2016

Secondary General Education Teachers' Perceptions of Challenges for Inclusion Students with Autism

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COLLEGE OF EDUCATION

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Karen Clark

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2016

Abstract

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with Autism

by

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MA, Central Michigan University, 2004

BS, Michigan State University, 1997

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

Walden University

August 2016

Abstract

Many secondary students with autism (SWA) included in the general education (GE) classroom demonstrate academic and behavioral challenges. Most GE teachers who have inclusive SWA in their classes receive little or no training on evidence-based practices to address these challenges. The purpose of this qualitative bounded case study was to explore secondary GE teachers' perceptions of and experiences with the academic and behavioral challenges of inclusive SWA. Theoretical frameworks of the weak central coherence theory for autism and executive dysfunction grounded the study. Data from 6 purposefully chosen secondary GE inclusion teachers, who educated SWA and students with autism spectrum disorder from one middle school setting, were collected using individual semistructured telephone interviews and independent participant journals. Criteria to be a participant included teachers who had taught more than 5 years, earned a master's degree, and taught inclusive SWA. The data were thematically analyzed using a segmenting-and-labeling open coding process. Participants revealed that secondary inclusive SWA had low cognitive processing, difficulty understanding content and maintaining an adequate pace while working on tasks, and demand of teacher attention. Furthermore, SWA demonstrated behavioral challenges controlling emotional outbursts, being organized, and socialization with peers. It is recommended that GE teachers have paraprofessionals with SWA preparation, opportunities for multilevel collaboration, and increased autism-specific training to assist in meeting academic and emotional needs of SWA. These actions could contribute to positive social change through assisting GE teachers in planning and improved instruction and postsecondary outcomes for secondary inclusive SWA.

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Section 1: Introduction to the Study

Full inclusion programs are a common means for schools to accommodate

students who have special needs while engaged in mainstream settings (Wah, 2010).

Inclusion is one way schools meet the Individuals with Disabilities Education Act of

2004 mandate to provide every student with a free and appropriate public education

(FAPE) in his or her least restrictive environment (LRE; Hayes, Casey, Williamson,

Black, & Winsor, 2013). The problem is that inclusive students with autism often

demonstrate lower academic achievement than typically developing peers (Nahlous-

Ismail, 2010). Inclusive students with autism can struggle academically and behaviorally

in inclusive settings due to various challenges unique to the disorder (Able, Sreckovic,

Schultz, Garwood, & Sherman, 2014). Academic and behavioral challenges for students

with autism are often related to impairments in social skills and deficits in key cognitive

processing abilities (Sanahuja Gavalda & Qinyi, 2012). Secondary students with autism

need general education teachers who are better prepared to implement evidence-based

practices that can address their challenges to improve their academic performance in

general education settings (Odom, Duda, Kucharcyzk, Cox, & Stabel, 2014). Simpson,

Mundershenk, and Heflin (2011) supported that there is a strong link between teachers

who implement effective evidence-based teaching strategies and academic outcomes for

inclusive students with autism.

Yet, school leaders and educators are overwhelmed and underprepared to address

the challenges of inclusive students with autism because there is such a wide range of

symptoms associated with the disorder (Crosland & Dunlap, 2012). The alarming rate at

which autism diagnosis has increased in the last 30 years has also been a challenge to educators (Crosland & Dunlap, 2012). Students with autism have been the largest growing sector of the special education population in inclusive classrooms in the last 20 years (Fleury et al., 2014). One reason schools may be overwhelmed by the increase in students with autism is that only 15% of special education teachers are leaving college with some form of autism-based training (Morrier, Hess, & Heflin, 2011). According to Hay and Winn (2012), teachers at all grade levels need autism training to best educate their inclusive students with the disorder, yet secondary general education teachers need more training to address the growing complexity of secondary curriculum and the socialization aspects that can impact learning in secondary settings. Therefore, there is a need for secondary general education teachers of inclusive students with autism to engage in effective training opportunities that will equip them with the knowledge needed to implement appropriate evidence-based strategies (Simpson et al., 2011).

Teachers with adequate professional knowledge in evidence-based practices for inclusive students with autism at the secondary level could have a significant impact on students' achievements and behaviors inside and outside the inclusion setting (Odom et al., 2014). There are various cognitive factors specifically related to autism, such as weak central coherence theory of autism and executive dysfunction, which can provide insight for teachers working to implement effective evidence-based practices that will address poor academic scores and challenging behaviors. Yet, the problem according to Hay and Winn (2011) is that secondary general education teachers are often underprepared and

lack necessary resources to address the challenges of inclusive students with autism. A more detailed discussion of this problem will be presented in Section 2.

The purpose of this study was to explore secondary general education teachers' perceptions of and experiences with the specific academic and behavioral challenges of inclusive students with autism at one middle school. The outcome of this study may help to fill a gap in the literature and provide school leaders with information to close a gap in practice based on teachers' reported needs and challenges in addition to their perceptions of student challenges at the research site. The specific gap that I examined involved the challenges of secondary inclusive students with autism and the current literature on training in evidence-based practices that teachers need to address those challenges. I then provided recommendations based on the findings to help close this gap.

Problem Statement

The local problem that drove this study was that inclusion students with autism were performing poorly academically and behaviorally compared to typically developing peers. Behavioral challenges of students with autism can contribute to poor academic performance. Most teachers who have inclusive students with autism in their classes receive little or no training on evidence-based practices specifically for addressing challenges exhibited by those students (Simpson et al., 2011). One K-12 school district in west Michigan served as an example of a local system facing this challenge and was the research setting for this study. Standardized test scores from students at the local research site are representative of academic performance (see Table 1).

Table 1

Standardized Test Scores of Students With Disabilities Compared to Overall School Scores

Subject	Grade	Testing Group[a]	% Proficient[b]	% Advanced[c]
Math	6th	All students at site	32.6	5.9
		Students with disabilities	20	0
	7th	All students at site	19.6	1.4
		Students with disabilities	0	0
	8th	All students at site	30	4
		Students with disabilities	6.7	0
Reading	6th	All students at site	65.2	14.5
		Students with disabilities	15.4	0
	7th	All students at site	55.2	12.7
		Students with disabilities	<10	<10
	8th	All students at site	74	27.3
		Students with disabilities	13.3	13.3
Science[d]	8th	All students at site	12.6	3.3
		Students with disabilities	6.3	0

Note. The scores are from the 2013-14 Michigan Educational Assessment Program (MEAP) standardized test given at the local research site. Adapted from the 2014 annual education report for the local middle school.
[a]There are 16 students with autism at the local research site in the students with disabilities category. There are 77 overall students with disabilities at the local research site. The percentages in the 'all students at site' testing group is the overall score calculated from test results of all students at the local research site. [b]Proficient scores mean the students were able to understand and apply information at grade-level expectations (Michigan Department of Education, 2013). [c]Advanced means the student's scores exceeded grade-level expectations for that expected of students in the state of Michigan and those demonstrated substantial application and understanding of concepts expected for students in the state (Michigan Department of Education, 2013). [d]Students in sixth and seventh grades do not take the science MEAP (principal, personal communication, April 1, 2015).

General education teachers at the local site received training each year in differentiated instruction, but the principal at the local site (personal communication, October 30, 2014) stated that there was no autism-specific evidence-based practices content in that training.

The reality is that evidence-based practices for students with autism are very different than evidence-based practices for typically developing students, and they require additional training (West, Jones, Chambers, & Whitehurst, 2012). According to Fleury et al. (2014), specific autism-focused evidence-based practices training is critical for all schools with an inclusive program for students with autism, especially at the secondary level. Further, inclusive students with autism "stand to gain several benefits if general education teachers are in receipt of specialized training" (Porter-Johnson, 2011, p. 54). A general education teacher at the local research site (personal communication, October 2014) supported that there was a very specific need for training in strategies to meet the learning needs of inclusive students with autism.

Sanahuja Gavalda and Qinyi (2012) agreed that it is critical for teachers to receive adequate training to integrate students with autism successfully into general education classrooms. Educators cannot expect the increase of students with autism to be successful in an inclusion setting without increasing teachers' training in evidence-based strategies that are designed specifically for this population. Much of a general education teacher's ability to use evidence-based strategies for students with autism effectively is dependent on if there has been sufficient training (Porter-Johnson, 2011).

There has also been a lack of research on general education teachers' perceptions related to challenges experienced by inclusive students with autism (Kosmerl, 2011). The purpose of this study was to examine the perspectives of local general education teachers regarding academic and behavioral challenges experienced by students with autism in inclusive settings and reported needs and challenges of their mainstream teachers. The results of this study further contributed to the body of knowledge needed to address the problem and close the gap in practice between challenges of students with autism and training in evidence-based practices that the local teachers receive for addressing those challenges.

Nature of the Study

A qualitative case study was used in this research to explore secondary general education teachers' perceptions of and experiences with the academic and behavioral challenges inclusive students with autism display in one west Michigan middle school. Case studies allow the researcher "to capture the full complexity and uniqueness" (Lodico, Spaulding, & Voegtle, 2010, p. 270) of the case being studied. I chose a qualitative case study for this research because the data were collected to explore in-depth secondary general education teachers' experiences with and perceptions of academic and behavioral challenges inclusive students with autism experience in general education settings. The population consisted of 13 middle school general education teachers who work with inclusive students with autism at the local research site. The sample included six teachers chosen using purposeful sampling. Individual semistructured interviews and independent journaling were used to collect data. Thematic

coding in a segment and labeling process was implemented in data analysis. A more detailed explanation of the research approach appears in Section 3.

Research Questions

Three research questions that were used in this study included the following:

RQ1: What are the teachers' perceived academic challenges of inclusive students with autism at the local research site?

RQ2: What are the teachers' perceived behavioral challenges of inclusive students with autism at the local site?

RQ3: What challenges and needs do general education secondary teachers experience while teaching inclusive students with autism?

These research questions were addressed using a study sample of six purposefully selected secondary general education teachers of inclusive students with autism. Seven teachers agreed to participate in the study, but one participant withdrew before data collection started. Purposeful sampling can allow for participants who can best contribute understanding to the problem of the study (Crewsell, 2012). Further, six participants were adequate as the population at the research site had a high rate of homogeneity, which allows saturation to be reached with 10 or fewer participants (Mason, 2010).

Individual semistructured telephone interviews were conducted and independent participant journaling was used to provide insight into the study's problem. Participant responses to the interview prompts provided current perceptions of challenges experienced by inclusive students with autism. Common themes regarding academic and behavioral challenges were identified during data analysis through coding these data.

Purpose of Study

The purpose of this case study was to explore secondary general education teachers' perceptions of and experiences with behavior and academic challenges of inclusive students with autism in one west Michigan middle school. A review of the literature revealed a lack of studies exploring teachers' perceptions of behavior and academic challenges of inclusive students with autism. Hence, I used a qualitative method to explore teachers' perceptions through semistructured interviews and independent participant journaling to explore the local problem.

The purpose of this study was to provide data that the teachers and administrators at the local site can use to make informed decisions about training that could promote school improvement and help teachers address challenges students with autism have in inclusive classrooms. The purpose of this study could further have an impact beyond the local school setting. Secondary educational experiences of inclusive students with autism at the local site can influence how they contribute to their communities and their level of success in the workforce during their adult years (Bennett & Dukes, 2013).

Conceptual Framework for the Study

The conceptual framework for this study was formed by combining the weak central coherence theory of autism and the theory of executive dysfunction. Vanegas and Davidson (2015) described the weak central coherence theory of autism as a cognitive process in which individuals with autism have a natural bias toward assessing information on a local level versus a global conceptual level. Students with weak central coherence readily focus on details yet have a hard time putting detail together to make

meaningful central connections between fragments of information (Aljunied & Fredrickson, 2011a). Other qualities of individuals with weak central coherence include poor understanding of pragmatics of language and a weak ability to generalize learning across contexts (Aljunied &Fredrickson, 2011b).

The cognitive deficits related to the weak central coherence theory of autism are a result of physiological differences in brain functions compared to typically developing brains. Students with autism can "have a decreased coherence between brain areas" compared to typically developing peers (Chan & Naumer, 2014, p. 2670). Chan and Naumer (2014) further noted that this neurological abnormality can provide understanding as to why those with weak central coherence struggle to make connections between pieces of information and a larger single coherent percept.

The theory of executive dysfunction was also used in conjunction with the weak central coherence theory of autism to ground the study. Gobbo and Shmulsky (2014) asserted that students with autism are impaired in executive functions. Executive functions are "generalized cognitive abilities that allow a person to delay reward and engage in goal-directed behavior" (Gobbo & Shmulsky, 2014, p. 14). Hence, those with impairments in executive function, such as students with autism, demonstrate a weak ability to plan steps for completion of a task, balance priorities, and have a limited working memory capacity (Aljunied & Fredrickson, 2011b). Mental flexibility and attention shifting, such as the ability to transition between topics or strategies during instruction, are also challenges of executive dysfunction that students with autism face (Gobbo & Shmulsky, 2014). *Executive functions* is an all-encompassing term to describe

problem-solving goal-based behaviors, such as impulse control, flexibility in thought and action, and restraint of instinctive yet irrelevant responses (White, 2013).

