to explore a possible relationship between the independent and dependent variables. Several assumptions underwent testing before completing a one-way MANOVA (Simple and Multiple Linear Regression, 2018). First, they should have two or more dependent variables measured as continuous variables. The independent variable should consist of two or more categorical separate groups. Secondly was the independence of observation, which means that each participant was only allowed to participate in one group in the research sample. Third, there needed to be an adequate sample size. This assumption suggested that the larger the sample size, the better and that there should be more cases in each group than the number of dependent variables. Fourth, these two groups in my study should be equally compared and should not have any univariate outliers. Simple and Multiple Linear Regression (2018) stated that the multivariate outliers mean that there should not be any unusual combination of scores on the dependent variable. Fifth, there should be multivariate normality in each group. Multivariate normality implies that each of the dependent variables for each independent variable group was tested using the Shapiro-Wilk test of

normality. Sixth, there was a linear relationship between each pair of dependent variables for each independent variable group. Linearity could be tested by using a scatterplot matrix. Also, the homogeneity of variance in each group means each group was equal in size. Therefore, Levene's test would test equality across the two groups. Next, multicollinearity took place when the dependent variables related to each other in the regression. If the numbers between the predictor variables were above 0.9, multicollinearity was said to be present. If the number is moderately low as 0.5, then there was no multicollinearity.

These assumptions provided the main building blocks for making this statistical tool the best fit for this study. In this study, the participants would constitute a convenience sample of male and female public elementary teachers who teach children with autism (K-6) in the USVI. All assumptions would be examined throughout statistical data and charts.

Threats to Validity

External Validity

Participants were the general elementary education teachers in the USVI from District one, on the island of St. Croix. Presently, I am an employee on St. Croix, as a guidance counselor at a Public Junior High school. Before, I was a Social Studies teacher at the High School level. Since September 2019, four of the elementary schools on the island have merged with the middle school, and now these four schools are called k-8 schools. Glesne (2011) stated that conflict of interest could affect the research, and therefore, it must be avoided at all costs. As a researcher, I would not have any direct or

indirect contact with the participants. Since I worked at the high school level in the past, I am unfamiliar with most teachers at the elementary school level. Even so, participants will not come from the school that I am presently working.

The research design protects the participants from being overburdened during the school semester with a short window of about three weeks to complete the LRC. The consent form and a description of the research project went out to the participants before collecting the data. Participants were conveniently sampled and distributed randomly into two groups. The two main groups were teachers that have training in ASD-specific courses or teachers that have had no training in ASD-specific courses. All data obtained in this research was stored on the computer with a security password and code. After five years, all documentation will be deleted permanently from the machine.

Internal Validity

Validity means the extent that the scores on the instrument measure the test it was purporting to measure. Validation of this test had been completed by; the Principal Component Analysis (Hotelling, 1933), Pearson (1901), Kaiser's (1960) eigenvalue-above-one criterion, Cattell's (1966) scree test of inflection point) moreover, Horn's (1965) parallel analysis. These validations justified retaining the four factors on the LRC measuring tool (Mu et al., 2015). Therefore, the LRC was selected to use in this research study to measure the consistency of general education teachers' competencies in attitude, knowledge, skills, and agency teaching children with autism in the USVI. The LRC had 28 items using a five-point Likert scale ranging from 1= *strongly disagree* to 5= *strongly agree*. The items' breakdown was as follows: attitude, comprised of eight questions,

knowledge, six questions, skills, eight questions, and agency, with six questions. The measurement amongst the four dependent variables consisted of 61.32% of the variance, with more than 80% indicating that it was a good measure of the reliability of the study.

In this research study, the focus would be on examining whether a relationship existed between the four dependent variables, attitude, knowledge, skills, and agency among teachers with or without training teaching children with autism in general education classrooms in the USVI. Mu et al. (2015) used a convenience sample to gather the data. The sample consisted of 1159 primary school teachers and 544 Junior high school teachers from 272 schools located in seven districts in Beijing. The convenience sample was then randomly assigned to two groups. The first group constituted (820 respondents) and the second group (883 respondents) claimed the validity and reliability of the instrument and comparative analysis. In this study, I also used a convenience sample of male and female public elementary teachers who teach children with autism (K-6) in the USVI from the district of St. Croix. A convenience sample of this study provided a broad cross-section of the teaching population in area one. Mu et al. stated that a convenient sample in research helps to lessen biases and assure group equality and maintained consistency.

Ethical Procedures

I ensured that all reliable protection and considerations occurred before collecting the data and during the research study. I upheld all rules and regulations of the Walden University Research Protocol (Walden University Center for Research Quality, 2018) before making contact with the participants. Also, I adhered to the ethical procedures and

guidelines for the American Psychological Association [APA] (2013). I gained permission and the approval of the Walden University Institutional Review Board (IRB). Walden's approval number for this study is 12-31-20-0546465. Furthermore, I will report the results of the findings with honesty, integrity, and transparency.

Participants received the surveys through the embedded Survey monkey link, which provided them with a brief background of the study, participants' confidentiality, and how they should proceed with the survey. Then participants clicked on the continue button in agreement to move forward to completing the survey (Walden University Center for Research Quality, 2018).

Participants were notified that participating in the study is voluntary and that they could withdraw at any time without having to feel guilty of any loss or benefits (APA, 2013; Walden University Center for Research Quality, 2018). Participants knew why they were selected to participate in the study and why the research occurred. By completing the survey, participants could better understand some of the priority needs of children with autism.

Another ethical consideration in the research is confidentiality (APA, 2013). To maintain privacy and confidentiality practices included gaining access and permission to the research sites with the approval of proper authorities. Guidelines would be already in place to protect the privacy and security of all the participants. Participants' identities remained anonymous to prevent psychological, legal, social, vocational, and economic harm.

To resolve the conflict of interest and biases in the data, participants would not come from the school where I am working presently. These standards were in agreement with the American Psychological Association (2010, Standard 3.06). Researchers would not engage in any illicit activities with any organizations to gain financial or professional benefits. Conflict of interest becomes a problem when the researcher has a personal and professional interest in the work they are trying to accomplish. These dual roles in the research could cause the researcher not to conduct, report, and interpret the results honestly. Therefore, taking this initiative would help to lessen the conflict of interest and biases in the data. I worked at the high school level for the past thirteen years. I am unfamiliar with the majority of teachers at the elementary level. Furthermore, no member of my family will take part in the survey.

All information from the survey will remain anonymous and will be in a file on the computer in strict security with a code that will keep it safe. The researcher would explain how the data was stored and not used for purposes other than the research (The Belmont Report, 1979). I would be the only one to have access to the computer. After completing the study, the data will be stored for five years, and then it will be destroyed (Walden University Dissertation Guidebook, 2018). I would only share the results of the study with the participants should they requested a copy.

Summary

Chapter 3 outlined and explained the procedures that I will be using in my research. It presents a clear description of the population, sample, research design, rationale, and methodology. I also highlighted the procedures for recruiting participants,

the data collection procedures, data analysis procedures, and the operationalization of variables. The LRC (Test Development) measures the dependent variables and a categorical question to measure the independent variable. The one-way- MANOVA was used to determine significant differences in the mean scores for the four dependent variables and the independent variable. I addressed the internal and external validity of the data. I also discussed the ethical considerations of the study and explained how I would adhere to the procedural guidelines of gathering, storing, and analyzing the data. In chapter 4, the discussions will focus on the results of the survey, the research questions and a summary.

Chapter 4: Results

Introduction

The purpose of this nonexperimental quantitative cross-sectional study was to determine if there was a difference in teaching competencies for general education elementary teachers who received training in ASD-specific courses versus those teachers who had not received training in ASD-specific classes for children with autism in general education classrooms in the USVI. Participants were invited through invitations via email, LinkedIn, Twitter, Facebook Messenger, and WhatsApp. Data were collected through Mu et al.'s (2015) LRC questionnaire (Appendix D). The questions were in the original form with the approval of the author (Appendix C). The survey had four sections: (a) attitude, eight questions; (b) knowledge, six questions; (c) skills, eight questions; and (d) agency, six questions. One categorical question became part of the existing survey as the first question, asking if participants had taken previous ASD-specific courses per the independent variable. In this chapter, I describe the data analysis results for each of the research questions and hypotheses in this study:

RQ1: Is there a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$1: There is not a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having

received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a1: There is a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ2: Is there a significant difference in the teacher competency of attitude for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0 2$: There is not a significant difference in the teaching competency of attitude for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

$H_a 2$: There is a significant difference in the teacher competency of attitude for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ3: Is there a significant difference in the teacher competency of knowledge for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$3: There is not a significant difference in the teacher competency of knowledge for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a3: There is a significant difference in the teaching competency of knowledge for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ4: Is there a significant difference in the teacher competency of skills for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$4: There is not a significant difference in the teacher competency of skills for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a4: There is a significant difference in the teacher competency of skills for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

RQ5: Is there a significant difference in the teacher competency of agency for general education elementary teachers in the USVI based on either having received

specific training by ASD-specific courses or not having received specific training in ASD-specific courses?