Inclusive students with autism at the local research site were examples of students with varied cognitive abilities who had academic and behavioral challenges while integrated into inclusive settings (principal, personal communication, October 30, 2014). Scores reported for academic performance of all students at the local research site showed that inclusive students with autism scored significantly lower than typically developing peers on standardized assessments. A general education teacher at the local research site (personal communication, October 30, 2014) asserted that specialized autism-specific training that will help teachers understand the deficits of the disorder and evidence-based strategies for addressing the challenges faced by inclusive students with autism manage were needed. Hence, the local problem that drove this study was that inclusion students with autism were performing poorly compared to typically developing peers. The theoretical framework will be reviewed more extensively in the literature review presented in Section 2.

Definitions

Accommodations: Accommodations involve changes in the method in which tasks are presented that facilitate students with learning disabilities so they can engage in the same expected course work as peers ("Accommodations," n.d.).

Autism: A developmental cognitive-related disability that impacts socialization and communication, adversely affects academic performance, is often evident prior to age 3. Children with autism often prefer repetition and stereotyped movements, resist

changes in the environment or in daily routines, and often demonstrate atypical responses to various kinds of sensory input ("Wright's Law Autism," n.d.).

Differentiated instruction: Teachers making use of a variety of instructional strategies to address the varying learning needs of students (Ernest, Heckaman, Thompson, Hull, & Carter, 2011).

Evidence-based practices: Strategies or techniques that have earned empirical validation of being worthy of the label of evidence-based through repeated demonstrations of efficacy (Morrier et al., 2011).

High-functioning autism: Individuals diagnosed with high-functioning autism display mild to moderate impairments in cognition. Impairments may include difficulty in shifting attention yet the strong ability to sustain attention, impaired memory and information recall, challenge in cognitive flexibility, planning, and verbal fluency. High functioning autism individuals often consistently exhibit simple inhibition (Rinaldi, Jacquet, & Lefebvre, 2015).

Inclusion: Practice of engaging learners with special educational needs in the typical educational setting in neighborhood schools ("Wright's Law glossary," n.d.).

Least restrictive environment (LRE): The educational setting most fitting for a student's learning needs. This setting can change over time for a student. The LRE can be difficult to determine. It is not so much just a placement for where a student will learn best but instead is a "flexible continuum of support services for students identified with disabilities" (Bird & Bassin, 2014).

Low-functioning autism: Individuals with low-functioning autism typically have an IQ score lower than 80 and exhibit significant impairments in cognitive processing related to socialization, behavior, language (Pineda, Friedrich, & LaMarca, 2014).

Scaffolding: An instructional strategy where teachers provide students with various kinds of instructional supports through use of peer interaction, one-on-one time, and materials (Coyne, Kame'enui, & Carnine, 2011).

Working memory: "The ability to retain and manipulate information relevant to the current situation in memory so that it can be used immediately" (White, 2013, p. 115).

Assumptions, Limitations, Delimitations and Scope

Assumptions

Two assumptions were made in this study:

- It was assumed that participants' answers to interview prompts were honest regarding their perceptions of academic and behavioral challenges of inclusive students with autism.

- It was assumed that the content of the journal responses was honest, accurate, and completed adequately by participants during the designated data collection time during the study.

Limitations

A limitation of this qualitative case study was from the sample. The study only focused on general education classroom educators who taught inclusive students with autism at one secondary middle school. Perceptions from para educators, special

education teachers, administrators, and other school staff were not explored. Therefore, a limitation was the narrow scope in perspectives from educators contributing to data.

Further, the local setting in the study was a limitation because the setting involved one west Michigan middle school. This was a limitation because the results of this study of teachers' perceptions are small-scale and may not be applicable to other middle schools. In addition, the results may not compare to results at an elementary setting or a high school setting.

Another potential weakness of this research was the participants' varied experiences in teaching inclusive students with autism. This variation could have impacted the nature of participant responses during interviews. Further, like all studies, there was also possible limitation from uncontrollable external variables, such as overall staff morale at the research site and the varied level of abilities of participants in remembering details about previous training and experiences in teaching students with autism.

The research design was another limitation. Case studies have a low generalizability rate compared to other research designs (Creswell, 2012). Low generalizability in case studies results from the design often using a smaller number of participants than other designs in research (Rumrill, Cook, & Wiley, 2011). To increase generalizability, I incorporated adequate relevant current literature along with analytic generalizations of perceptions from teachers of inclusive students with autism.

Also, the use of interviews for data collection can be a limitation. Creswell (2012) noted that some participants may feel uncomfortable when engaging directly with the

researcher in a study and, therefore, provide skewed answers. Participants' responses are further "filtered by the views of the interviewers" (Creswell, 2012, p. 218). Participants' responses may not be clear or articulated clearly during interviews, which can lead to inaccurate data (Creswell, 2012). Independent participant journal data were secured in addition to the interviews to triangulate the data in this study. The triangulation of multiple data sets was used to address limitations and strengthen the study's findings (Layder, 2013).

Researcher bias was another limitation in this study. For example, I work as an administrator at an autism center. This professional experience can contribute to biases related to how students with autism should be educated. Bogdan and Biklen (2007) highlighted that it is impossible to eliminate all bias in a study, yet there are steps researchers can take to lower personal influence on findings. One way researchers can manage personal influence over study findings is to keep a journal for documenting personal subjectivity, experiences, and bias related to the study (Bogdan & Biklen, 2007).

Delimitations

In this research study, I examined general education teacher perceptions related to behavioral and academic challenges experienced by inclusion students with autism at the middle school level only. Therefore, this qualitative case study was delimited to participants currently teaching inclusive students with autism at the middle school level. Qualitative data were gathered from six participants. Quantitative data were not used because I wanted to gain an in-depth view of teachers' perceptions.

Scope

The scope of the problem was general education teachers who currently teach inclusive students with autism in Grades 6 through 8 from one west Michigan middle school. Fifty percent of the special education students with autism in the district attended the middle school where data collection took place (principal, personal communication, October 30, 2014). Teachers' perceptions expressed during 30-minute individual semistructured interviews and individual participant journaling were used to gather data for this research.

Specific aspects of the research problem that were addressed in the study included secondary general education teachers' perceptions of academic and behavior challenges of inclusive students with autism and teachers' reported challenges and needs. This aspect was chosen as there has been a gap in literature on the topic. Further, there is a gap in practice of using autism-specific evidence-based practices with inclusive students with autism at the local site.

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Significance

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Significance to Local Site

Student achievement for inclusive students with autism at the local site was not comparable to the abled peers. According to the middle school's annual education report, test scores for students with autism lagged significantly behind their peers in mathematics, reading, and science. This study is also significant for the local research site because the focus was to improve teaching practices through the identification of

secondary general education teachers' perceptions of behavioral and academic challenges of inclusive students with autism.

Understanding secondary general education classroom teachers' perceptions could lead to improvement in practices and ultimately increase academic achievement for inclusive students with autism. Teachers' increased understanding can influence recommendations for evidence-based practices needed to address the identified challenges. Probst and Leppert (2008) asserted that training in autism-specific evidence-based practices can lead to improved instruction that could help inclusive students with autism have greater achievement.

Significance to Education

Educating inclusive students with autism is a daunting challenge for general education teachers due to the increasing prevalence of autism in schools creating a need for teachers to address a wide variety of learning needs related to the disorder (Denning & Moody, 2013). The significance of this study to education overall was to identify secondary general education teacher perceptions of behavioral and academic challenges of inclusive students with autism and the training in evidence-based practices needed to equip teachers with strategies to help students overcome those challenges. General educators of inclusive students with autism often have little or no training related to evidence-based ways to address the learning needs of diverse students, such as inclusive students with autism (Simpson et al., 2011). The results from this study could contribute to the overarching need for additional research related to understanding ways teacher

training in evidence-based practices for students with autism can impact academic outcomes (Fleury et al., 2014).

Implications for Social Change

The intent of this research was to explore secondary mainstream middle school teachers' perceptions of and experiences with the academic and behavioral challenges of students with autism in inclusive classrooms. The local problem that drove this study was that inclusion students with autism were performing poorly compared to typically developing peers. The findings of this study can provide useful information for secondary mainstream teachers seeking to meet the learning needs of their inclusive students. Increased knowledge about the behavioral and academic needs of inclusive students with autism can result in social change through teachers' abilities to increase opportunities for higher learning through autism-specific, research-based lessons and activities. This increase in academic achievement for inclusive students with autism at the local site could ultimately lead to students having a more positive impact on society as adults (Bennett & Dukes, 2013). As with all students, postschool income potential for inclusive students with autism at the local site is impacted by academic performance during secondary years (Fleury et al., 2014). Therefore, the implications for positive social change for teachers and students at the local research site ultimately include improved postsecondary opportunities for inclusive students with autism as a result of the identification of academic and behavioral challenges and the evidence-based practices that could lead to improved instruction.

Summary

The problem in this study involved inclusion students with autism performing significantly lower in academic achievement than typically developing peers. A middle school in west Michigan served as the local research site for this study. General education teachers at the local site received some training each year, yet there was no focus in the training on evidence-based practices specifically for educating inclusive students with autism. Therefore, exploring general education teachers' perceptions of and experiences with behavioral and academic challenges of inclusive students with autism at the local site can help leaders and classroom teachers improve inclusive practices that will lead to improved academic performance.

The research questions used to explore the problem of this study involved what secondary general education teachers at the local site perceived as academic and behavioral challenges experienced by inclusive students with autism and teachers' reported challenges and needs. A qualitative case study was implemented to explore secondary teachers' perceptions of student challenges and teachers' needs and challenges to address the problem of poor academic achievement for inclusive students with autism at the local research site. Individual telephone interviews and independent participant journaling were used to collect data to explore the problem in-depth.

The conceptual framework that drove this study consisted of the weak central coherence theory of autism and executive dysfunction. Weak central coherence is a cognitive tendency for a student with autism to have hyperfocus on detail at the expense of forming the whole percept. Also, those with weak central coherence struggle to

generalize learning to other contexts and have poor understanding of linguistics (Vanegas & Davidson, 2015). Theory of executive dysfunction in individuals with autism involves impairments in cognitive abilities to plan and execute independent goal-oriented behaviors such as mental shifting of concepts and productivity (Kunda & Goel, 2011). These theories together can be used to understand challenges students with autism have in inclusive settings (Gobbo & Shmulsky, 2014).

Key terms and their definitions related to the problem of the study were included. The scope of the study included perceptions of general education teachers of inclusive students with autism at a west Michigan middle school. Limitations were sample size, research design, researcher bias, and the use of interviews for data collection. All of these limitations and how I addressed or managed each were disclosed in the study.

The following sections of this study include a review of relevant current literature related to the study problem and research questions. Justification for the research design used for this study is presented. Ethical practices that were considered are noted. Study findings are addressed in Section 4. Conclusions and recommendations for practice are presented in Section 5 of this study.

Section 2: Literature Review

Introduction

General education teachers often struggle to understand how best to address the academic and behavioral challenges of inclusive students with autism (Crosland & Dunlap, 2012). The heterogeneity of symptoms related to the disorder make it extremely difficult for educators of inclusive students with autism to accommodate the full range of learning needs in a class (Fleury et al., 2014). An adequate level of autism-related training is key for general educators of inclusive students with autism to address their academic and behavioral challenges and best meet their learning needs (Busby, Ingram, Bowron, Oliver, & Lyons, 2012).

Teacher skills and professional knowledge can have a significant impact on academic progress for secondary inclusive students with autism (Howell, Patton, & Deiotte, 2008). Yet, general education classroom teachers of inclusive students with autism often do not have the necessary knowledge and skills to identify and accommodate the needs of their students who have the disorder (Crosland & Dunlap, 2012). Autism-focused evidence-based practices, models, and theories can help general educators best meet the learning needs of those with autism and promote greater academic progress (Whitmer, 2013). Therefore, further research was needed to close the gap in practice and in literature for secondary inclusive students with autism. In this study, I explored secondary teachers' perceptions of behavioral and academic challenges of inclusive students with autism. Overall, the explored views of general education

teachers can inform school leaders for decisions regarding improving the achievement of inclusive students with autism.

This review will present studies that provide the background necessary for understanding key autism symptoms, a historical summary of significant points related to autism in education, and the need for teacher training. Further, the benefits to adequate teacher training are outlined. The weak central coherence theory of autism and the theory of executive dysfunction are presented as the conceptual framework that contributed understanding for this study. Discussion of the future implications of this study was considered. The last part of this section includes the research method selected to evaluate this problem and the gap in literature that the literature review revealed. A synthesis of the qualitative studies in the literature review is included. A synthesis of the quantitative or mixed method studies reviewed also appears in this section.

Literature Search Strategy

Various databases were used to conduct this review of literature including Sage, Google Scholar, EBSCO (Elton B. Stephens Company), and Education Resource Information Center (ERIC). Additional websites such as The Council for Disability Rights and National Center for Learning Disabilities (NCLD) websites were used to access definitions and possible accommodation-related matters regarding secondary student who have autism.

Key search terms used to retrieve literature for the study included *autism, inclusion, differentiated instruction, teacher training, special education programs, general education, evidence-based accommodations, secondary autism programs, history*

of autism, teacher perceptions, weak central coherence, executive dysfunction, and *special education policy.* Overall, there was sufficient supporting literature within the scope of the problem of the study. Boundaries were set to all search engines designating the sources to be published between the years of 2010 and 2015. Further sources were identified through the literature as key studies conducted prior to 2010.

Autism Symptoms

Autism is a complex psychiatric disorder in which symptoms most commonly manifest before the age of 3 years (Shyu, Tsai, & Tsai, 2010). It is a disorder related to abnormal brain functionality (Autism and Developmental Disabilities Monitoring Network, 2014). Autism presents itself with a range of symptoms rather than being limited to a single behavior (Fleury et al., 2014). Symptoms often involve a deficit in the ability to socialize in a typical age-appropriate manner (Able et al., 2014). Also, people who are diagnosed with autism may exhibit poor language and communication skills with delays in reaching social behavioral developmental milestones (Ryan, Hughes, Katsiyannis, McDaniel, & Sprinkle, 2014). Poor eye contact is another common symptom of autism (Ryan et al., 2014). People with autism often do not know how to adapt to the changing demands between various settings and situations (Lee, 2011). Treatment or schooling for the disorder usually is a lifelong process (Shyu et al., 2010). Symptoms for autism are most effectively managed through early interventions (Shyu et al., 2010). Frith (2012) posited that the cognitive abnormalities of people with autism do not prevent them from being able to learn.

History of Autism in Education

Kanner (1943) introduced autism to society more than 60 years ago. Educators have struggled since Kanner's work to educate those with autism (Florian, 2011). Parents recognized students with learning disabilities being included in general education settings as a civil rights issue in the 1950s based on their limited access to typical classrooms for students with learning disabilities ("Inclusion," n.d.). Parents from the 1950s and 1960s organized to push for legislative changes in educational requirements for learners with disabilities because many parents believed access to a typical education was a human right and students with special needs were regularly being denied necessary services through segregation from their typically developing peers. These parents wanted a law enacted that would mandate schools provide a free appropriate education in the least restrictive setting ("Inclusion," n.d.). Today, students with autism are often placed in inclusive general education settings among typically developing peers for the majority of the school day (Ostmeyer & Scarpa, 2012).

Although determining today's special education placement status for students remains complex, inclusion programs are a trend in the school systems ("Inclusion," n.d.). Placement status for students with autism is particularly complex due to the heterogeneous nature of the disorder's symptoms resulting in unique educational needs when taught in general education settings (Ostmeyer & Scarpa, 2012). Working with inclusive students with autism in a general education setting cannot be narrowed to one simple series of educational strategies to meet every learning need (Symes & Humphrey, 2011). The wide range of autism-specific evidence-based practices that can be

implemented in the inclusion setting and the need for ongoing teacher training in those practices further contributes to the complex nature of the current trend toward placement of inclusion for students with autism (Morrier et al., 2011). Frith (2012) asserted that, for autism, "we are still in the dark ages as far as educational interventions are concerned" (p. 2088). Frith added that understanding cognitive theory related to the autism can help scholars address the complexity of the disorder in education.

Challenges for Educators of Inclusive Students With Autism

   Lack of professional knowledge of autism. Educators have often reported feeling underprepared and, hence, challenged when working to meet the wide range of learning needs presented by students with autism (Able et al., 2014). Despite feeling underprepared, most general educators are still tasked with having to make provisions and adjustments to instruction for their inclusive students with autism (Crosland & Dunlap, 2012). General education teachers often have inadequate professional knowledge of effective practices for inclusion classrooms with students who are diagnosed with autism (Wah, 2010). Munthas and Shamina (2011) asserted that inclusive education practices need to start in college-level teacher preparation programs for prospective educators. Graduates of general education programs will continue to enter the school systems with inadequate knowledge of inclusive practices unless college preparation programs include inclusive training (Aydin & Kuzu, 2013). Adequate teacher preparedness is one key component to overcoming challenges to promote success in inclusive autism programs (Thorton, 2011).

Leader support. Certain actions and attitudes of administrative leaders in a school could further be a challenge for teachers of inclusive students with autism. District leaders can have a significant influence on the level of post-college training that general education teachers have in autism interventions (Crosland & Dunlap, 2012). The challenges teachers experience in educating their inclusive students with autism can be diminished through leader support of ongoing training related to evidence-based practices for improved learning outcomes (Morrier et al., 2011). Yet, general education teachers often struggle with gaining administrative support for provision of the autism-specific training needed to build their foundational knowledge that could have a positive effect on inclusive students with autism learning outcomes (Kucharczyk et al., 2015).

Collaboration. Another challenge for teachers is related to professional collaboration. General education teachers of inclusive students with autism often want time to collaborate with special education teachers as a tool to gain the professional knowledge for building and maintaining a positive inclusion climate in their classrooms (Able et al., 2014). Yet, establishing enough time in teachers' schedules for professional collaboration can be a struggle general education teachers of inclusive students with autism often experience (Fuchs, 2010). Teachers, many times, already have "simply too much to do" (Kucharczyk et al., 2015, p. 344), which makes it difficult to incorporate time for needed collaboration.

Despite the challenge of enough time, collaboration is critical in teachers' schedules because it can help educators of inclusive students with autism and various other stakeholders work together to overcome the unique challenges of inclusive

programs (Whitmer, 2013). Collaboration can involve information sharing between parents, school leadership, and classroom educators. This professional partnership is essential to overcoming challenges in inclusive cultures (Symes & Humphrey, 2011). Sanahuja Gavalda and Qinyi (2012) agreed that multilevel collaboration is a significant factor in the success for inclusive students with autism. Teachers engaged in collaborative planning time can problem-solve, plan, and assess practices for inclusive students with autism (Sanahuja Gavalda & Qiyi, 2012).

Common Autism Symptoms That Impact Academic Success for Students

Social skill deficits. Difficulty with social skills is a distinct and prominent characteristic of autism (Lee, 2011). Secondary inclusive students with autism are often challenged by a lack of age-appropriate social skills that can result in challenges with making friends (Able et al., 2014). The deficit in social skills can make it challenging for inclusive students with autism to initiate and participate in conversations with peers (Carter et al., 2014). Carter et al. (2014) also highlighted that students with autism are poor at the identification of nonverbal social cues from others, such as body language and expressions, which may lead to exclusion from positive interactions with peers. They further have a hard time following arbitrary rules in a social setting, which is a skill typically developing peers naturally form (White, 2013). These deficits can impact inclusive students with autism during in-class group work and during other kinds of social situations in the school (Gobbo & Shmulsky, 2014).

A lack of age-appropriate social skills in students with autism can also result in challenges in behaviors. Students with autism often have a poor grasp of appropriate

social behavior and the needed skills to demonstrate such behavior (Cohen, Bleiweiss, Mouzakitis, & Fahim, 2010). Difficulties in navigating social situations that are typical in secondary school culture can result from the narrow interests and a lack of flexibility in thinking of students with autism (Carter et al., 2014). There is many times a disproportionate level of self-focus during social interactions for students with autism that can hinder their abilities to be a part of typical peer groups (Just, Cherkassky, Buchweitz, Keller, & Mitchell, 2014).

Other behaviors that are sometimes demonstrated by students with autism in a classroom setting, such as self-injury, tantrums, and property destruction, can set students with autism apart from their peers, which limits opportunities for meaningful social interactions (Koegel, Matos-Freden, Lang, & Koegel, 2012). Students with autism are many times unaware of others' feelings related to their abnormal social behaviors (White, 2013). Inclusive students with autism may act out with self-injurious or destructive actions due to the inability to infer appropriate behaviors during different situations yet remain unconcerned about peers' reactions (White, 2013).

Cognitive processing style. Inclusive students with autism further experience challenges in the classroom due to the way their brains process information compared to typically developing peers (Gobbo & Shmulsky, 2014). Students with autism tend to hyperfocus on details without making meaningful overall connections from the information (Aljunied & Fredrickson, 2011a). They demonstrate weakness in the brain's natural tendency to integrate pieces of information into a meaningful connection that contributes understanding (Aljunied & Fredrickson, 2011a). This detail-focused cognitive

preference of students with autism leads to a strong bottom-up way of processing information (Frith, 2012). They process information "piece by piece rather than in their global context" (Pina, Flavia, & Patrizia, 2013, p. 3). This cognitive abnormality results in students with autism focusing on isolated and fragmented information to the point where they lose the global context (Pina et al., 2013). The overall deficit in the ability to make global meanings out of pieces of information can lead to diminished gains in learning (Aljunied & Fredrickson, 2011a).

A short working memory is another cognitive processing deficit typical of students with autism that can lead to challenges with learning (White, 2013). Challenges from short working memory may manifest in the inability of an inclusive student with autism to easily transition between basic tasks during a class or follow directions during group activities (White, 2013). Short working memory can also inhibit inclusive students with autism from conforming to appropriate social scripts in various situations and behaving in a socially appropriate way when around peers (White, 2013).

Poor understanding of linguistics. Students with autism have a poor understanding of language (Aljunied & Fredrickson, 2011a). They often interpret wording literally in communications and have trouble with idioms and metaphors (Lee, 2011). This deficit in language skills can make it challenging for inclusive students with autism to follow verbal directions and complete tasks in reasonable timeframes (Aljunied & Fredrickson, 2011a). Students with autism experience decreased activity in the regions of the brain related to verbal processing and have a significant increase in activation of brain regions where visual-perceptual processing occurs (Kunda & Goel, 2011). This

visual-verbal cognitive abnormality in students with autism results in an over-reliance on visual cues for understanding (Kunda & Goel, 2011). Difficulty in understanding teachers' verbal directions manifests as a struggle for inclusive students with autism in keeping pace with typically developing peers (Olu-Lafe, Liederman, & Tager-Flusberg, 2014).

Social behaviors common to autism and the resulting challenges. Behaviors associated with a significant deficit in executive function are prominent in students with autism (Hovik et al., 2014). These behaviors can impact students with autism academically and socially in inclusive settings. For example, the lack of ability to engage in goal-directed behaviors involved in executive functions, like planning, controlling impulsive behaviors, self-monitoring of progress and generativity further can manifest in behavioral struggles in the inclusive setting for students with autism (White, 2013). The ability to weigh consequences to actions and balance priorities are also executive function deficits that can result in challenging behaviors in the classroom for inclusive students with autism (Aljunied & Fredrickson, 2011a).

Students with autism further often lack the mental flexibility of their typically developing peers (Vanegas & Davidson, 2015). This can result in the challenge to keeping pace with peers during topic changes or a shift in activities and maintaining attention during teacher instruction (Gobbo & Shmulsky, 2014). It can also create anxiety during transitions and changes to routine which can result in emotional outbursts (Cohen et al., 2010).

The Impact of Secondary Education on Postsecondary Outcomes for Students With Autism

Secondary educational experiences for students with autism can prove critical to their postsecondary success (Knapp, Romero, & Beecham, 2009). The quality of secondary inclusion programs can be significant predictors of post-secondary schooling, employment and independence outcomes (Test, Smith, & Carter, 2014). Middle schools and high schools often fail to adequately prepare students with autism for life after graduation (Wehman et al., 2014). Kurcharcyzk et al. (2015) posited that the current prevailing interventions implemented at the secondary level in schools are inadequate to address the diverse needs of students with autism. Results from the National Longitudinal Transition Study-2 (NLTS2) showed a higher unemployment rate among recent high school graduates with autism compared to their peers with other disabilities (Test et al., 2014). Teachers at the secondary level who implement evidence-based practices that "are responsive to the particular strengths, needs and challenges of students " (Test et al., 2014, p. 87) could have a positive impact on success for students with autism post-secondary experiences. The challenging behaviors that students with autism have in secondary schooling will often persist throughout adulthood without implementation of appropriate evidence-based interventions (Koegel et al., 2012). Evidence-based instruction specific to career development, leisure activities, and self-determination during secondary schooling can equip students with autism with a wide variety of skills for success with post-secondary goals (Test et al., 2014).