$H_0$5: There is not a significant difference in the teacher competency of agency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

H_a5: There is a significant difference in the teacher competency of agency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses or not having received specific training in ASD-specific courses.

A one-way MANOVA was used to compare the mean differences between the four continuous dependent variables—attitude, knowledge, skills, and agency—based on the 28 questions on the LRC and on the categorical independent variable of having taken ASD-specific courses or not. A one-way MANOVA can be used to determine if a significant difference exists between the four groups as a whole and separately. The one-way MANOVA assessed the nine assumptions of the MANOVA and ruled out any violations present in the data. The software used for data analysis was SPSS Version 27.

Data Collection

The data collection process lasted for three weeks, and the survey took participants about 10 to 20 minutes to complete. Participants were allowed 20 minutes to complete the survey. Participants did not have the option of taking a break and returning to the survey at a later date or time. Ninety individuals responded to the survey. The data

were exported from Survey Monkey as numerical data to an MS Excel file for cleansing. After performing the initial data cleaning of the 90 primary respondents, I found that only 80 respondents completed the instrument provided in the survey that was to be used in the cross-sectional study and analyzed with a one-way MANOVA. The other 10 participants had failed to complete the survey, so their responses were excluded from the analysis because they did not meet the inclusion criteria. The Excel file was cleaned and imported into SPSS. Descriptive statistics showed the questionnaire responses.

Descriptive Analysis

Descriptive statistics summarized the data in a clear, concise, and organized manner. This analysis showed the measure of frequency such as ratio, rate, and percentages. The descriptive analysis displayed the central tendencies of mean, median, and mode and displayed the dispersion and variations and the standard deviation. In addition, this analysis displayed the position, such as the ranks and quartile ranks of the different values in the SPSS output (Kaur et al., 2018).

Measures of the central tendency were programmed to summarize the data on training for the four dependent variables. The dispersion measures show the calculation to understand the variability of scores for training on the four dependent variables. In this study, the first question on the survey asked if the participant had any training in ASD-specific courses, per the independent variable. Descriptive data showed that 50 (61.73%) teachers said they did not receive any training in ASD-specific courses, and 30 (24.00%) teachers said they did receive some form of training in ASD-specific courses.

Each group's number of items was calculated to obtain four total scores for the four dependent variables. The following were the results of this analysis as indicated in Table 2. Scores for *yes* for attitude were higher (M = 31.10, SD = 4.67) than those for *no* (M = 28.56, SD = 5.61). Scores for *yes* for knowledge were higher (M = 19.23, SD = 4.96) than those for *no* (M = 18.30, SD = 4.33). Scores were similar for skills and *yes* (M = 26.30, SD = 5.98) to scores for skills and *no* (M = 26.36, SD = 5.81). Agency scores for *no* were M = 18.64, SD = 4.78), and the agency scores for *yes* were M = 18.66, SD = 4.40. Table 2 displays the descriptive statistics of the means and standard deviation of each of the four dependent variables.

Table 2

Descriptive Statistics of the Means and Standard Deviations for the Four Dependent Variables

	Training	M	SD	N
Attitude	No	28.56	5.61	50
	Yes	31.10	4.67	30
	Total	29.51	5.39	80
Knowledge	No	18.30	4.33	50
	Yes	19.23	4.96	30
	Total	18.65	4.57	80
Skills	No	26.36	5.81	50
	Yes	26.30	5.98	30
	Total	26.33	5.84	80

Agency	No	18.64	4.78	50
	Yes	18.66	4.40	30
	Total	18.65	4.61	80

Data Analysis

I conducted a one-way MANOVA to examine if training influences the LRC factors (attitudes, knowledge, skills, and agency) for teachers teaching ASD children in the general education classroom. To examine the data collected from participant response to 28 questions on the LRC, I computed a one-way MANOVA to address the research questions. A one-way MANOVA is a multivariate analysis used to test the differences between groups of independent variables (Laerd Statistics, 2018). There were four groups of teaching competencies in the questionnaire. The independent variable was a categorical variable with two main groups: teachers who had training in ASD-specific courses and teachers who had no ASD-specific training. The independent variable was not part of the existing scale. Instead, the categorical question became part of the existing survey as the first question completed. The dependent variables were the four teaching competencies; attitude, knowledge, skills, and agency (Mu et al., 2015). These variables were measured using the LRC.

Assumptions for a One-Way MANOVA

Before running the one-way MANOVA analysis, I examined the data to ensure there were no violations of the assumptions. I also checked to see how well the data fit the one-way MANOVA. After carefully examining the study variables, I found that the

study data met all the required assumptions. The first and second assumption of the one-way MANOVA regression required that the study have two or more continuous dependent variables and one categorical independent variable with two or more groups (Byrne, 2017). The dependent variables in my study were attitudes, knowledge, skills, and teacher agency, and measured as continuous variables with ordinal levels: *strongly disagree, disagree, neutral, agree,* and *strongly agree*. The independent variable, training, was a nominal variable, with two categorical groups. Thus, the data met the first and second assumptions of the multivariate regression model. The third assumption was that each variable should be observed independently of the other (Pallant, 2020). The teachers were either in Group 1 or Group 2 based on their response to the first question of the assessment; thus, this independence of observation is mainly the study design rather than something tested for (Yandell, 2017).

The fourth assumption suggested that the data should have an adequate sample size. In the between-subjects' factors (Table 3), the sample size for the N column is 80 (N = 50 + 30). These values indicate the cells were not equal. Data that show a sample size imbalance would not be a tell–tale sign of a poor study. Thus, a researcher does not have to have equal-size groups to compute the statistics accurately in the data (Kahan et al., 2015). More importantly, it would be easier to let the experimental software control the randomization rather than keeping track of the number of participants in each condition. To determine the estimated sample size for this research study, I used a G-Power analysis. Cohen (1992) stated that the G-Power analysis for a one-tailed test at $p = <.05$ should have an effect size of .30 for an 80% power, which requires 85 participants.

Table 3

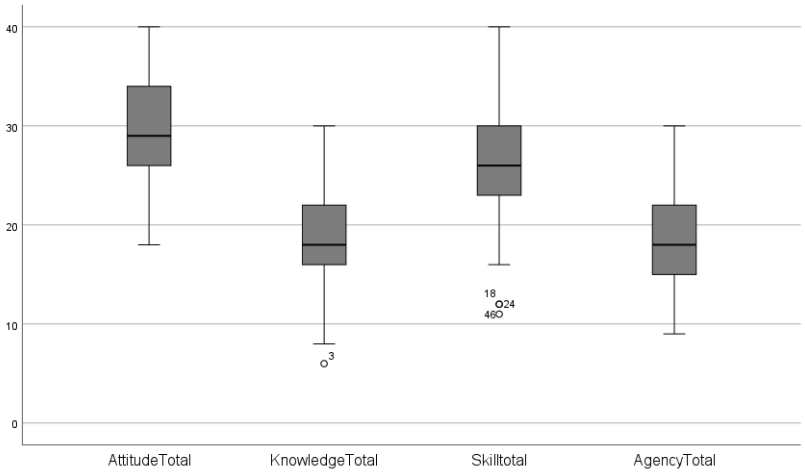
Results of the Between Subjects Factor Showing Total Number of Participants

		Value label	N
Training	0	No	50
	1	Yes	30

The fifth assumption was that there were no univariate or multivariate outliers in the data. Outliers were usually extremely too small or too large in the data set (Yandell, 2017). To check for outliers in the data, I conducted a review using the explore dialog box procedure in SPSS (see Figure 1). I transferred the dependent variables into the dependent list box. Then by selecting the boxplot, the software generated the output. Any point in the data set over 1.5 the length from the box size were outliers, and any point above three box sizes were extreme outliers indicated in the plot with an asterisk (Laerd Statistics, 2018). There were no cases removed as univariate outliers. Figure 1 displays the results of the box plot showing no univariate outliers in the data meeting the assumption.

Figure 1

Results of the Box Plot Showing No Univariate Outliers in the Data



Because the analysis was a one-way MANOVA, the data were assessed for multivariate outliers using the Mahalanobis distances (Tabachnick & Fidell, 2013). I created a new data set called MAH_1, where the data were computerized in descending order, with the most significant number equaling 15.09 and the probability value at .0045. When compared against the critical value, there was no presence of multivariate outliers found in the data as assessed by Mahalanobis distance x2(4) =18.47, p = .001.

The sixth assumption was that there must be multivariate normality in the data (Byrne, 2017). Four Shapiro-Wilk tests and Kolmogorov- Smirnov tests describe the normality among the four dependent variables (see Table 4). Shapiro and Wilk (1965) stated that if the value in the column is more than .05, it meets the assumption, and the researcher should keep the null hypothesis. Besides, if the value is less ($p<.05$), the data is not normally distributed, meaning it did not meet the assumption, and the researcher should reject the null hypothesis. Table 4 below shows the Shapiro-Wilk Test of

Normality result among the four sets of dependent variables, included attitude, knowledge, skills, and agency scores evenly distributed as assessed by Shapiro-Wilk's Test (p>.05), thus meeting the assumption.