Theoretical Framework

Weak Central Coherence

The weak central coherence theory of autism involves deficits in the cognitive preferences of individuals with autism. This cognitive style of processing information is a dominant feature of autism (Olu-Lafe et al., 2014).There is a natural bias for individuals with autism to hyperfocus on details of information and miss the broader concept to which that information contributes (Gobbo & Shmulsky, 2014). Their cognitive style does not automatically integrate bits of information and prioritize making sense out of perceived connections like typically developing individuals' cognitive tendencies (Aljunied & Fredrickson, 2011b). Individuals with autism have a diminished drive to automatically integrate pieces of information into a coherent whole (Olu-Lafe et al., 2014). Forming global constructs can take longer for individuals with autism compared to those without the disorder (Olu-Lafe et al., 2014). They experience stimuli I the world around them in a fragmented way (Pina et al., 2014). Hence, thinking on a larger conceptual level is challenging for students with autism (Gobbo & Shmulsky, 2014).

Academic and behavioral challenges for many students with autism can also attributed to the weak central coherence theory (Chan & Naumer, 2014). Students with autism may have strong reading accuracy yet poor comprehension of concepts in the story (Aljunied & Fredrickson, 2011a). They can further provide rich detail of the story but not the overall storyline (Aljunied & Fredrickson, 2011a). Generalizing and transferring learned concepts from one context to another is difficult for students with autism (Aljunied & Fredrickson, 2011b). Narrow interests and a preference for repetition

can be a challenge for individuals with autism (Frith, 2012). Social impairments often demonstrated by students with autism can be explained by key concepts of the weak central coherence theory (Pina et al., 2013). This cognitive processing theory can further understanding to why students with autism may have difficulty with transitions during school.

These cognitive abnormalities stem from brain function. There is a decreased level of coherence between areas of the brain where meaningful global connections are made out of various stimuli (Chan & Naumer, 2014). Individuals with autism who demonstrated a tendency to be detail-focused had larger head sizes than individuals who were not detail-focused in their cognitive processing style (Frith, 2012). Neuroimaging tests revealed brain areas relevant to processing information in a global context were weaker in individuals with autism versus their neurotypical peers (Frith, 2012). Frith (2012) speculated that "a critical factor may conceivably be a lack of synchronization of neural activity that might be necessary to bind the parts into wholes" (p. 2087). There may be a mismatch in connections between the frontal lobe of the brain and the posterior parts responsible for processing information in individuals with weak central coherence (Frith, 2012).

Executive Dysfunction

Individuals with autism are impaired in executive functions (Gobbo & Shmulsky, 2014). Based on the theory of executive dysfunction, Kunda and Goel (2011) postulated that individuals with autism have impairments in various higher-level cognitive abilities needed to engage in independent goal-focused activities, like planning, productivity, and

set-shifting. These impairments limit individuals with autism in mental flexibility, which entails the ability to notice when key ideas or strategies have changed (Gobbo & Shmulsky, 2014). Individuals with executive dysfunction also have difficulty in attention shifting, which involves the ability to readily move focus from one idea to another (Gobbo & Shmulsky, 2014). They further struggle to understand arbitrary rules (Venegas & Davidson, 2014). Individuals with executive dysfunction need explicit directions to understand a task or purpose (White, 2013).

Academic progress can be affected by the deficits of executive dysfunction. Students can become confused by verbal-based directions causing them to lag behind peers in progress (Gobbo & Shmulsky, 2014). Transitions between topics, activities, readings, and settings can further be difficult in school for those who have executive dysfunction (Gobbo & Shmulsky, 2014). Cognitive difficulties in students with autism can also be attributed to the mental inflexibility associated with executive dysfunction (Hovik et al., 2014). Those with executive dysfunction also have short working memories (White, 2013). This can make it challenging to immediately apply information to a given situation during a class.

Certain behaviors related to executive dysfunction may also have negative impact on academic outcomes for students with autism. Communication abilities are impaired with executive dysfunction can (Pina et al., 2013). For example, students may find it difficult to start, stop and maintain conversations with teachers or peers (Pina et al., 2013). Understanding others' feelings, interpreting contextual clues, and understanding utterances is another challenging behavior related to executive dysfunction (Pina et al.,

2014). Hovik et al. (2014) asserted that executive dysfunctions are associated with poor inhibition in students with autism. Students with autism "may not have knowledge of, or the desire to conform to social scripts of how to behave appropriately in particular social situations" (White, 2013, p.115). The impaired ability to self-monitor is another executive dysfunction-related behavior in students with autism that can affect academic outcomes (White, 2013). Weighing consequences of behavior before taking action and thinking of alternative ways to accomplish something are weakened in those with executive dysfunction (Aljunied & Fredrickson, 2011b).

Research supported that general education teachers who understand the cognitive deficits related to the weak central coherence theory and the executive dysfunction may be better able to help inclusive students with autism. According to Cohen et al. (2010), "teachers who understand the special challenges facing such students will be better equipped to prevent interference with learning process," (p. 6). Teachers who further understand the cognitive deficits related to executive functions can make informed decisions about academic and behavioral supports that best integrate inclusive students with autism into the general education setting (Aljunied & Fredrickson, 2011b). Moreover, teachers who understand the concepts in weak central coherence theory can make effective accommodations during instruction and during dynamic assessments to address the effects of the cognitive deficits (Aljunied & Frederickson, 2011a).

Need for Autism-Specific Teacher Training

Autism diagnosis in children has increased in the last 30 years (Crosland & Dunlap, 2012). The prevalence rate of students with autism in public schools has

continued to increase at a dramatic rate, which has significant implications for educators (Ryan et al., 2014). Implications include a need for increased understanding of effective evidence-based teaching practices, the need for increased autism-specific training, consideration of the confidence levels of teachers of inclusive students with autism, and the impact training can have on overall classroom atmosphere for all students. These implications are presented and discussed in this section.

One overarching implication according to De Bruin, Deppler, Moore, and Diamond (2013) was that there is an increased need to better understand effective evidence-based teaching practices related specifically to autism as a result of the drastically increasing prevalence of students with autism in the schools. Most students with autism in today's schools spend the majority of their days in general education classrooms (Hayes et al., 2013). General education teachers' skills related to effective implementation of evidence-based practices for students with autism is dependent on adequate training (Porter-Johnson, 2011).

Another implication for educators related to the increase in students with autism includes a need for increased autism-specific professional development. Many general education teachers who work with students with autism have little or no professional development related to the disorder (Simpson et al., 2011). Kucharczyk et al. (2015) postulated that there is a need for increased professional training and awareness for teachers of inclusive students with autism. Research highlighted further that, many times, general education classroom teachers also lack necessary preparation useful for effective work with inclusive learners with autism (Busby et al., 2012). The current prevailing

interventions implemented at the secondary level in schools are inadequate to address the diverse needs of students with autism (Kucharczyk et al., 2015). Specific autism-focused professional training can equip general education teachers to best address academic and behavioral challenges of inclusive students with autism (Hayes et al., 2013). Educators with opportunities for training are more apt to implement adequate and effective differentiated teaching strategies to meet various learning needs of their inclusive students (Roy et al, 2013).

Confidence related to the education of inclusive students with autism is another implication to educators. General educators often lack the confidence to implement needed instructional strategies for inclusive students with autism as a result of a lack of professional understanding (Able et al., 2014). Hence, more autism-specific evidence-based strategies training are needed for general education teachers to provide them with adequate understanding of the disorder and how to help students succeed (Hayes et al., 2013).

Implications of the increase of inclusive students with autism for general educators also include a need to consider the impact training can have on overall classroom atmosphere for all students. According to Loiacono and Valenti (2010), underprepared teachers of inclusive students with autism can manifest in negative experiences for all students in a general education classroom. Negative experiences resulting from underprepared general educators can include the exclusion of inclusive students with autism from typical classroom peer relationships (Carter et al, 2014). It could also include inclusive students with autism having a weaker sense of belonging and

community in the classroom (Sanahuja Gavalda & Qinyi, 2012). Inclusive students with autism could experience negative academic and behavioral outcomes from undertrained general education teachers (Simpson et al., 2011).

Understanding how to address inclusive students' behavioral needs is another implication for general educators of inclusive students with autism. Adequately trained general education teachers may be able to address and limit negative behaviors from inclusive students with autism that interfere with instruction time for all students (Carter et al., 2014). Sanahuja Gavalda and Qinyi (2012) further supported that general education teachers with specialized autism training can have a positive impact on the amount of social and behavioral problems exhibited by students with autism in an inclusive classroom. Inclusive students with autism also experienced a stronger sense of acceptance in inclusive classes with teachers who had autism training (Sanahuja Gavalda & Qinyi, 2012). Overall, the level of academic success for students with autism may be a result of the link between highly effective teachers and student outcomes (Simpson et al., 2011).

Benefits of Teacher Training on Student Achievement of Inclusive Students With Autism

Improved student achievement is a benefit of professional training that can be experienced when teachers are allowed adequate time in their schedules to engage in various forms of training (Busby et al., 2012). Frederickson, Jones, and Lang (2010) highlighted that there is a significant difference in the academic achievement of students' with autism in schools where all teachers have autism-specific training compared to schools where few teachers having specific autism-training. Recent research further

supports that all students in the mainstream setting, especially those students with autism, benefit from training programs to enhance teachers' understanding (Loiacono & Valenti, 2010). Hence, teachers trained to implement autism-specific teaching strategies can promote successful learning outcomes for inclusive students with autism (Thorton, 2011).

Teachers with more positive outlooks on inclusive autism education can be another benefit from autism-specific teacher training. Ashburner, Ziviani, and Rodger (2010) found that "teachers with more autism-specific training and experience were more likely to be positive about inclusion of students with autism in mainstream schools" (p. 20) and confident in their skills to successfully educate students. Moreover, general education teachers with autism-specific training may favor inclusion programs, therefore, demonstrating more positive professional behaviors in the classroom that ultimately benefit student learning outcomes (Fuchs, 2010). Teachers willing to welcome inclusive students with autism into the classroom community and the school culture can also be a result of adequate autism-specific training for general education teachers (Able et al., 2014). Positive welcoming interactions between students with autism in inclusive learning environments and their teachers are more likely to be successful in their long-term and short-term social, vocational, and academic goals (Carter et al., 2014).

There are various contexts of society that may also benefit from the results of professional training on teachers' effectiveness. Inclusive students with autism ultimately enter adulthood with the potential to have an impact on their local communities and the productivity of their country (Bennett & Dukes, 2013). Adults with autism can contribute skilled labor and navigate positive community opportunities as a result of adequate

effective secondary school experiences (Wehman et al., 2014). Adequate vocational training, academic, and behavioral supports during secondary schooling can increase students' with autism opportunities for successful careers that contribute positively to the local and global economies (Fleury et al., 2014). Hence, the benefits to professional training for secondary general education teachers can span from a smaller-scale individual learner's life experiences to national economic implications of contributions to the workforce (Whitmer, 2013).

Literature Related to the Methodology

Literature Related to Qualitative Research Studies

There has been a growing focus on autism-related research over the last 25 years (Strain, Schwartz, & Barton, 2011). The main topics included in the qualitative studies reviewed for this research included teachers' professional understanding of autism, autism-specific training for educators, effective evidence-based practices for students with autism. The general findings from the literature reviewed included in this study's process revealed the need for better autism-focused teacher training in evidence-based practices to address the academic and behavioral challenges of inclusive students with autism. This study will fill the gap in literature related specifically to understanding the academic and behavioral challenges of secondary level inclusive students with autism.

Review of Qualitative Studies Included in the Literature Review

Ernest et al. (2011) provided an example of a case study about the efficacy of new teachers using the evidence-based practice of differentiated instruction in addressing the challenges experienced for inclusive students labeled with special education needs, like

autism. The researchers in this case study analyzed how the use of Tomlinson's (2013) model of differentiated instruction could impact the learning outcomes for special education students. The researchers used various participant self-assessments related to current practice and goal planning. The participant in the study also provided reflections of student performance based on self-reported use of evidence-based practices like those in the realm of differentiated instruction strategies.

Able et al. (2014) provided another example of a case study with the purpose of analysis of teacher perceptions on the challenges of inclusive students with autism and the evidence-based practices found most useful to help students be successful in the inclusive setting. The scholars who conducted this study explored teacher perceptions through data that resulted from six focus groups with teachers from elementary, middle and high school levels. Several key perceptions related to educating inclusive students with autism were identified through the focus group data, including the need for teachers to better understand characteristics of autism and a need for specific evidence-based practice training to address challenges of those students.

Literature Related to Other Research Methodologies

A review of studies on teacher perceptions related to behavioral and academic challenges of inclusive students with autism revealed that quantitative methodologies and mixed method research had also been implemented by researchers who used various data gathering methods. The general findings of the review of quantitative and mixed-method studies identified that there is a relationship between general education teachers' knowledge of autism and the need for adequate training in evidence-based strategies that

can build the professional skills needed to address the academic and behavioral needs for those students. My study will fill the gap in knowledge in teacher perceptions of academic and behavioral challenges of inclusive students with autism.

Synthesis of quantitative studies in literature review. Various topics related to inclusive students with autism were found in the quantitative studies included in the literature review. Professional knowledge and autism training were two of the topics in the quantitative studies included. For example, Hayes et al. (2013) highlighted that there's a significant correlation between teachers' actual knowledge of effective evidence-based strategies for teaching inclusive students with autism and the teachers' perceived levels of training in autism. General education teachers are often troubled by their lack of professional knowledge related to autism (Hay, 2012). Loiacono and Valenti (2010) supported that general education teachers are often ill prepared to teach inclusive students with autism and learning outcomes are contingent on the level of teacher training in key autism-specific interventions. Opportunities for intensive in-service and preservice learning paired with observation of classroom teaching, implementation of mentors, and assistive technology training can benefit general education teachers of inclusive students with autism (West et al., 2012).

A lack of adequate time for general education teachers to work with inclusive students further can result in poor academic performances (Hay, 2012). Paraprofessionals are able to work more efficient and productive with inclusive students with autism than general education teachers (Hay, 2012). Time spent with teaching assistants during

inclusive learning can result in improvements to behavioral and emotional challenges for students with autism (Osborne & Reed, 2011).

Scholars Vassiliki, Marita, Eleni (2011) found students with special needs liked activities that included evidence-based differentiated instruction strategies. Training for evidence-based instruction strategies can happen in various ways in an inclusive school. For example, autism-specific training paired with professional collaboration between all educators in a school with inclusion students is beneficial to learning outcomes for students with autism (Kosmerl, 2011). Autism-specific evidence-based training for school administrators can also benefit inclusive students with autism (Loiacono & Palumbo, 2011). Administrators with adequate autism-related understanding in teaching strategies can better support general education teacher of inclusive students with autism. Yet, the effectiveness of autism-related professional training should be considered. Segall and Campbell (2012) suggested that individuals engaged in training reform efforts need to reflect on the relationship between teacher attitude toward students with autism, professional knowledge, and educator experience to maximize effectiveness of the training.

Synthesis of mixed-method studies in literature review. The majority of class time in inclusive settings is used by the general education teacher to provide whole class instruction (Cameron, 2014). Cameron (2014) noted that most one-on-one interactions and decisions for learning disabled students in inclusive settings come from para professionals. Implemented school-based social skills interventions in schools with inclusive students with autism can help students succeed (Ostmeyer & Scarpa, 2012).

Karadag and Yasar (2010) reported that all students benefit academically from teachers who differentiate instruction to meet specific student needs.

Conclusion

A review of the literature revealed several issues and concepts related to academic and behavioral challenges inclusive students with autism have and the need for teachers of inclusive students with autism to implement evidence-based practices in order to be able to address those challenges. The key ideas that emerged from the exhaustive literature analysis: lack of adequate autism-specific training for general education teachers of inclusive students with autism and the benefits that can come from training. These emerged ideas align with concepts in the weak central coherence and executive dysfunction theories.

Overall, effective autism-focused evidence-based teacher training must be available for secondary general educators to successfully address the academic and behavioral challenges of inclusive students with autism. Concepts in the weak central coherence and executive dysfunction theories contributed understanding to ways to address the challenges of inclusive students with autism. According to Probst and Leppert (2008), provision of autism-based training that is focused on the disorder's common symptoms and effective evidence-based interventions is needed for teachers in inclusive settings with students with autism. In summary, the literature review process exposed key concepts related to academic and behavioral challenges of inclusive students with autism and evidence-based teaching strategies that can be implemented to address those challenges.

Section 3: Research Method

Introduction

The local problem that drove this study was the poor academic performance and behavior of inclusive students with autism when compared to typically developing peers at the local research site, as presented in Section 1. This section describes the rationale for selecting a qualitative case study approach to conduct the research to explore secondary general education teachers' experiences with and perceptions of the academic and behavioral challenges of inclusive students with autism. I provide details for the sampling method and size, the setting, a description of participants, data collection methods, data analysis, steps for addressing validity and reliability, and ethical considerations. Teachers and administrators may benefit from the findings of this research through the contribution of teacher perceptions to inform decisions related to training needs related to addressing the challenges.

Research Design

The purpose of this qualitative case study research approach was to explore general education teachers' experiences with and perceptions of the specific academic and behavioral challenges of inclusive students with autism. I chose a qualitative method as it was fitting to explore social phenomena and would give "voice and feelings to the participants under study" (Lodico et al., 2010, p. 264). The qualitative method further allows researchers to collect open-ended emerging information with the main purpose of establishing themes (Creswell, 2013).

Creswell (2013) highlighted five common qualitative strategies of inquiry used in scholarly research as grounded theory, narrative, ethnography, phenomenology, and case study. A case study research approach was selected for this research because the other four designs would fail to provide the in-depth exploration of participants' perceptions that I wanted for this study. An ethnographic design was rejected as it is more suited for understanding cultural complexities (Lodico et al., 2010). Grounded theory design was also rejected as it is more suited for researchers who aim to develop a theory grounded in data that are collected through multiple techniques and are continually reviewed over a long period of time (Lodico et al., 2010). Phenomenological research likewise was not selected for this study as it is more appropriate for scholars who seek to establish meaning from identified patterns and relationships out of the data collected from extensive and prolonged interactions with participants (Creswell, 2013). Overall, a case study was selected because it would allow me to "focus on an in-depth exploration of the actual case" (Creswell, 2012, p. 465). I further chose a case study approach because it is suited for researchers who seek in-depth exploration using a small number of individuals in a setting (Creswell, 2013). Researchers implementing case studies use a variety of strategies to gather detailed information while being bound by activity and time (Creswell, 2013). The data that were collected during this case study consisted of 30-minute individual semistructured telephone interviews with each participant (see Appendix A) and individual independent participant journaling guided by prompts (see Appendix B) related to challenges of inclusive students with autism at the local site.

Research Questions

The research questions for this study were developed based on the local problem of poor academic achievement for inclusive students with autism at the local research site and the literature review on the topic. The questions included the following:

RQ1: What are the teachers' perceived academic challenges of inclusive students with autism at the local research site?

RQ2: What are the teachers' perceived behavioral challenges of inclusive students with autism at the local site?

RQ3: What challenges and needs do general education secondary teachers experience while teaching inclusive students with autism?

Context of the Study

The west Michigan district where the study was conducted had approximately 8,500 students in 16 schools ranging from preschool through 12th grade. There had been an increase in the diversity in student learning abilities throughout this district in recent years. Ten percent to 12% of the current student population in the local district demonstrate low skill levels and a lack of sustained progress. According to the principal at the local research site, within the 10% 12% of students who demonstrated low skill levels in the local district, 32 of those students had autism (personal communication, October 2014).

The Local Site

The local research site in this study was one of three public middle schools in one west Michigan district. The building had approximately 500 students in Grades 6 through

8. The principal at the local research site noted that 16 students were inclusive students with autism (personal communication, October 2014). All students with autism at the local site were educated in the inclusion setting throughout the day (principal, personal communication, October 2014). The local site had a child study team of educators who periodically reviewed student evaluations and other documented materials to determine if criteria were met for accommodations in the LRE (principal, personal communication, November 3, 2014). The district's annual education report for 2013-2014 noted that students with disabilities at the local site scored significantly below general education peers in the same building on math, reading, writing, and science. The principal at the local research site highlighted that all teachers in the building received annual professional training in differentiated instruction, yet it did not include autism-specific information (personal communication, October 2014).

Population and Sample

The population for this study was secondary general education teachers of inclusive students with autism. The west Michigan middle school that served as the local research site consisted of 32 staff members, 13 of which were in the study population of general education classroom teachers who taught inclusion students with autism (principal, personal communication, October 2014).

The sample of the study consisted of six of the 13 teachers who educated inclusive students with autism at the local site. All 13 teachers were invited to participate in the study. Of those invited, the first 10 to accept the invitation were to be selected as participants, yet only seven agreed to participate with one participant withdrawing before

data collection. Twenty-five teachers at the local research site had inclusive students with autism. According to the principal at the local research site (personal communication, March 21, 2015), 13 of those teachers had been teaching middle school for more than 5 years and has a master's degree. Therefore, the use of seven participants was adequate for this study because the population of educators at the local research site had a high rate of homogeneity. High homogeneity in a population allows data saturation to be reached with 10 or fewer participants in a study (Mason, 2010). Creswell (2012) further supported the use of smaller samples in qualitative studies as it can allow researchers to establish an in-depth understanding that could be diminished if additional individuals or sites were incorporated in to the study. Qualitative studies with smaller sample sizes also allow for the complexity of a situation to be demonstrated through rich data gathered from specific participants (Creswell, 2012).

The defining characteristics of the participants in this study were that they were secondary educators of inclusive students with autism at the local research site who had taught more than 5 years and had earned a master's degree in education. Purposeful sampling was used for participant selection for this study. This method of participant selection was used because I sought to use participants who could best contribute a detailed understanding to the problem of the study. Creswell (2012) supported the use of purposeful sampling for researchers who seek participants based on their being members of a "subgroup that has defining characteristics" (p. 208). Purposeful sampling involves the selection of specific participants either due to working relationships or general proximity to the researcher. Purposeful sampling also is conducted when specific traits or

conditions are warranted from the participants. These are common procedures in qualitative methods.

Ethical Protection

Various efforts for ethical protection and considerations happened prior to and during this study. These ethical and confidential practices included gaining permissions to the research site and participants through the proper authority, establishing and maintaining protection of participant identities throughout entire study process, providing participants with full detail of the study purpose and processes, and informing participants of their rights to withdraw at any point. Conducting this research was contingent upon approval from Walden University's Institutional Review Board (IRB) and the principal from the local research site. The principal at the local research site has authority to approve research in her building.

Prior to data collection, I sent an informed consent document to each participant using his or her school e-mail address. The informed consent document highlighted the study's procedures, purposes, benefits, risks, and participants' right to withdraw at any time. The informed consent document further included participants' rights to ask questions, receive results, and maintain anonymity during the study. Participants were verbally reminded at the beginning of the interview process that all ethical and confidential practices would endure throughout every stage of the study. These practices included the protection of participants' identities throughout the study by assignment of a random number to each participant prior to data collection so I could keep track of and reference data without using names. Participants were notified verbally and through the

informed consent document that participation was voluntary, they had the right to withdraw at any point, and being involved posed minimal risk.

Subject Anonymity in Data Collection

I assigned each participant a random number prior to the interviews to keep track of all data while still honoring participants' rights to anonymity throughout every step of the study. I referenced participants by their assigned numbers instead of their names when needed to protect identity throughout the study process. Prior to the interviews, I gave participants the option to provide me the various documents needed, such as signed forms, via e-mail or paper copies.

Ethical handling and storage of both electronic documents and paper documents were considered throughout the study process. Each participant had his or her own file folder labeled with a corresponding number. These files store participants' individual computer printed copies of the interview transcription Microsoft Word document, signed consent forms, and the audio recordings from individual interviews. These items will be stored in my office in a locked file cabinet for protection of participant identity. Any documents delivered to me through e-mail were filed and password protected for security on my office computer. The documents stored on my personal computer were labeled with the corresponding participants' researcher-provided identification number. All documents will be destroyed 5 years after the completion of the study.

Gaining Access

Gaining permission to the local research site began with contact with the building principal. The building principal at the local research site has the authority to approve

research in her building. Permission to gain access was obtained through a formal letter e-mailed to the building principal. The letter outlined the purpose of the study, the amount of time needed to collect data, efforts for protection of participants, and how results will be beneficial to participants. The principal agreed to be a community partner for the study.

The research site building administrator provided school e-mail addresses for all general education teachers of inclusive students with autism who had a master's and at least 5 years of teaching experience. Those teachers were invited to participate in the study through an e-mailed letter that I personally sent, which explained the nature of the study. Seven participants accepted the invitation to participate and were hence chosen as the study participants. One participant withdrew from the study prior to data collection. I will keep a copy of the e-mail sent to participants in a secure password locked electronic file on my computer. No data were collected until IRB approval was obtained.

Once these seven potential participants were identified, they were notified through e-mail that they were chosen to participate in the study and provided a consent form. The consent form contained aspects of disclosure elements, the voluntary nature of participation, risks, and benefits, and provided contact information for me as the researcher. This form was returned by participants to me via e-mail with the reply of "I consent" to show consent.

Role of the Researcher

Validity of the study findings was increased to control researcher bias (Creswell, 2012). One way I controlled for bias was by keeping a reflective researcher bias journal

to help set aside personal beliefs and avoid influence on participants' responses (Lodico et al., 2010). I recognized my own bias toward various elements of inclusive education programs for students who are diagnosed with autism. My biases stemmed from being a parent of an inclusion child with autism and being a former secondary general education teacher of inclusive students with autism. I value autism-specific training for general education teachers of inclusive students with autism. Yet, this bias was controlled through reflective field notes accompanied by review of all noted biases with my chairman (Bogdan & Biklen, 2007).