Table 4

The Shapiro-Wilk's Test of Normality Amongst the Four Sets of Dependent Variables

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Attitude Total	.080	81	.200*	.978	81	.176
Knowledge Total	.089	81	170	.982	81	.321
Skills Total	.063	81	.200*	.984	81	.405
Agency Total	.083	81	.200*	.985	81	.473

Note. *. This is a lower bound of the true significance. * Lilliefors Significance Correction

The seventh assumption was that there should be a linear relationship between each pair of dependent variables for each independent variable group. Figure 2 shows some linear trends as the points are not as scattered as those in Figure 3. Pallant (2020) highlighted that the higher the correlation in either direction (positive or negative), the more linear the association would be between two variables, and the more pronounced the trend will be in a scatterplot. For Figure 2, the value of x increases as the value of y increases, and in Figure 3, the strength of the linear relationship was the same for the variables in question, but the direction is different. A positive relationship produced an

upward slope on a scatterplot, and a negative relationship produced a downward slope (Byrne, 2017). The scatterplot graph does not funnel out or make a curve. A linear relationship with a slope and begins at the origin of the graph is a direct proportion. Hence, this may indicate that a change of one unit on the graph's x-axis resulted in a change of one unit on the y axis. Therefore, it was necessary to note that when a slope is impacted negatively in linear relationships, it will show that the value decreases and the x value increases (Pallant, 2020). Figure 2 displays a scatterplot diagram showing the linear relationship between teacher attitude and teacher agency in the Pearson's Correlation matrix.

Figure 2

Scatterplot of X and Y: Correlations Between Teacher Attitude and Teacher Agency

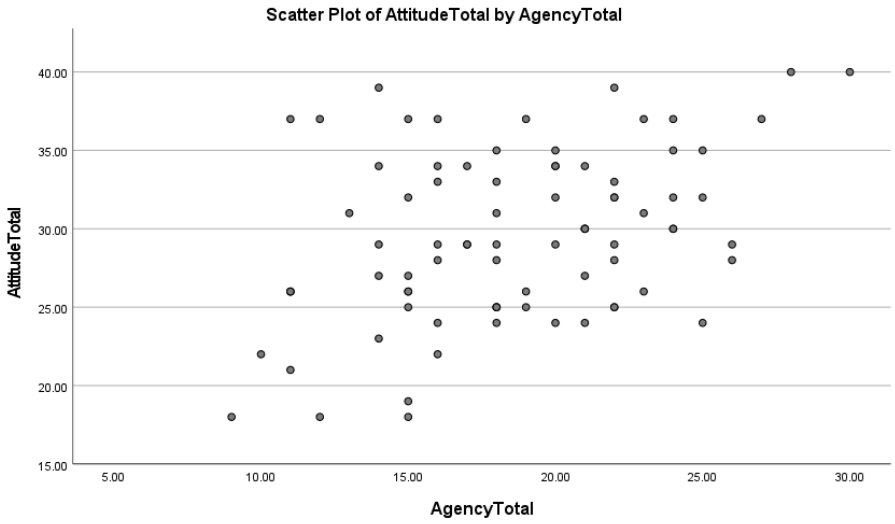
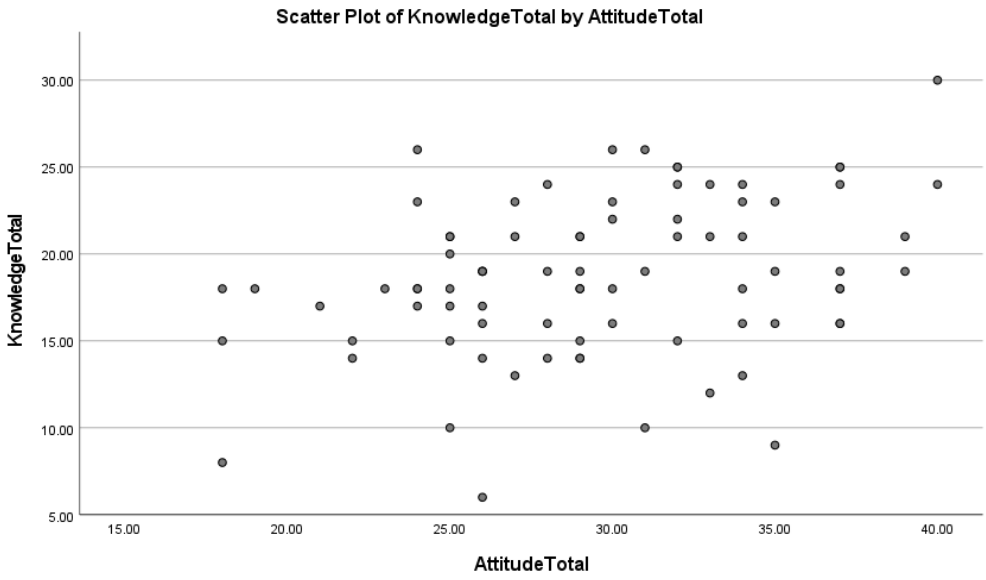


Figure 3

Scatterplot of X and Y: Pearson's Correlations Between Teacher Knowledge and Teacher Agency



The eighth assumption suggested that the data must have equality of variance-covariance matrices and homogeneity of variances (Yandell, 2017). As indicated in Table 5, the Box's M test checks the assumption equality of variance-covariance across the four groups using $p<.05$ as the main criterion to test the null hypothesis. The Box's M value of 34.336 was significant, $p<.05$, indicating significant differences between the covariance matrices $p<.05$. Hence, the assumption of the equality of variance-covariance matrices was violated. Therefore, Pillai's Trace was used instead of Wilks' Lambda test (Byrne, 2017).

Table 5

Results of the Box's Test of Equality of Covariance Matrices

Box's M	F	df1	df2	Sig

33.575	3.153	10	17458.005	.000

Levene's test assesses if the groups have equal variances. Should the test show statistical significance (i.e., $p < .05$), it means that the variances are not equal, meaning it has heterogeneous variances. However, if the test was not statistically significant (i.e., $p > .05$), there were equal variances, meeting the assumption of homogeneity of variances. The results of the Levene's Test, in Table 6, show that the assumption of homogeneity of variance was present for the four teaching competencies, including; Attitude = .448, $p>.05$; Knowledge= .439, $p> .05$; Skills = .629, $p > .05$; and Agency = .917, $p > .05$.

Table 6

Results of the Levene's Test of Homogeneity of Variance for the Four Dependent Variables

		Levene Statistic	df1	df2	Sig
Attitude Total	Based on Mean	.581	1	78	.448
	Based on Median	.542	1	78	.464
	Based on Median and with adjusted df	.542	1	71.742	.464
	Based on trimmed mean	.581	1	78	.448
Knowledge Total	Based on Mean	.606	1	78	.439
	Based on Median	.634	1	78	.428
	Based on Median and with adjusted df	.634	1	77.214	.429
	Based on trimmed mean	.657	1	78	.420
Skills Total	Base on Mean	.235	1	78	.629
	Based on Median	.213	1	78	.646
	Based on Median and with adjusted df	.213	1	77.954	.646
	Based on trimmed mean	.214	1	78	.645
Agency Total	Based on Mean	.011	1	78	.917
	Based on Median	.031	1	78	.862

Based on Median and with adjusted df	.031	1	75.863	.862
Based on trimmed mean	.011		78	.915

Note. Test the null hypothesis that the error variance of the dependent variable is equal across groups

The ninth assumption was that no multicollinearity should be in the data (Swinscow & Campbell, 2002). In statistical terms, the correlation measured a statistic called the correlation coefficient (Altman, 1990). To check for multicollinearity among the four variables and measure the direction and strength of linear covariation between the four continuous variables. Table 7 shows the Pearson Correlation among the four dependent variables. The letter r gave the Pearson correlation, and the correlation ranges in value from +1.0 to -1.0 (Swinscow & Campbell, 2002). To meet this assumption, Mukaka (2012) stated that it would be better to have approximately equal cell size, which means that the most apparent cell size (N) was not more than 1.5 times larger than the smallest cell size (N). The cell size for this study is N=80. In a one-way MANOVA, this assumption was as follows: one of the assumptions of the one-way MANOVA is that, at a bare minimum, there were as many cases (e.g., participants) in each group of the independent variable as there was the number of dependent variables.

The variables should moderately correlate with each other. The Pearson correlation analysis measures the direction and strength between the four competency variables. The results show in Table 7 that Teacher competency of attitude has a weak and positive correlation with teacher competency of knowledge r (81) = .329**, p<.001, which means the direction of the relationship was positive, as these variables tend to increase together. Teacher competency of attitude also had a positive and weak

correlation with teacher competency of skills r (81) = .272*, p< .001. Teacher competency of attitude had a weak and positive correlation with teacher competency of agency r (81) = .394**, p<.001. Teacher competency of skills had a moderate and positive correlation with teacher competency of knowledge r (82) =.522**, p< .001. Teacher competency of the agency had a positive and moderate correlation with teacher competency of knowledge r (82) =. 524**, p<.001 and a positive and moderate correlation with teacher competency of skills r (82) = .511**, p<.001. Thus, to meet this assumption, there was a weak to moderate correlation between all dependent variables. Table 7 display the results of the Pearson correlations showing no multicollinearity among the four dependent variables.

Table 7

Pearson Correlations Among the Four Dependent Variables

		Attitude Total	Knowledge Total	Skills Total	Agency Total
Attitude Total	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	81			
Knowledge Total	Pearson Correlation	.329**	1		
	Sig. (2-tailed)	.003			
	N	81	82		
Skills Total	Pearson Correlation	.272*	.522**	1	.
	Sig. (2-tailed)	.014	.000		
	N	81	82	82	
Agency Total	Pearson Correlation	.394**	.524**	.511**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	81	82	82	82

Note. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Results

The data in my study were analyzed using two statistical methods. The first method was descriptive statistics used to organize and summarize the data clearly and concisely (Kaur et al., 2018). Descriptive statistics involved a thorough presentation of the summary statistics and the mean and standard deviation differences of the four dependent variables. The independent variables that had split these measures of central tendency to summarize the data on training for the four dependent variables. Measures of dispersion were summarized to understand the variability of scores for training on the four dependent variables. The following were the results of this analysis, as displayed in Table 2. The total means and standard deviations for the four variables were; attitude, N= 80, (M= 29.51, SD= 5.39); knowledge N= 80, (M=18.65, SD=4.57); skills N= 80, (M=26.33, SD= 5.84) and, agency N= 80, (M=18.65, SD= 4.61).

Secondly, the multivariate analysis of variances determines the differences between the variables (Laerd Statistics, 2018). The questions themselves will determine the answer to the five research questions. Since the assumption results for Box's M test were significant, P=.001, indicating a significant difference between the covariance matrices, then Pillai's Trace test was used to correct this issue.

Research Question 1

RQ1: Is there a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received specific

training by ASD-specific courses and those that have not received specific training by ASD- specific courses?

To answer research question 1, the one-way MANOVA was used to assess the overall teacher competency for general education elementary teachers in the USVI based on all of the research questions and hypotheses on either having received specific training by ASD-specific courses and those that have not received specific training by ASD-specific courses. The Pillai's Trace test calculates a rough approximation to the F statistic and a corresponding p-value on training on a linear combination of the four dependent variables. If the p-value is less than some significance level (i.e., a= .05), then the null hypothesis of the MANOVA is rejected. Table 8 shows that the Pillai's Trace test was not significant F (4,75) = 1.468, p > .05; Pillai's Trace = .073; partial ή2= .073 indicating that approximately 7.3% of the multivariate variance of the dependent variables is associated with the group factor, to determine which dependent variable would appear to be contributing to the MANOVA. The one-way ANOVA result for each dependent variable can be seen as per each research question below.

Table 8

Results of the Overall MANOVA for Teacher Competency for General Education Teachers in Question 1

Effect		Value	F	Hypothesis df	Error df	Sig	Partial Eta Squared
Intercept	Pillai's Trace	.976	761.949b	4.000	75.000	.000	.976
	Wilk's Lambda	.024	761.949b	4.000	75.000	.000	.976
	Hoteling's Trace	40.637	761.949b	4.000	75.000	.000	.976

	Roy's Largest Root	40.637	761.949b	4.000	75.000	.000	.976
Training	Pillai's Trace	.073	1.468b	4.000	75.000	.220	.073
	Wilk's Lambda	.927	1.468b	4.000	75.000	.220	.073
	Hoteling's Trace	.078	1.468b	4.000	75.000	.220	.073
	Roy's Largest Root	.078	1.468b	4.000	75.000	.220	.073

Note. a. Design: Intercept + Training; b. Exact statistic

Research Question 2

RQ2. Is there a significant difference in the teacher competency of attitude for general education elementary teachers in the USVI based on training, as measured by having taken ASD-specific courses, versus those with no training?

To assess RQ2, a one-way MANOVA was used to assess if the first competency variable of attitude is significantly different for general education teachers based on training as measured by having taken ASD-specific courses versus those with no training. The between-subjects' effects shown in Table 9 that teacher competency of attitude was not significantly different for elementary teachers who received training and teachers with no training (1, 78) = 4. 334, p = 0.041; partial ή2 =.053; An effect size of .053 indicates a minimal strength between attitude and training teacher competency.

Table 9

Results For The Between Subject Test For The Four Dependent Variables

Source	Dependent Variable	Type III Sum of Square	df	Mean Square	F	Sig	Partial Eta Square
Corrected Model	Attitude Total	120.968a	1	120.968	4.334	.041	.053
	Knowledge Total	16.333b	1	16.333	.779	.380	.010
	Skills Total	.068c	1	.068	.002	.965	.000
	Agency Total	.013d	1	.013	.001	.980	.000
Intercept	Attitude Total	66737.167	1	66737.167	2391.112	.000	.968
	Knowledge Total	26414.083	1	26414.083	1259.454	.000	.942
	Skills Total	51995.168	1	51995.168	1502.183	.000	.951
	Agency Total	26096.013	1	26096.013	1208.589	.000	939
Training	Attitude Total	120.967	1	120.967	4.334	.041	.053
	Knowledge Total	16.333	1	16.333	.779	.380	.010
	Skills Total	.067	1	.067	.002	.965	.000
	Agency Total	.013	1	.013	.001	.980	.000
Error	Attitude Total	2177.020	1	27.911			
	Knowledge Total	1635.867	78	20.973			
	Skills Total	2699.820	78	34.613			
	Agency Total	1684.187	78	21.592			
Total	Attitude Total	71977.000	78				
	Knowledge Total	29478.000	80				
	Skills Total	58193.000	80				
	Agency Total	29510.000	80				
Corrected Total	Attitude Total	2297.988	80				
	Knowledge Total	1652.200	79				
	Skills Total	2699.888	79				
	Agency Total	1684.200	79				

Note. a. R Squared=.053 (Adjusted R Squared= .040); b. R Squared = .010 (Adjusted R Squared= .003); c. R Squared=.000 (Adjusted R Squared= .013); d. R Squared=.000 (Adjusted R Squared=.013)

Research Question 3

RQ3. Is there a significant difference in the teacher competency of knowledge for general education elementary teachers in the USVI based on training, as measured by having taken ASD-specific courses, versus those with no training?

To assess research question three, a one-way MANOVA was used to assess if the competency variable of knowledge is significantly different for general education teachers in the USVI based on training measured by having taken ASD-specific courses versus those with no training. Results in Table 9 indicated that teacher competency in knowledge was not significantly different for teachers who received training and teachers with no training $F(1,78) = .779$, $p = .380$; partial $\dot{\eta}2 = .010$. An effect size of .010 indicates a very small to almost no strength between the teacher competency of knowledge and training.

Research Question 4

RQ4. Is there a significant difference in the teacher competency of skills for general education elementary teachers in the USVI, based on training, as measured by having taken ASD-specific courses, versus those with no training?

To assess research question four, a one-way MANOVA was used to assess if the competency variable of skills is significantly different for general education teachers in the USVI based on training measured by having taken ASD-specific courses versus those with no training. The test of between-subjects' effects in Table 9 indicates that teacher competency of skills was significantly different for teachers who received training and

teachers with no training F (1,78) = .002, p= .965; partial ṅ2 = .000. An effect size of .000 indicates no effect between the teacher competency of skills and training.

Research Question 5

RQ5. Is there a significant difference in the teacher competency of the agency for general education elementary teachers in the USVI based on training, as measured by having taken ASD-specific courses, versus those with no training?

To assess research question five, a one-way MANOVA was used to assess if the competency variable of the agency is significantly different for general education teachers in the USVI based on training measured by having taken ASD-specific courses versus those with no training. The results of the test of between-subjects' effects in Table 9 showed that the independent variable training did not have a significant difference in the teacher competency of agency F (1,78) = .001, p = .980; partial ṅ2 = .000 indicates no effect between the teaching competency of knowledge and training.

Summary

Section 4 was a descriptive report of the findings of the quantitative data analysis conducted and the hypothetical assumptions for the five research questions in this original study to identify possible influences of ASD-specific training on the four teaching competencies; Attitude, Knowledge, Skills, and Teacher Agency teaching children with autism in the USVI.

The complete test results indicated for this sample that there was no significant relationship in overall teacher competency for general education elementary teachers in the USVI based on either having received specific training by ASD-specific courses and

those that had not received specific training by ASD- specific courses. Also, the results indicated that none of the dependent variables were significantly related to the independent variable. Training in ASD-specific courses did not change the four teaching competencies, including attitude, knowledge, skills, and agency for general education elementary teachers teaching in inclusive classrooms. In chapter five, I will attempt to discuss these results about the existing literature, address the study's limitations, and identify future directions for more research on the four teaching competencies.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In Chapter 5 of this quantitative study, I present a detailed discussion of the statistical findings highlighted in Chapter 4. This chapter concludes the findings. The purpose of my study was to describe the possible differences in the teaching competencies between general education teachers who have received training in ASD-specific courses and those teachers who have not been trained in ASD-specific courses teaching children diagnosed with autism in the general education classroom in the USVI. Previous researchers have suggested that teachers who have no training teaching children with ASD have a shallow understanding of inclusive education and lack the knowledge, skills, and experiences for teaching children with autism (Bocala et al., 2010; Litton et al., 2017; Masterson et al., 2014). Exhaustive research has also highlighted the need for teachers to have regular training in ASD-specific courses, including the need to attend professional development programs in special education (Austin et al., 2011; Bullas, 2012; Forte & Flores, 2014; Gillion et al., 2017; Pratt, 2008; Witte & Sheridan, 2016).