I also maintained a data collection log in this study to promote dependability and reliability. Trustworthiness in a study can be assessed based on examination of the steps used in data collection and how the final product was achieved (Houghton et al., 2013). The data collection log served to record detailed steps taken by me and by participants throughout the entire process in this study.

I was formerly a middle school mainstream classroom teacher for 7 years and I worked with inclusion students with autism. I taught in a different district than the local research setting of this study. I had no personal or professional relationships with any of the participants at the local research site, which minimized any effect on data collection.

I currently work in administration at a private autism center. I have been in an administrative role at the autism center for 3 years. From this professional experience I understand the various teaching strategies used for educating students with autism. I avoided allowing my role at the autism center to affect data collection by recording the interviews and transcribing the wording verbatim. During analysis of data gathered from

the independent journaling, I only focused on the details in the journals to answer the research questions. I further disclosed my professional background, experiences and purpose of the study to establish a relationship with participants at the beginning of the telephone interview process.

Data Collection

Data gathered for this study were collected through individual interviews with participants via telephone and independent participant journaling. Use of two methods of data collection established a greater validity and reliability to the data versus only using one (Lodico et al., 2010). Use of multiple forms of data collection can also support integrity of a study (Babchuk & Badiee, 2011). The data collection methods were conducted simultaneously. Participants were instructed to complete the five journal entries within 5 days of the individual semistructured interview process.

The interviews were recorded using an audio recording device. The audio recording device was placed next to the phone at a distance that allowed the output from the speaker during the call to be recorded. I tested the recorder and the distance from the speaker on the telephone before the interview process to know where the audio recorder needed to be in order to get the best sound quality during recording.

Individual interviews were appropriate for this study because the smaller sample size can allow for an in-depth exploration into the issue (Creswell, 2012). Researchers directly interact with participants in a case study approach so one-on-one data collection methods like individual telephone interviews are appropriate. The use of interviews for a data collection method further provided the opportunity for me to maintain control over

the direction of information received through follow-up questions where needed (Creswell, 2012).

The interviews were transcribed verbatim into a Microsoft Word document. Each interview transcription document was labeled with a number in which the participant can be identified to maintain confidentiality and anonymity. The transcription documents will be kept safe in my password-protected computer program.

The independent participant journaling was used simultaneously with the semistructured interviews in the data collection process. Participants' district e-mails were obtained with permission from the building administrator after sample selection was complete. To complete the journal entries, participants were be directed to reflect on the academic and behavioral challenges of their inclusive students with autism via their school e-mail account using the same journal prompt for each of the 5 consecutive days (Appendix B). Participants were instructed to start the e-mail journal entry each day immediately after students left school each day. Participants were instructed to reflect and journal for 10 minutes each of the 5 days during this stage of data collection. Journal e-mails were sent to me immediately after each day's entry was complete.

All six participants completed the journals on Day 1 of the 5 days. Four participants completed the journals on Day 2. One participant noted that there were no students with autism in class on Day 2 or Day 4 so this participant did not journal on those days. Three participants completed the journal on Day 3. One of the participants reported being absent from class due to illness on Day 3 so no journal was done that day.

On Day 4, five participants completed the journal. On Day 5, four completed the journal. There were 22 journal entries total completed in the 5 days of journal data collection.

Independent journaling is an effective way for researchers to obtain participants' reflective ideas for later analysis (Hayman, Wilkes, & Jackson, 2012). Hayman et al. (2012) asserted that journal data in research can contribute understanding through documentation of participants' "specific experiences in natural contexts and frameworks" (p. 27). Journaling further can enrich data obtained from interviews in research (Hayman et al., 2012). Therefore, independent participant journaling was used in this study to answer the research questions and address the problem by adding depth to the data gathered from participants' individual interview responses.

Instrumentation

The instrument used in this study included an interview protocol for a researcher-conducted semistructured interview with each of the participants (see Appendix A). The protocol had seven open-ended questions that were accompanied by follow-up and probing questions when warranted during the interview process. Each interview lasted approximately 30 minutes. Each question focused on the study problem and was used to collect data that could answer the research questions. Open-ended questions during a semistructured interview can be used to minimize feelings of intimidation or coercion (Laureate, Inc., 2012). Also, participants are able to express a variety of views on a topic without feeling researcher-imposed limitations when an open-ended question format is used (Creswell, 2012).

Interview Process

The 30-minute semistructured interviews were conducted simultaneously with independent participant journaling and were conducted over a 2-week span of time. The interviews were scheduled at non-instructional times during the school day that were convenient for the interviewee. I had an interview protocol form listing seven open-ended questions that were accompanied by follow-up and probing questions asked as needed during each interview (see Appendix A). Open-ended questions allowed participants the opportunity to express a variety of views (Creswell, 2012). The interview protocol form provided a means for me to take notes during participant responses and served as a reminder of interview questions (Creswell, 2012).

Participants provided an informed consent document via e-mail prior to the interview process, which included explanation of the use of the audio recorder during interviews. The participants also received a verbal reminder from me about the audio device that was going to be used prior to each interview as to further follow the ethical research practice of ensuring well-informed participants (Bogdan & Biklen, 2007). Hand notes of interview responses were not needed as a backup procedure as the audio recorder device never malfunctioned during interviews.

I recorded insights and notes pertaining to the interview process and participants on the interview protocol form during the telephone interviews yet strived to maintain full engagement during participant responses. I transcribed the audio recordings verbatim in a Microsoft Word document within 3 days after each interview as the responses were

still fresh in my memory. Other notes that were taken during the interviews were stored in each individual participant file.

Data Analysis

The data analysis stage began after all data were collected. Data analysis for this study entailed arrangement of raw data in an organized way that helped me make sense of the data. Predetermined themes for this study included a focus on cognitive processes related to learning outcomes for inclusive students with autism and behaviors of those students that could impact learning outcomes. The pre-determined themes were created from general principles of the weak central coherence theory and the executive dysfunction theory conceptual framework. The themes included autism symptoms displayed in educational settings, challenges for general educators of inclusive students with autism, and the impact of autism-specific training for general education teachers of inclusive students with autism.

Data from the interviews were coded using the pre-determined themes that were established prior to data collection for use in the organization of emerging concepts. Establishing themes before data collection can help ground the study and "form a core element" during the data analysis stage (Creswell, 2012, p. 248). New emerging themes were further incorporated in the data analysis process as they emerged.

The coding strategy used was a segmenting-and-labeling process. This coding process was an inductive way to narrow data into a few specific themes. The codes and themes of this study were based on the secondary general education teachers' perceptions

of academic and behavioral challenges of inclusive students with autism. Coding started after all data had been collected.

I first established a sense of the data by reading all data documents carefully while I wrote ideas in the margins. I then reviewed all data again to establish descriptions and broad themes (Creswell, 2012). This entailed creating text segments in all data documents. The labels that were applied to the transcribed interviews and journal data were the codes that emerged from the data. I created a list of all codes after all data were reviewed and codes established. I then reviewed the codes and grouped similar codes together to establish common themes. Establishing codes and themes helped make sense of these data by enabling me to identify and eliminate redundant data or that of which is not applicable to the research topic (Creswell, 2012). The final step in the data analysis process was to make a list of the themes and then to group together themes to identify major ideas from the data. The coding and theme process continued until saturation, which was the point where no new support for the predetermined themes, codes, or enhancing details came from the data any further (Creswell, 2012). Data that did not relate to the themes was noted as 'Other' and included in findings.

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Validity, Credibility and Accuracy of Data

</div>

Accuracy

Transcript review. Transcript review in research entails the researcher allowing participants to review data provided during data collection and giving participants the opportunity for feedback on the accuracy of data (Goldblatt, Karnieli-Miller, & Neumann, 2011). Transcript review allows participants to respond to their own words

which can improve accuracy in a study (Harper & Cole, 2012). I implemented this process to ensure that the interviews were transcribed accurately and were complete.

I implemented transcript review prior to data analysis during the study to establish accuracy of data. First, I provided each participant through e-mail with his or her interview answers verbatim to confirm accuracy of my transcription and understanding. I sent all participants a copy of their own transcribed interview answers after the interview process was completed. The instructions in the e-mail were to review for accuracy and provide feedback to me through an e-mail.

Audit trail. Through the entire data collection process, I established a well-documented audit trail. As supported by Rumrill et al. (2011), an audit trail consisted of documents reflecting all hand-written data analysis steps, any raw data, and researcher notes. Historically, audit trails have been used in research to maintain data integrity by having record of the progression of all data entries that could serve to provide a detailed path for study reconstruction if needed (Jiang & Cao, 2011). Further, having a chronologically organized data trail can serve as a log that helps the researcher gauge the development of the project (Bogdan & Biklen, 2007). Thomas and Magilvy (2011) posited that audit trails in research should include sufficient detailed description of study processes and materials so another researcher could replicate the study step-by-step. Audit trails can increase the dependability of findings in qualitative research and build trust in findings (Thomas & Magilvy, 2011).

Validity and Credibility

Member check. I also implemented a step of member check after data were analyzed. I provided each participant with the codes and themes that emerged as part of the findings during data analysis of the interviews and journals. Each participant reviewed the emerged themes and codes and was instructed to provide feedback on the accuracy pertaining to their responses via e-mail. Harper and Cole (2012) supported that validity of a study is increased when a researcher provides opportunity for participants to verify accuracy of analyzed data. Credibility of a study is also increased when a researcher obtains input from participants on interview data before analysis and then again after the analysis process (Thomas & Magilvy, 2011). Thomas and Magilvy (2011) asserted that returning to participants who provided data "can ensure that interpretations…of the researcher are recognized by the participants as accurate representations of their experiences" (p. 153). During the member check, I provided participants only with the codes and themes from data analysis. Not providing participants with the findings may limit the credibility of the study.

Researcher bias log. Also contributing to the validity of this study is the researcher bias log. I reflected on and documented my personal beliefs throughout the research process to control for any influence on the results. My biases were controlled through the field notes in the log and reviews by my study chairman.

Summary

This section presented a description of the study methodology, the research design and rationale. The purpose of this study was to explore general education teachers'

perceptions of the specific academic and behavioral challenges of inclusive students with autism. Individual interviews and independent participant journaling were used to gather data related to the study. The interviews consisted of open-ended questions related to teachers' perceptions of academic and behavioral challenges of inclusive students with autism at the secondary level. Ethical considerations and bias control matters were also presented in this section. Section 4 will consist of the data analysis and Section 5 will present the summary of findings with recommendations for further research.

Section 4: Reflections and Conclusions

Introduction

There is a problem with respect to inclusion students with autism performing poorly academically and behaviorally compared to typically developing peers. The purpose of this study was to explore middle school general education teachers' experiences with and perceptions of the specific academic and behavioral challenges of inclusive students with autism. I gathered data from six mainstream middle school teachers of inclusive students with autism.

Inclusive students with autism encounter challenges in the classroom due to differences in the way their brains process information compared to neurotypical peers (Gobbo & Shmulsky, 2014). The current prevailing interventions applied in secondary-level schools are inadequate to address the variety of needs of students with autism (Kucharczyk et al., 2015). Individual semistructured interviews and individual participant journals were used simultaneously as data collection tools in this study.

Participants responded to semistructured interviews regarding academic and behavioral challenges of inclusive students with autism. Three overarching research questions guided this study:

RQ1: What are the teachers' perceived academic challenges of inclusive students with autism at the local research site?

RQ2: What are the teachers' perceived behavioral challenges of inclusive students with autism at the local site?

RQ3: What challenges and needs do general education secondary teachers

experience while teaching inclusive students with autism?

In this section, I explain ways the data were generated, collected, and recorded in

this qualitative case study design. These data were coded so they could be analyzed and

organized into predetermined and any additional emerging themes. I intended to use this

study to identify common views, emerging themes, and patterns in the data by using a

segmenting-and-labeling process of open coding for both the interview data and journal

entries. The findings of this study are further presented in this section. This section

concludes with an overview of ways that quality study practices were used throughout the

research process.

Generating, Gathering, and Recording the Data

After IRB approval from Walden University (07-31-15-0338932), the data

process started. I generated, gathered, and recorded the data through semistructured

interviews and independent participant journals completed over 5 days. Evidence for the

emergent themes was provided by the data for this study.

Interview Process

Data collection started by conducting six individual semistructured interviews

with secondary mainstream teachers of inclusive students with autism. I used a letter of

introduction to approach the participants at the local research site to start the data

gathering process. Seven teachers responded to the letter of invitation and were selected

as participants. After the participants were obtained, a letter of consent to participate was

e-mailed out to each participant. Each participant was instructed to provide an electronic

signature and return the consent document to me through e-mail. Participants had the option to proceed using their personal e-mail accounts or their district-provided accounts. All participants chose to use their school e-mails. One participant withdrew from the study prior to data collection.