The discussion, limitations, and recommendations in this chapter have nine significant areas. First is the introduction, the key findings, and the interpretation of the results of the questions and hypotheses that guided this research. Next is a discussion of the study's theoretical background to key findings from the data analysis. Following this are the study's limitations. Then a list of recommendations for future research is offered for future researchers and educators who teach students with autism. Following this are the implications for social change offered regarding adopting the teaching competencies.

Finally, I provide a summary and conclusion for the study. In the current study, 90 public elementary teachers who teach children with autism at the K–6 level in the USVI took part in the survey via Survey Monkey. After screening for accuracy, missing data, outliers, and appropriate response parameters, data analysis was done on 80 cases.

Key Findings

A one-way MANOVA test analysis was performed. The results indicated no significant difference in the teaching competencies between general education elementary teachers who have received training in ASD-specific courses and those who have not received training in ASD-specific courses teaching those with autism in the general education classroom. Overall, among the 80 participating general education elementary teachers in the USVI 50 (61.73%) did not receive any training in ASD-specific courses and 30 (24.00%) received some form of training in ASD-specific courses. The post hoc analysis explored if there were significant relationships to the four teaching competencies.

The competency of attitude was not significant. Only 77% of the participants believed that all students should receive education at all academic levels. Another 65% of respondents reported that the LRC makes students with disabilities more confident and helps them to socialize with others. The competency of knowledge was not significant either; 87% of participants believed that they understand the principles and methods of teaching students with disabilities, whereas another 52% believed that they understand the psychological and behavioral characteristics of students with disabilities in their classes. The competency of skills was not significant as well. The data show that 90% of

participants believed they could work collaboratively with other teachers and professionals to teach students with disabilities. Participants further believed they could adjust their teaching objectives according to the characteristics of students with disabilities in their classroom (83%), whereas 81% believed that the LRC could make students with and without disabilities help and learn from each other. The competency of agency was not significant. Most of the participants in this study, 86%, believed they should seek help and advice from teachers in special schools. Another 90% of respondents believed they have already established connections with professionals to obtain advice and services for students (medical and speech therapy). Additionally, 88% believed they could use resource rooms to help students with disabilities.

Interpretations of the Findings

Schools must continue pursuing and encouraging effective models of inclusion, with particular interest for students with ASD (Witte & Sheridan., 2016). There are benefits for students taking part in inclusive classes (Austin et al., 2011; Gillion et al., 2017; Smith & Kennedy, 2014; Wong et al., 2012). These benefits affect both general education students and students with disabilities (Bocala et al., 2010; Hart & More, 2013; Hughes, 2011; Zwart et al., 2018). Capodieci et al. (2016) showed that students with ASD function better when given individualized instruction in a cooperative learning environment. One possible explanation could be that students were not inherently competing, but they have learned to engage simultaneously in teamwork and task work. Therefore, these competencies are essential for teachers to understand how to implement best practices in teaching children with autism (Baldiris et al., 2016; Hughes, 2011).

Additionally, the central purpose in the general classroom is for teachers to perform effectively (Friend & Cook, 2013). The current findings from the multivariate regression are in partial alignment with previous research findings.

While training in ASD-specific courses did not directly impact the four teaching competencies in the current MANOVA, there were medium-to-weak positive interactions between the competencies of attitude, knowledge, skills, and agency. The results of the current study minimally supported this assertion. My findings seem to contradict the work of previous researchers (Chung et al., 2015; Mu et al., 2015; Yandell, 2017) that there is a positive relationship between training in ASD-specific courses and a higher percentage of students with academic success.

The first research question asked if there is a significant difference in overall teacher competency for general education elementary teachers in the USVI based on either having received training in ASD-specific courses or not having received specific training by ASD-specific courses. The descriptive results showed that only 24.00% of the teacher–participants received training in ASD-specific courses; 61.73% did not receive any training in ASD-specific courses. Therefore, it was not easy to accurately assess the impact of a nonuniform ASD-specific course treatment where more than 70% of the participants did not receive the training.

Growing research has also revealed that taking general education courses alone is a significant problem for teachers in the general classroom (Masterson et al., 2014). The current programs in schools are insufficient for preparing teachers in the public classroom to teach the fast and growing number of children with autism. Benedict et al. (2016)

found that general education teachers in a teacher-preparation program reported only taking an average of 1.5 courses. These courses focused mainly on inclusion and special education compared to about 11 courses for special education teachers. The findings of this research study suggest a lack of support and time constraints for the many academic standards that must be taught across all academic levels, which need to be addressed thoughtfully. Although the findings in this research study were not significant, the discrepancy of the results still suggest that teachers teaching children with autism need proper training in ASD-specific courses to meet the needs of children in the inclusive setting (Smith & Kennedy, 2014). Therefore, this conclusion supports earlier research (Polk, 2006) in which general education elementary teachers teaching in the inclusive classroom with children with autism were at high risk for failing to meet the NCLB (2002) mandate of being highly qualified and trained.

The result from the MANOVA analysis partial eta square was equal to .073%, indicating that approximately 7.3% of the variance accounted for the differences. The teachers' self-reports who used the LRC appeared to have just a few more training classes than those who did not receive training in ASD-specific courses. The findings of this current study help to support Wolff et al. (2017) in that teacher training should take place regularly for both experienced and novice teachers. Tiwari et al. (2015) found that teachers who have access to resources and funding will have more significant opportunities for learning new knowledge and excel in becoming exemplary teachers well prepared to meet the challenges of teaching in an inclusive classroom and help to meet the needs of each student. Moreover, general education teachers would remain

current in autism-specific courses as they learn to present information to students with autism (Austin et al., 2011). They will be better able to serve and meet the needs of their students in the inclusive setting (Hart & More, 2013). The theoretical implication of these findings is that training in ASD-specific courses about the four teaching competencies—attitude, knowledge, skills, and agency—shows differences between teachers from different population groups. These findings support the competency theory used in this study.

The second research question asked if teacher competency of attitude for general education elementary teachers, based on either having received specific training by ASD-specific courses and or not having received specific training in ASD-specific courses, teaching in the general classroom. The effect size for the MANOVA partial eta was equal to .057, a small effect size. The results indicate that although there were no significant differences in the teacher competency attitude subscale, training in ASD-specific courses accounted for a slight variance in teacher attitude. Hughes (2011) linked teachers with a positive attitude with having a more pleasant disposition and calmness toward children with autism. Although the differences were not significant, the competency in teacher attitude was more robust among the four variables. This finding suggests that training in ASD-specific courses is somewhat more vigorous in promoting positive attitudes. Masterson et al. (2014) suggested a connection between teacher competency of attitude and student performance. The authors found that teachers who have a positive attitude and welcome the inclusive model their students are optimistic and have a better chance of succeeding academically.

A positive relationship with both the parents and the child could impact students' overall attitudes and self-worth (Hart & More, 2013). Also, maintaining a positive attitude encourages self-confidence in the teacher's ability (Chung et al., 2015; Segall & Campbell., 2012) and a safe environment where learning is inevitable (Hendricks, 2010). In my research study, teacher competency in attitude did not have a significant relationship with training consistent with the findings of previous researchers (Altman,1990; Austin et al., 2011; Mu et al., 2015; Swinscow & Campbell, 2002; Wolff et al., 2017). The reason for this lack of significance could contribute to the small sample size. The findings of this current study help support the theoretical foundation of the competency theory that the use of LRC aids in the establishment of positive, social, and academic growth in students with and without ASD. Therefore, the LRC serves as the model and expectations for future interactions with other students, thus, reducing social anxiety, which inhibits social and mental interaction (Mu et al., 2015; Saddler, 2014).

The third research question asked if there is a significant difference in the teacher competency of knowledge for general education elementary teachers based on either having received specific training in ASD-specific courses and those who have not received specific training in ASD-specific courses. Busby et al. (2012) and Saddler (2014) indicated that developing new knowledge in ASD-specific courses is a critical dimension of a teacher's professional competency because children with autism experience behavioral problems and are not able to communicate effectively.

For RQ3, the partial eta was equal to .011, indicating a fragile effect size in the analysis. The result indicates that a slight variance in knowledge could be attributed to

years teaching students with ASD. However, there was no significant difference on the knowledge subscale. Training in ASD-specific courses did account for the slight variance. The implication here might be that training in ASD-specific courses was not linked to teachers' level of knowledge. Nevertheless, their level of knowledge can fluctuate depending on the participants' emotional state when completing the LRC survey. The theoretical alignment with the study indicates that knowledge can influence a teacher's attitude and vice versa.

Ahmad and Mahmood (2010) conducted a study to assess the effects of cooperative learning versus traditional instruction on prospective teachers in three experimental conditions. The researchers found when teachers collaborate and share their learning experiences with one another they experience significantly higher knowledge and positive learning experiences and are able to provide their students with better opportunities to interact with their classmates and help them to cooperate and care for each other better.

The fourth research question asked if there are significant differences in the teacher competency of skills for general education elementary teachers based on having taken ASD-specific courses or having no ASD-specific training. The MANOVA results indicated that teacher competency was not significantly different for teachers who received training and teachers who have not received training in ASD-specific courses. Baldiris et al. (2016) and Coates et al. (2017) found that teacher competency skills help students with autism in the general classroom when teachers arrange their class activities in advance so that students will have an idea about what to expect in the following class

period. Such activity is essential because children with autism have difficulties following instructions. Teachers should be proactive and creative in their approach while teaching. The theoretical implication is that the competency of skills and training related to the LRC can impact behavior. These findings support the LRC. While training did not have a significant impact on the competency of skills, these findings imply that teacher's related norms in the inclusive classroom could impact students' knowledge, attitudes, and hands-on skills about their academic and social interactions with others.

The fifth research question asked if there was a significant difference in the teacher competency of the agency for general education elementary teachers based on training, as measured by having taken ASD-specific courses or not having taken ASD-specific courses. The result of the MANOVA was not significant, indicating that there were no differences in the four competency variables by training. However, in the literature review, several authors (Bocala et al., 2000; Smith & Kennedy, 2014; Priestley et al., 2012) suggested that a teacher competency of agency is positively related to student learning outcomes. Witte and Sheridan (2016) found agency to provide a nurturing responsive relationship where students experience a sense of safety and security and lay the foundation for respectful interactions and positive verbal communication. These conclusions support the study by Mu et al. (2015), suggesting that a teacher's strength can derive from seeking out independent support and local organizations for training and experience, using valuable information and meaningful programs that can assist in developing the cognitive, behavioral, and social skills for children with autism in the inclusive setting.

Theoretical Background to Key Findings

Overall, there was no significant differences between training and the four teaching competencies of attitude, knowledge, skills, and agency. The analyses were grounded in the theoretical framework of the teaching competency theory by Medley (1977). The theory explains how teachers should develop competencies in attitude, knowledge, skills, and agency in the workplace and the community to help meet the needs of children with disabilities. Medley expanded his teaching competency theory to include five main components; pre-instruction modeling, presentation, learning environment, student learning, and professionalism. Each component provides directions to teachers about their subject matter and how to align their lessons with proper instructional planning to achieve student success. The theory also highlights how teachers should present materials to students with ASD in their classrooms and form a professional network to work with other professionals and stakeholders in the community (Gallagher & Gallagher, 2013). Mu et al. (2015) linked the four teaching competencies as the main pillars for establishing a successful inclusion classroom.

A non-significant multivariate interaction effect between training in ASD-specific courses and the four teaching competencies was present. The theoretical implication of these findings suggests that the LRC was used to measure the four competencies in research. Besides, and even though there were no significant differences, it gained support from the competency theory findings in this study. Multiple regression was used to assess whether or not training in ASD-specific courses made a difference in the teaching competencies for general education elementary teachers in the inclusive

classroom. Although the regression results were not significant, it revealed that 57% of the variance in attitude and 11% of the variance in knowledge were affected by the group factor. The theoretical interpretation of these findings is that the four teaching competencies could be shaped by education, training, conditioning, and group norms. In the multiple regression, most of the participants (n = 80) in this study did not receive ASD-specific courses training. Thus, it was not easy to accurately assess the impact of those who did not receive ASD-specific courses treatment.

The results also revealed that the four teaching competencies of; attitudes, knowledge, skills, and agency could affect both teachers' and students' behavior and self-worth academically, socially, and mentally. Academically, students with and without ASD could maximize their learning efficiencies to score better grades (Masterson et al., 2014; Mu et al., 2015). Socially, both teachers and students would interact better with others (Tiwari et al., 2015). Students who can connect with their teachers in the general classroom are less likely to engage in risky behaviors such as sexting, sexual activity, self-injury, substance abuse, truancy, and suicide (Renaud & Prior, 2021). Likewise, teachers would be better able to create an environment in their classroom that would continually promote social and emotional health for themselves and their students. For example, teachers could organize a material-rich environment to stimulate and encourage social interactions among students in the inclusive classroom (Chung et al., 2015; Smith & Kennedy, 2014; Renaud & Prior, 2021). The theoretical implication of these findings is that attitude, knowledge, skills, and agency differences exist between different population groups. Thus the theory encourages both teachers and students to build a trusting

relationship where both parties could feel safe, and teachers could focus on conducting intentional teaching.

The tenets of the competency theory suggest that individuals with ASD experience high levels of attachment anxiety, depression, and social avoidance, and they are not likely to engage in social interactions (Medley, 1977). So, the development and use of social skills are necessary for all students to participate in social interactions. It is proposed in Medley's competency theory children with autism do not perceive social cues, and therefore, they are not likely to use appropriate social skills. Therefore, one possible explanation of the theoretical implication of the findings could be that social skills deficits in children with autism could be helped by engaging the students with more cooperative learning strategies, self-monitoring programs, and peer-tutoring classes. These activities were avenues used to improve the social skills of these students (Bocala et al., 2010; Capodieci et al., 2016; Friend & Cook, 2013; Hughes, 2011; Zwart et al., 2018).

Moreover, information found in the literature review revealed that several authors (Carr et al., 2014; Chung et al., 2015; Gallagher & Gallagher, 2013; Saddler, 2014; Wolff et al., 2017) found that although the four teaching competencies, including attitude, knowledge, skills, and agency are a relatively new area of study and exploration in the social sciences. These competencies will make significant changes in the inclusive classroom if when implemented correctly. Mu et al. (2015) believed that the LRC serves as a transitional object and a form of social enhancement for teachers and students with autism. Teachers now have more precise insights and better information to strengthen

their teaching practices and approaches to teaching students with autism in the inclusive setting (Papacy & Bambara, 2014). However, using these competencies (attitudes, knowledge, skill, and agency) daily in the general classroom is expected between teachers and students to form solid and positive relationships (Wehmeyer & Patton, 2017). Thus, as the social skills in children with autism improve, so will social interaction (Witte & Sheridan, 2016). However, it concluded that the emotional responses between students and their teachers would mediate social interactions between the child with autism and their parents (Pratt, 2008).

Limitation of the Study

This study has several limitations. The first limitation is the use of online surveys. I had not anticipated that of the 328 elementary education teachers in first through sixth grade pulled in one school district, that only 90 participants would respond to the survey. Online surveys' convenience and low-cost factors can be attractive and helpful to researchers (Pallant, 2020). In a study where the response rates compared between web-based and other methods of disseminating surveys, Manfreda et al. (2008) indicated that web-based surveys had a 10-11% lower response rate than other methods used at an average of 7-15%, which lead me to think that for any future school-based research project that I may conduct. I prefer to provide the participants with a paper-and-pencil survey during teacher conferences and workshops and collect them to increase participant response rates (Yandell, 2017). After screening the data, to ensure that participants met criterion 10, cases were removed. Daikleler et al. (2020) found 15% more incomplete

online surveys than surveys conducted with paper-and-pencil. After several statistics and screening for missing data and outliers, data analysis was performed on only 80 cases.

The second limitation showed that the limited number of teachers with ASD-specific training in this study might not be a calculable distinction across the four teaching competencies subscale. For instance, if teachers have little training in ASD-specific courses. They might not be aware of the ever-advancing and evolving strategies available to help students with ASD achieve academic success (Mu et al., 2015). Mukaka (2012) found that general education elementary teachers need training in autism competencies to meet the needs of these students. Researchers have documented that children suspected of having ASD vary significantly, exhibiting skills below their age level in multiple areas of development (Anagnostou et al., 2014; Gowen & Hamilton, 2013).

The third limitation was where participants failed to complete all the required sections of the survey used in this study. Although participants agreed to participate in the study, many questionnaires were left unfinished and screened for accuracy. Tuten (2010) found that several factors may have contributed to participants not completing their surveys, including death, participants are no longer willing to participate in the survey, and being negatively impacted by the treatment conditions such as anger, apathy, and frustration. Also, they may be competing with any number of distractions that might cause them to lose focus during data collection (Gosling & Mason., 2015). In my research study, general elementary education teachers did not respond to all twenty-eight multiple-choice questions and one categorical question in the survey. Hence, if

distractions are high in a household, to keep distraction at a minimum, it was suggested that future researchers could introduce gamification in their question-and-answer surveys as an interactive activity to create interest and engage participants, thus dramatically improving the completion rates. Presently, gamification is a powerful tool for eliminating boredom in both the Business-to-Business (B2B) and the Business-to-Customer (B2C) marketing surveys (Alanko & Laaksonen., 2020).