The interviews were conducted via telephone. I reminded each participant that participation was voluntary and he or she could stop at any time. I further reminded them that the interview was recorded. I provided my professional background, experiences, and the purpose of the study at the start of each interview to establish a relationship with participants. An IRB-approved interview protocol form (see Appendix A) was provided to participants prior to the interview process to serve as a reference during the interviews. I used the interview protocol document to ask probing questions, which added detailed data for each participant's response. The duration of the interviews ranged from 22 to 30 minutes.

Participants' answers were audio recorded and then transcribed by me into Word documents for analysis. The Word documents were then printed and used during data analysis. I first conducted an initial review of the printed transcripts. The electronic form of the Word documents were used during the first part of the transcript review process where participants were allowed to review the transcription of data before they were analyzed. After interview data were transcribed and reviewed by participants, I then analyzed the data using a careful and deliberate segmenting-and-labeling process of open coding. Data were reduced into smaller, meaningful chunks of information that I determined to be similar in concepts. Those chunks of information were labeled in the

margins with key words, or codes, for easy identification and organization of concepts.

For example, key words such as *organizational skills a challenge*, *disruptive outbursts*,

time to complete task, *keeping pace*, *lack of comprehension*, *class size an issue*, *need*

training, *increased collaboration*, *more support*, *off task*, *parent participation*, *lack of*

social skills, and *widely varied symptoms a challenge* were grouped based on similarity

of the participants' responses. Related ideas and concepts were identified and grouped

from those key words to create more broad themes.

I created a Word document for the organization and storage of data related to each

theme. For example, one Word document was created specifically for the four interview

themes: academic challenges, behavioral challenges, teacher challenges, and teacher

needs. Data for the journals were also organized in this way. I cut and pasted into each

Word document the participants' interview responses and journal data related to each

theme. Discrepant cases were copied and pasted in a Word document as well.

I next sent an e-mail to each participant after analysis to provide participants an

opportunity to review the findings. Participants were instructed to provide feedback

through an e-mail on the accuracy of the analyzed results. Journal data and interview data

were sent simultaneously. All participants responded to the e-mails. One participant used

this opportunity to clarify the meaning of a term she used during the interview.

Journal Process

Independent participant journaling for data collection was completed at the same

time as the semistructured interviews during this qualitative case study. Participants'

district e-mails were obtained with permission from the building administrator.

Participants were e-mailed a journal protocol document (see Appendix B), which

provided instructions for journals. Participants were instructed to respond to the provided

journal prompt for 5 consecutive days. The prompt was "What academic and behavioral

challenges did you notice today with inclusive students with autism and how did you

address those challenges?" Participants were further instructed to initiate their e-mail

journal entries each day immediately after students left school and send the e-mail when

the 10 minutes of required writing time was completed. Two participants followed

instructions to reflect and journal for 10 minutes for 5 days of this stage of data collection

and e-mailed the journal immediately upon completion. The other four participants e-

mailed their journal entries in a more sporadic timeframe. Some participants e-mailed

journals later in the same day or the following morning. I received a total of 22 journal

entries over the 5 designated journal days.

All e-mails were saved electronically in a password-protected computer in my

home office. Copies of each participant's journals were also printed for hand analysis.

The journal entries were analyzed using the same segmenting and labeling process as the

interview data analysis. Participants were provided the analyzed journal data via e-mail

communications to member check simultaneously with the analyzed interview data.

Tracking of the Data and Analysis

Within 48 hours of the conclusion of each interview, I established dedicated time

to listen to the audio recording without interruptions or pauses. I then revisited each audio

recording and transcribed verbatim the participants' responses into Word documents. I

labeled each individual audio recording with the corresponding participant number

provided prior to data collection as to honor confidentiality practices. The transcriptions were stored on my home office computer. I filed an audio storage drive used with the recording device away in a locked filing cabinet in my home office.

After all six interviews were conducted over a week's time and the last interview was transcribed verbatim into a Word document, each participant received a copy of the verbatim transcription of their responses through e-mail. Participants were prompted in this step of transcript review to reflect on the accuracy of my transcription and provide feedback via e-mail communication. All participants responded that the transcriptions were accurate.

Journal data were collected simultaneously with the interviews. Participants e-mailed their journal data to my personal e-mail for 5 consecutive days. An electronic file of journals was stored and password-protected on my home office computer. A hard paper copy of each participant's journal entries were printed for the hand analysis phase of this study. Each hard copy of journal entries was labeled with participant's assigned code to preserve identities of participants. All documents were then filed and secured in my locked home office filing cabinet.

Data analysis of the interviews and journal entries started immediately after all data were collected. Interview data and journal data were analyzed using the same process. The electronic journal entries, like the interviews, were printed and used during data analysis. I analyzed the data using segmenting-and-labeling process open coding. In this process of data analysis, I first read the raw journal data several times to expose the meaning, ideas, or thoughts. I then reduced the data by breaking them into smaller,

meaningful segments of information that have related ideas or concepts. Those segments

of information were labeled in the margins with key words, or codes, for easy

identification and organization of concepts. The codes connected to concepts in

participant responses. The codes from the journals included the *need for support,*

disruptive behavior, lack of understanding, need training, student challenged by content,

off task, needy, setting a challenge for student, and *teacher feeling challenged.* I next

grouped the codes from analysis into broad themes. All participants were given the

analyzed data in the member check process. This step allowed the opportunity for

participants to review the emerged themes from my interpretation of data.

For all data in this study, I copied and pasted statements from each participant's

responses in Word document created to organize information related to the individual

themes. This organizational method was used to identify how many participants provided

data relating to each theme. Discrepant cases from data were copied and pasted in a Word

document as well.

Findings

A qualitative case study was used to focus on teachers' experiences with and

perceptions of academic and behavioral changes at a particular case at a specific site. A

problem at the research site is inclusive students with autism are performing lower

academically than typically developing peers. According to Nahlous-Ismail (2010),

inclusive students with autism often struggle in school more so than typically developing

peers. Various symptoms related to the disorder may result in lower academic success for

inclusive students with autism (Able et al., 2014). The research design I used allowed me

in-depth exploration of the problem through interactions with participants who can provide rich detail to answer the research questions.

Analysis of participants' interview responses and journal data revealed patterns, relationships, and themes that addressed the research questions. Several findings came from the interview and journal data. The findings contained the following themes: Inclusive students with autism have academic challenges, inclusive students with autism have behavioral challenges, teachers of inclusive students with autism have challenges, and teachers of inclusive students with autism have specific needs to better teach those students. Each finding is presented and explained in this section of the study.

Subthemes also emerged from data analysis and contributed to the findings in this study. The subthemes of the theme of inclusive students with autism have academic challenges included keeping pace with peers, understanding content, demonstrated low cognition, overwhelmed by school, high demand for time from teacher, and distracted by inclusive setting. The subthemes of the theme of inclusive students with autism have behavioral challenges included poor social skills, exhibited poor organization related behaviors, disruptive emotional outbursts, poor focus, need for frequent attention from teacher, anxious behaviors, and following class rules. The subthemes for the main theme of teachers of inclusive students have challenges included lack of understanding of autism, lack of ability to address inclusive students' needs in typical class setting, lack of knowledge of strategies related to teaching inclusive students with autism, and lack of paraprofessional support to in classes with inclusive students with autism. The subthemes for the main theme of teachers of inclusive students have specific needs included more

support in class from paraprofessionals, more collaboration and time, more understanding

of the disorder, and more autism-specific training.

Each finding is connected with the research questions and explained in the

following section. A brief summary of how the findings aligned with or added to the

literature is also included in Section 5.

RQ1, Emerging Theme and Pattern 1: Teachers Perceive Inclusive Students with

Autism To Have Academic Challenges

Academic challenges was one consistent pattern that emerged from secondary

mainstream teachers' perceptions pertaining to inclusive students with autism. Journal

and interview data were used to answer the first research question: What are the teachers'

perceived academic challenges of inclusive students with autism at the local research

site? Six participants provided their perceptions of secondary general education inclusive

students with autism. Various types of academic challenges were noted 35 times in the

six interview transcripts and 22 journals.

Codes related to RQ1. Many codes emerged during data analysis related to

specific academic challenges of inclusive students with autism at the research site. A

segmenting-and-labeling process was used to determine codes in the data. The codes that

emerged and contributed to the determined theme of perceived academic challenges are

as follows:

- Difficulty in keeping pace with peers during class

- Lack of understanding of content

- Demonstrates low cognition

- Overwhelmed by school overall more than typically developing peers

- Needs frequent one-on-one direction from teacher to complete tasks

- Typical mainstream class setting is more distracting to inclusive students with autism than to typically developing peers

Difficulty keeping pace. Regarding pace of inclusive students with autism, four out of six participants stated that secondary inclusive students with autism had difficulty keeping pace during class work. Participants identified problems with the ability of inclusive students with autism to perform very routine tasks during class, such as participation in group discussion and writing during independent work time, which was consistent with findings presented in a study by Olu-Lafe et al. (2014). Three participants noted further that students struggled to keep pace during class instruction along with delayed processing of information compared to typically developing peers, which was congruent with findings by Gobbo and Shmulsky (2014). Examples of raw data that support this code were as follows:

- Participant 5 said, "It wasn't until the 2-minute warning was given before this student wrote the next thing he saw projected on the board, which had no relevance to the questions being asked."

- Participant 4 said, "If I give too much information it might not be able to be understood as well as if I show."

- Participant 3 said, "But then I find that they, ... when you ask them to write, ... the level of intricacy is tough."

Lack of understanding of content. The majority of participants noted their students seemed to demonstrate a lack of understanding of content presented in class. Three participants mentioned that students were challenged by directions on assignments. In reference to a student completing tasks, one participant reported the student "seemed to have a great deal of trouble with our assignment while the rest of the class had no trouble at all." Understanding content in reading-based tasks was also included in perceptions of two participants. Participant 3 described one student's struggle to understand the content of an assignment:

> During this activity, [student named] basically copies the poem title, the poet's name, and, with our visualizing and verbalizing activity, when I ask students to write down what the poem made them see, imagine, wonder, hear, smell, etc., [student named] will write down only literal answers. Today, for instance, he wrote, "I see a man with socks."

Participant 5 mentioned that inclusive students with autism were challenged with applying different concepts, ideas, and facts that came from the reading assignments in class. For example, students had trouble reading a selection from the class textbook and then answering questions pertaining to the reading in a written assignment during class time.

Cognition deficits impact on learning. Perceived cognitive deficits emerged as another code pattern related to perceived academic challenges of inclusive students with autism. Four participants stated that students' low cognitive abilities impacted their understanding and functioning in class, which is aligned with findings by Aljunied and

Fredrickson (2011b) and Olu-Lafe et al. (2014). Also mentioned by participants was that students appeared to struggle with processing the amount of information presented in class. Participant 3 reported that "one student in particular ... was incapable of doing basically any kind of academic work whatsoever." Understanding writing assignments related to use of imagination and creativity were a particular challenge for inclusive students of Participant 3.

Overwhelmed by school overall. Most participants identified some aspect of inclusive students being overwhelmed. There were 12 specific items in the data where participants identified students as being overwhelmed in some capacity. One participant noted that an inclusive student with autism had to take a day off school due to feeling overwhelmed and stressed. Participant 7 perceived inclusive students to be overwhelmed and distracted by the general education class setting:

> So, even if you are in a room of 30 kids and they are all working, everybody is wearing different colors and everybody is writing different things and sitting in different places and, so, visually being in a large group, um, in terms of the sensory awareness, can be difficult for them sometimes and that can be distracting from their academics.

Participant 5 mentioned a student had become so overwhelmed by test material that the student "shut down," put his head down on the desk and became withdrawn from his surroundings. Participant 7 perceived inclusive students with autism in class to become overwhelmed by the amount of work and it was addressed by "giving them pieces at a time." While participant 4 explained a student became overwhelmed early on

during the school day and started to exhibit violent behavior toward others during her class. Administration had to be called to remove this student before the student hurt others or himself. Participant 4 expressed that some settings in school seem to be overwhelming, uncomfortable, and too stimulating for inclusive students with autism, which can result in limited learning.

Need for frequent one-on-one from teacher for academic help. The majority of participants noted inclusive students with autism needing frequent teacher attention during class. Participant 7 stated that getting a specific inclusive student with autism "to complete those two small tasks required a lot of one-on-one attention and coaxing." Participant 3 also reported inclusive students with autism to have high need for teacher attention. The higher need for teacher attention by inclusive students with autism was noted by participant 5 as an expectation and "that there's going to a little bit more work for me" in that class.

Typical setting distracting. Some participants reported the inclusive setting seemed to be more of a distraction to their students with autism than to the typically developing peers. Participant 2 recalled a student who "always had to wear headphones on his ears so, anytime it was too loud or whatever ... he put those on and he was able to get back to work." Participant 7 also highlighted an inclusive student who struggled with the noises in a typical classroom. Class size in a typical classroom can have a significant impact on the learning for inclusive students with autism, according to participant 5:

> I do think class size is important ... I think that, you know, if my particular student
> with autism was in that class of 20, even that difference of three students, makes a

huge difference on their learning. Less distractions, more-one-on-one time, less

movement around the classroom, so, all those, those are smaller class sizes do

make a huge difference, as well.