The fourth limitation was that the shortness of time allowed for data collection was also a limitation factor, affecting the study sample size not to be large enough to conclude the study. Byrne (2017) reported that small samples tend to undermine internal and external validity. Faber and Fonseca's (2014) work shared similar results to that of Byrne's (2017) study, indicating that small sample size is an ethical risk that could increase the chance of assuming an actual false outcome. In my study, the data was collected within the last three weeks before the ending of the term. It could have been larger if I had extended the time to collect more data due to the time required to collect the data., Faber and Fonseca (2014) indicate that using extensive samples that exceed the value estimated by the sample size calculators can present problems in the data. Therefore, future researchers must collect the appropriate sample size from rendering the research data more efficient and reliable and include a few more individuals to compensate for those participants who leave the study.

The fifth limitation is that several variables were not considered when the data was collected and analyzed, limiting the study when concluding. The data collection focused solely on elementary teachers in the USVI, specifically from district one.

Therefore, the study results are not representative of the entire population and cannot be generalized to the broader population. The data did not capture the fact whether these teachers were males or females. There was no data recorded for the educational background (e.g., a teaching degree), number of years teaching students with ASD, the amount of ASD training during and after teacher certification, and further ASD professional development after certification.

The sixth limitation, given that the basis of this study's data is quantitative and the research is heavily dependent on the responses made by the participants. There may exist data information bias. It is important to note that answering questionnaires requires the participants to remember past events and recall unusually unpleasant circumstances with time, leading to the inaccuracy of what is being reported (Chuan, 2006).

Lastly, the method used to collect the data was another limiting factor. My research study depended solely upon the participants having access to the internet. In such an informative age, the internet has dominated social networking, communication, gathering information, and has become more interactive and user-friendly. I was expecting that online recruitment and the administration of surveys would benefit my research study. By making it more accessible, less time-consuming, recruiting a more extensive and more diverse sample population and improving the efficiency, quick, and accurate data collected (Gosling & Mason., 2015).

Nevertheless, the internet and its positives seem possible to conclude that accessing the internet limited my study. A meta-analysis study by Manfreda et al. (2008) compares the response rates between web-based surveys and other disseminating surveys.

The authors found that web-based surveys had 11-15% rating lower than other survey methods, exemplifying this limitation of my current study.

Recommendations

I recommend that this research study should be done over with a larger sample size in order to compare any significant differences between this study with a larger participant pool and any effect on the four teaching competencies, including attitude, knowledge, skills, and agency and training in ASD-specific courses in the general education classroom. Also, I would recommend ASD-specific training in the four competencies is schedule on a continuum basis for all prospective teachers. Bocala et al. (2010) recommended all teachers to take ASD- specific courses to develop essential skills for teaching in an inclusive setting. These skills in ASD-specific courses are crucial for preparing general education teachers to adapt, accommodate, differentiate, modify, and use a wide variety of instructional methods while teaching in the inclusive classroom.

With ASD-specific training, regular elementary education teachers can be at the forefront to help initiate ASD evaluation for their students and be part of a team in developing any subsequent IEP programs. These activities can help to boost early behavioral and cognitive testing and diagnosis that could help children with autism gain better self-care that would improve their social and communication skills. Teachers could use cooperative learning strategies and peer tutoring classes in their classroom daily rather than provide individualized instructions. Florian and Beaton (2018) found that cooperative learning and peer tutoring are two of the most effective strategies used in the

inclusive classroom. To encourage social skills interaction and to improve reading for students with and without autism.

It would be valuable to recommend and encourage administrators to support teachers by providing them with the necessary resources, training, and a reliable system for supporting children in inclusive classrooms. Poor teacher quality is one of the contributing factors to high repetition and dropout rates among students in the inclusive setting. Therefore, administrators should ensure that all preservice providers work with children with autism. Could demonstrate competency in providing and delivering instructions to students with ASD (Hughes, 2011). Carr et al. (2014) found that self-management programs help to provide structure and accountability for students with and without ASD in the general classroom setting. Self-management also encourages teachers to monitor and support students consistently. Besides, they encourage and reinforce positive responses in students as they work towards their goals.

The teaching competencies in ASD-specific courses are a relatively new area of study and exploration in helping educators to find new ways to help children to be successful in inclusive settings. This research study can be helpful to illuminate new knowledge in helping other educators, teachers, and stakeholders in teaching and caring for children and their families with ASD. It would help educators and special agencies who care for children with ASD implement the four teaching competencies in the inclusive classroom. Thus teachers would have a more robust platform as to how they would move forward daily to meet the needs of their students

A recommendation for this study to be used by educators to make informed decisions about the type of programs they can develop to improve the teaching practices and approaches that is needed in the inclusive classroom. Furthermore, these findings should be use as a roadmap to point school districts, families, and the community to understand the need for appropriate ASD inclusion programs in schools for students with ASD. Since they are also required to enter the workforce with academic and social skill experience that is essential for gainful employment.

A recommendation for parental concerns from individuals living in rural areas should be considered a priority as they strife to be part of the decision-making process in schools and the wider community. These important steps moving forward will encourage health- providers and other education officials to eliminate bias by being aware of cultural differences among groups in the larger community. Importantly, it will also ensure that each family is part of the education process and provide continual support and education in helping parents to identify children with early signs of the disorder.

Special education teachers were excluded from this research study. Thus, it would be essential now for future researchers to include these teachers who have had training in ASD programs following their certification. Mainly, to compare their teaching competencies with general elementary teachers who have had no training in ASD-specific courses. Future researchers could also consider comparing higher education teachers with students of ASD in the workforce and more restrictive education settings. I believe that any findings of a positive nature that allude to including students with ASD to having a higher percentage of college and employment outcomes could be helpful to

school officials invalidating the need for professional development in ASD-specific courses for regular education teachers in both districts in the US Virgin Islands.

This research is essential because other researchers can build on the findings in this study. Baldiris et al. (2016) recommended that it is beneficial for other researchers to build on the findings of other research because the field is presently waiting for a treatment approach to go another way to help any child with ASD. Moreover, further investigation into the artistic culture that has developed over the last thirty years is needed, and Cassady (2014) said that some researchers are seeking a cure, while others believe that autism should be accepted as a difference in other people and not view or treat it as a disorder.

Implications

The social change implication shared in this study has findings useful for those looking to provide extensive information and far-reaching support for families, teachers, stakeholders, and other educational officials who work with children with autism. My main intentions are to contribute a greater scholarly understanding of the general education elementary school teacher, family, and student experience in the inclusive classroom to inform ASD-specific programs that are more appropriately suited for the growing needs of families with children with ASD.

Training in ASD-specific courses would be conducive to serving all members within the family unit, teachers, and school districts to participate and benefit from this valuable information. Thus, everyone would promote tremendous success in the inclusive classroom. This pertinent information discovered in the research study can illuminate

new knowledge on how the teacher can build and develop new relationships with parents of children with ASD, decrease teacher burnout and stress, reduce problematic behaviors in the classroom, increase class participation, and promote academic success for both the teacher and the student.

Providing and including parents with ASD-specific programs and training could encourage them and other family members to practice the skills learned at home and in the community with their child or children. Thus, increasing students' participation, generalization, and proficiency in the inclusive setting. Another social change implication is that other professionals, speech therapists, clinicians, and educators work with children with autism and their immediate families. Can use these findings to tailor different treatments and individualized plans that will meet the needs of each household to benefit all family members who take an active part in helping the child with autism.

The inclusion model has introduced significant changes for general education teachers. To manage some of these challenging situations, teachers must have training in ASD- specific courses. Training will help teachers to identify warning signs and features of the disorder (Saddler, 2014). Enrolling in mandating ASD-specific courses will provide teachers with a detailed understanding of the different aspects of autism, biological, theoretical, etiological, diagnostic, assessment, and treatment for autism (Sharma & Salend, 2016).

Another social change implication of this research study is that it provides insight into how autism affects 1 in 88 children and families on a growing scale. Stahmer (2014) there is a high prevalence rate of children with autism enrolled in public schools. Some

students are diagnosed, and others are not (Hughes, 2011). Therefore, these students must receive early academic, social, behavioral, and emotional interventions to ensure active remediation of their cognitive and behavioral skills (Paynter & Keen, 2015).

General education teachers have first-hand knowledge of their student's academic, social, behavioral, and emotional abilities. Teachers who are confident in their abilities can be at the forefront to alert administrative teams and staff personnel in schools and parents of the possible need for a child who may need particular intervention, evaluation, and recommendation for a psychological educational and behavioral assessment. Beginning the educational process for children with autism by implementing IEP in schools can help both the teacher and student maximize their chances of receiving higher scores on placement exams (Masterson et al., 2014). Hart and More (2013) found that schools that engaged all teachers in autism training programs and workshops experience higher academic outcomes than schools with a low percentage of teachers participating in autism relative training programs.

Another social change implication of this research study is that it clarifies how essential these four teaching competencies, including attitude, knowledge, skills, and agency are for understanding and utilizing best practices in teaching children with autism (Baldiris et al., 2016). Researchers explained that these four teaching competencies are considered the main pillars for professional teaching as these established a successful classroom of inclusion and implementation of inclusive educational policies to protect the right of children with disabilities in inclusive settings (Mu et al.,2015; Paynter & Keen, 2015; Priestley et al., 2012;).

Furthermore, another social change implication is the power the NCLB act (2002) provided schools to ensure that all students have equal opportunity and access to academic development and success in the least restrictive classrooms. Including children with ASD in general education, the classroom provides more excellent opportunities for both the teacher and student to participate in collaborative learning, peer-tutoring, and self-monitoring strategies with other students without a disability. Cook et al. (2017) investigated the impact of a peer-tutoring program on reading, comprehension, and interaction skills within classrooms that included children diagnosed with one of the spectrum disorders. They found that reading and social interaction skills have improved for both students with and without autism.

Overall, developing an active networking system with other professionals in the community. Hendricks (2010) found that some teachers received ongoing support, social opportunities, and access to different support services. They have the honor to meet with guest speakers and exchange their concerns about their community.

Summary

The focus of my study was mainly to assess whether or not training in ASD-specific courses has any effect on general elementary education teachers teaching children with autism using the four teaching competencies: attitude, knowledge, skills, and agency. Some of the findings explored in my study were similar to data found within studies completed by Mu et al. (2015). Training in ASD- specific courses sheds light on how teachers can be best supported. The difference between my study and previous

studies was how the four competencies, attitude, knowledge, skills, and agency was defined.

Moving forward, I believe that I need to be in a different position to affect social change in schools so that the voices of teachers are not for granted. Moreover, conducting this research provided the perfect opportunity to grapple with gaps in the reviewed literature while at the same time illuminating light and heightening the awareness relating to general elementary education experiences in the inclusive classroom. I learned about the child's unmet needs with autism and their families, primary care providers, and teachers.

The themes and sub-themes that emerged from this research study concluded that general elementary education teachers know how they can be best supported teaching a child with autism in a general classroom setting. Also, sharing the experiences revealed that they were proactive even when there was enough information about the diagnosis, treatment, resources, and funding in aiding a child with autism in the inclusive setting.

Even though these teachers experience difficulties and face many challenges, they are willing to keep asking for support while advocating for their students until their concerns in the classroom gain attention. Research conducted by Ashbaker and Morgan (2012) supported the outcome of my research study that training in ASD-specific courses is inevitable for all preservice providers. Providing regular and appropriate training would show support for all teachers of inclusive classes. Support is key to the successful model of the inclusion program as teachers acquire new attitudes, knowledge, skills, and agency to adjust their teaching and make the program successful (Zwart et al., 2018).

Conclusion

The purpose of this non-experimental cross-sectional study was to compare the teaching competencies between general education elementary teachers that have received training in ASD-specific courses versus those teachers that did not receive training in teaching those with autism in the general education classroom. The multivariate logistic regression indicated no significant differences in competencies between teachers who have not received additional training. However, the results showed a modest to small effect between the LRC scale (attitude, knowledge, skills, and agency) and training. Due to the smallness of the effect size, the results should view with caution. This research study contributes to the existing literature on training in ASD-specific courses and the four teaching competencies. It may inform academic administrators, caregivers, organizations, and agencies (both private and government-owned) on how to use the teaching competencies to identify students who may need academic assistance or more challenging tasks. Continuing research in this area of study should lead to more fruitful results, which could help implement better inclusion practices in schools in the USVI. New findings would help teachers who value the inclusion model and work collaboratively with their colleagues to become exemplary teachers in meeting the needs of all students, not just students with ASD needs. A list of recommendations for improving teacher competency among teachers teaching a child with autism was shared to improve the quality of life for both the teacher and student with autism. Teaching these four competencies, attitudes, knowledge, skills, and agency in schools is right to benefit all students, not just students with special needs

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Appendix A: Letter of Intent

Dear General Education Elementary Teachers,

My name is Merle Durand, and I am a doctoral student at Walden University Human and Social Services Program. I am kindly requesting your participation in a doctoral research study that I am conducting titled: General Education Elementary Teachers Competencies and Training in Teaching Children With Autism in the U.S. Virgin Islands. The intention is to assess for differences in teachers' competencies and training in teaching children with autism in the general classroom in the USVI.

The study involves completing one "Yes" or "No" question and 28 multiple choice item survey. It should take 15-20 minutes to complete the survey.

Participation is completely voluntary, and you may withdraw from the study at any time. The study is completely anonymous; therefore, it does not require you to provide your name or any other identifying information.

Teaching children with a complex neurological disorder can be very challenging with each student requiring a different learning style to learning with varied levels of structured behavioral supports in place with the school setting. The increase in autism spectrum disorder (ASD) academic classification will have a significant impact on multiple levels of a school district's functioning. Classroom teachers across our territory need to be equipped to meet the needs of each student with ASD.

If you would like to participate in the study, please, click the link below.

Thank you for your time.

https://www.surveymonkey.com/r/ZZB8VW9

Sincerely,

Merle Durand, Doctoral Student, Walden University

Appendix B: Letter Requesting Permission to Use Survey

To: Dr. Guanglun Michael Mu

From: Merle Durand

September 27, 2020

Re: Seeking Permission to use The Learning in Regular Classroom Teachers' Professional Competence Scale

Dear Dr. Guanglun Michael Mu,
I am a Ph.D. student in Human Services at Walden University. I am pursuing my dissertation in General Education Elementary Teachers Competencies and Training in Teaching Children With Autism in the U.S. Virgin Islands. While searching for an instrument that would explore teacher competency. I was ecstatic when I read your work along with other scholarly researchers' retrieved from PsycTests doi:10.1080/1034912x.2015.1077934 entitled 'An inquiry into the professional competence of inclusive education teachers in Beijing: Attitudes, Knowledge, Skills, and Agency. International Journal of Disability, Development, and Education, 62 (6), 571-589.

This journal article included a copy of the Learning in regular classroom Teachers' professional competence scale. I am asking your permission to use this scale in my research, and if I can modify the survey to show the five-point Likert scale. I appreciate your assistance in this matter and in any direction you might offer.

Please feel free to contact me at merle.durand@waldenu.edu.
Sincerely, Merle Durand

Appendix C: Letter of Cooperation

Dear Merle Durand,

Thanks for your interest in my work. I’m happy for you to use our Professional Competence Scale of inclusive education teachers. I’d love to be updated on your thesis results.

Regards,

Michael Mu (PhD)

Appendix D : Competency Scale

The Learning in Regular Classroom Teacher Competency Scale

Directions: The statements on this survey are asking your opinions about your experience in the general education classroom teaching children with disabilities. Kindly select the number that best indicate your opinion on the Likert scale from 1 to 5. Your answers will remain confidential.

Attitude	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. As students without disabilities, students with disabilities are entitled to receive education.	1	2	3	4	5
2.LRC makes students with disabilities more confident	1	2	3	4	5
3. I am confident to provide good teaching to students with disabilities in my class.	1	2	3	4	5
4.LRC helps students with disabilities to socialize with others.	1	2	3	4	5
5. LRC helps to reduce social discrimination against people with disabilities.	1	2	3	4	5
6. Through LRC, students with disabilities can have the opportunity for learning improvement.	1	2	3	4	5
7. LRC helps teachers to pay closer attention to differences amongst individual students.	1	2	3	4	5
8.LRC urges school reform and improves school quality.	1	2	3	4	5
¶	1	2	3	4	5
Knowledge					
1. I know the principles and methods of teaching students with disabilities.	1	2	3	4	5
2. I know the local regulations and institutions of LRC	1	2	3	4	5
3. I understand the psychological and behavioral characteristics of the students with disabilities in my class.	1	2	3	4	5
4.I know how assess my teaching of students with disabilities.	1	2	3	4	5
5.I know how to assess my teaching of students with disabilities.	1	2	3	4	5
6.I understand the theories about inclusive education.	1	2	3	4	5
¶	1	2	3	4	5
Skills					
1,I am able to make students with and without disabilities help and learn from each other through LRC.	1	2	3	4	5
2. I am able to work collaboratively with other teachers and professional to teach students with disabilities.	1	2	3	4	5
3. I am able to design flexible coursework and individual assessment for students with disabilities.	1	2	3	4	5
4.I am able to adjust teaching objectives according to the characteristics of students with disabilities.	1	2	3	4	5
5. I am able to arrange group discussion and collaborative learning to help students with Disabilities.	1	2	3	4	5
6. I am able to use Individualized Education Program to address the learning needs of students with disabilities.	1	2	3	4	5
7. I am able to work effectively with parents to help students with disabilities	1	2	3	4	5
I am able to effectively conduct behavioral management for students with disabilities.	1	2	3	4	5
¶	1	2	3	4	5
Agency					
1. I actively negotiate with leaders at various levels to support LRC.	1	2	3	4	5
2.I actively seek help and advice from teachers in special schools.	1	2	3	4	5
3. I establish connection with professionals to get advice and services (e.g. medical and speech therapy).	1	2	3	4	5
4. I am able to use resource rooms to help students with disabilities	1	2	3	4	5
5. I negotiate with communities to support my teaching.	1	2	3	4	5
6. I am able to acquire useful equipment to support my teaching.	1	2	3	4	5