Participant 7 used a specific example of a student who sometimes needed a break

from the stimulation and visual distractions of the typical class setting. The participant

tried to give the student a break from the class setting while continuing class instruction.

RQ2, Emerging Theme and Pattern 2: Teachers Perceive Inclusive Students with Autism To Have Behavioral Challenges

Journal and interview data collected from six secondary general education

teachers of inclusive students with autism were used to answer the second research

question: What are the teachers' perceived behavioral challenges of inclusive students

with autism at the local research site? The resulting dataset included teacher perceptions

of the behavioral challenges of their inclusive students with autism.

One of the four key themes that resulted from analysis was that inclusive students

with autism have behavioral challenges. Various types of behavioral challenges were

noted 39 times in the 6 interview transcripts and 22 journals. Many codes emerged during

data analysis related to specific behavioral challenges of inclusive students with autism at

the research site.

Codes related to RQ2. The codes that emerged and contributed to the determined

theme of perceived behavioral challenges are as follows:

- Outbursts
- Lack of organizational skills

- Social skill deficiencies

- Inability to focus

- Following classroom rules

- Anxiety

Outbursts. Students' disruptive outbursts were behaviors noted by most participants in this study. Some participants mentioned that students were violent at times during these outbursts. Participants also included examples where students' outbursts interrupted class, endangered other students, and resulted in administration intervention. Participant 3 recalled one inclusive student needed more redirection as he blurted out consistently during class. Another participant included an example where a student had an emotional outburst during class and ran into the corner of the room to be away from others. This teacher said the student was agitated and could not focus on anything for the remainder of class. Two participants reported feeling frustrated from the frequency of student outbursts.

Lack of organizational abilities. All participants noted some challenge related to student ability to stay organized. Participant 7 said inclusive students with autism organizational skills are weak. Participant 5 arranged for a peer helper specifically to help one inclusive student with organization struggles during class. Participant 3 pointed out that students with autism are often so unorganized that it seems negatively impact their behavior due to the resulting stress.

Poor social skills. Five out of six participants noted some form of social skill challenge based on their perceptions of their students with autism. Challenges related to

social skills were mentioned 30 times throughout the data. Lack of ability to recognize social cues was highlighted by one participant. Another participant shared an example of awkward social behavior from an inclusive student who ran and hid behind a garbage can in the corner of the room, because he thought other students were looking at him. Participant 1 also shared an example of the poor social skills of a student who "gets in arguments with his peers and does not know how to socially interact correctly" and often acts awkwardly with peers. Frequent immature behavior was how participant 3 described one inclusive student with autism. Participant 3 said the student with autism does not seem to recognize peer attention drawn from of his awkward immature behavior.

Demonstrated overly shy behaviors were another social skills issue reported by Participant 5. Quirky, goofy, and socially challenging were also words used by participant 5 when describing social behaviors of inclusive students. Most participants perceived various poor social skills to interrupt learning for their inclusive students.

Lack of focus. Participant 1 reported that an inclusive student with autism often "had trouble staying seated." Participant 3 said one inclusive student was erratic and often had challenges with focusing on class activities. One inclusive student with autism was unfocused and in "his own little world" some days, according participant 4. Participant 7 also reported that an inclusive student with autism will focus on the floor until redirected by teacher interaction.

Follow class rules. All participants noted some way inclusive students with autism struggled with class routine or rules. Participant 2 recalled three inclusive students with autism who seemed to struggle with classroom routine:

It's pretty much a simple class I could say in that we journal every day and we fill

in the blanks and, last year, I had [an inclusive student with autism] in my class

and he just wouldn't journal every day and right now I have two little girls and

they just, every day, they still don't know that they journal so, I am sure there is a

cue out there that I could learn as a teacher.

Another participant mentioned students who often blurted questions instead of

raising a hand. Participant 5 reported an inclusive student copying others' answers on an

assignment where the answers were to be based on individual opinions. Participant 1

included in a journal that one inclusive student had trouble staying seated during

instruction and often talked out of turn.

Anxiety. Participant 2 recalled an inclusive student who did not understand why

others were laughing and asked, 'why are they laughing' when what they were laughing

at had nothing to do with the inclusive student. Participant 2 also mentioned a student so

anxious about having to leave middle school someday that he was unable to finish

assignments. Participant 3 identified perceived anxious behaviors in inclusive students

when the typical routine is disrupted while participant 1 also reported inclusive students

in class demonstrated anxious behaviors specifically related to social interaction with

peers.

RQ3, Emerging Theme and Pattern 3: Teachers Experienced Challenges and Needs Related to Educating Inclusive Students with Autism

Journal and interview data collected from six secondary general education

teachers of inclusive students with autism answered the third research question: What are

the teachers' challenges and needs in educating inclusive students with autism at the local

site? All participants identified various teacher challenges and needs related to educating

inclusive students with autism. The resulting dataset included teachers' responses related

to experienced needs and challenges in the education of inclusive students with autism.

Patterns in the findings contributed to the two themes: Teachers have challenges related

to educating inclusive students with autism and teachers have needs related to educating

inclusive students with autism. Many codes emerged during data analysis related to

specific teacher needs and challenges in educating inclusive students with autism. The

codes related to the two main themes are individually presented in the following sections.

Codes related to RQ3. The codes that emerged and contributed to the determined

theme of experienced needs and challenges are clumped together by challenges and needs

and presented separately. They are as follows:

Teachers of inclusive students with Autism have challenges. The theme

teachers have challenges emerged from data despite no interview question or journal

prompt being directly related to challenges. All participants mentioned having challenges

in educating inclusive students with autism. The specific codes that emerged out of

analysis and examples from the data are included in this section.

Codes related to teacher challenges theme. Codes identified from data analysis

that were related to challenges that teachers had include:

- Lack of professional support during class

- High demand for teacher time from inclusive students

- Lack of understanding of disorder

- Widely varied learning needs in inclusive settings

- Class size

Lack of professional support resources. Two kinds of support needs emerged as a pattern in the data, the need for increased paraprofessional support staff and support through an increase in time to specifically meet instructional needs of inclusive students. All but one participant indicated they are challenged by the lack of support staff involved in the inclusive setting. One participant stated that paraprofessional support is never included in her class so all issues that arise with inclusive students with autism must be handled while attempting to maintain progress with the class as a whole. Participant 7 asserted that an inclusive student with autism would benefit from having an aide who exclusively works one-on-one with the student.

Another participant identified one of the hardest parts of teaching inclusive students with autism is the need to manage class time in a way that allows her to keep teaching others while, at the same moment, providing individual attention to the inclusive student with autism. According to Participant 7, teachers are not able to address the challenge of lack of para professional support in the classroom yet they "simply deal with it" on a daily basis the best they can. Some participants mentioned school special education resources, like paraprofessional availability and class time, seem to be overloaded.

High need for teacher time. The amount of teacher's attention and time needed by inclusive students during class was included as being problematic for most participants. Participants included in the data various reasons for the need for teacher

attention during class. Participant 5 highlighted that inclusive students with autism often demand more attention than typically developing peers. Participant 7 said that inclusive students with autism can need constant redirection to stay focused on tasks which can monopolize teachers' time. Participant 3 included in the journals that inclusive students can need a lot of teacher attention due to frequent unpredictable disruption along with the need for frequent reminders to stay on task. Participants 4 and 5 also both mentioned inclusive students with autism can require increased teacher attention due to unproductive or disruptive behaviors.

Participant 7 mentioned the high-demand for teacher time from inclusive students can cause the whole class to lack progress yet, if they do not provide enough time to the inclusive student he or she is prone to emotional outbursts. Participant 5 stated that a limitation was a lack of time to work with inclusive students during a class. Teacher time is often diverted from the whole class to provide direct one-on-one instruction and reassurance to inclusive students with autism (Participant 3).

Lack of understanding of disorder. All participants included a lack of understanding of autism as a challenge in teaching inclusive students with autism. Lack of understanding was present 34 times, with 31 mentions in the interviews and three times in the journals. Participant 2 mentioned "academically I don't quite understand what it is they can actually do and then sometimes I lack [understanding] so maybe their work, they could maybe do more or do a better job but then I'm in grey area with that," and "well, honestly,... I really don't know what to do sometimes" when it comes to accommodating inclusive students with autism. Participant 4 specifically expressed the

lack of understanding of the varying levels of the disorder as a challenge in knowing how to best challenge her inclusive students:

> It's hard because I have higher functioning kids and lower functioning kids so, yes, I lead by example for all of these kids but I think sometimes the challenge is 'am I meeting the needs of all of these kids', ...even though there is accommodation for all that, some accommodations don't need to be as much for some kids as [students with autism] and I tend to try to find myself in the middle, but, ...am I challenging those kids that are able to achieve more, rather than, ...what I'm doing.

Participant 3 was the only respondent who mentioned having a heightened comfort level teaching students with autism. She attributed this comfort level to years of experience teaching students with autism and from working with many teachers from whom she gained autism-related knowledge. Yet, participant 3 included that general education teachers without the same level of experience as herself may be overwhelmed and not know about the disorder without training and support. This participant also noted she had to implement a trial-and-error method in the past to know what an inclusive student with autism could do.

Widely varied learning needs in inclusive setting. Addressing the wide range of learning needs present in an inclusive class was a challenge in many participants' responses. Participant 4 stated the wide range of learning needs overall in the inclusive setting was a challenge:

I think sometimes it's hard because I have higher functioning kids and lower

functioning kids so, yes, I lead by example for all of these kids but I think

sometimes the challenge is am I meeting the needs of all of these kids, ... even

though there is accommodation for all that, some accommodations don't need to

be as much for some kids as others and I tend to try to find myself in the middle,

but, ...am I challenging those kids that are able to achieve more, rather than,

...what I'm doing.

Participant 7 mentioned that every student with autism is completely different

and teachers need a good understanding of what the student with autism needs to function

in the inclusive environment. Participant 2 also noted that the various symptoms of

autism as a challenge for teachers. Participant 4 stated that the variety in possible autism

symptoms from her inclusive students makes it difficult to know what to expect day-to-

day and to know how to help them during class. She added that sometimes inclusive

students can exhibit violent behaviors one moment during class and then do well in the

next moment. Examples of other symptoms of autism perceived as challenges by

participants included low social skills, lack of focus, and being unorganized.

Class size. When asked in the interviews what could prevent a general education

teacher from meeting the learning needs of inclusive students with autism, class size was

reported as one of the factors. Larger class sizes often result in a greater variety of

learning needs overall. The greater level of need by the class as a whole can impact a

teachers' ability to address the specific autism-related needs of inclusive students.

Participant 1 noted the challenge teachers have using her colleague's situation as an example:

> My colleague ... has, ... 70 kids sometimes and a sprinkling of special needs kids and it's very difficult to, to maintain order.

In addition to maintaining order was the ability to address all learning needs in large classes. Three participants commented that larger class size can limit teachers' abilities to meet individual learning needs.

Participant 7 highlighted class size as one of the hardest parts of teaching in an inclusive classroom. Large class sizes can result in challenges for teachers pertaining to providing greater time and attention needed to address inclusive student needs. Larger class sizes can further be challenging for teachers to allow inclusive students time away from the whole class while continuing instruction for other students in class.

Teachers experienced needs in educating inclusive students. Another pattern I noticed in the data pertained to teachers' needs for educating inclusive students with autism. Secondary general education teachers identified specialized training regarding the disorder, professional support in class, professional collaboration, and increased time to assist students.

Codes related to teacher needs theme. Codes identified from data analysis that were related to needs that teachers had include:

- Increased autism training

- Paraprofessional support

- Collaboration

- Increased time during day to help inclusive students

- More understanding of autism

Increased autism training. Many respondents in the interviews stated a need for an increase in autism-specific training opportunities when asked what may prevent a secondary general education teacher from meeting the academic and behavioral challenges for inclusive students with autism. Participant 1 described the desired training:

A conference to have people speaking to teachers about not only what the spectrum is and the symptoms but how do we reach them at certain levels and what kind of activities really break through, ... because we're are not trained that way.

Participant 3 recalled that autism-related training was not a part of her undergraduate or graduate schooling. According to participant 3, since autism-focused training is often not included in education programs in undergraduate college courses, it is important for schools to include autism-specific professional learning for teachers:

...all these things I learned, I just picked up along the way by listening to people. Nobody ever said in any of my undergrad or graduate classes or any of my places of employment, 'we're going to teach you about autism and we're going to teach you how to teach autistic kids.' Nobody ever, ... it was never an intentional part of my training.

Participant 3 added that training could be in the form of a day-long session where specific strategies for helping inclusive students with autism succeed and scenarios are included would be beneficial for general education teachers. Participant 2 also listed key

concepts needed in autism-specific training as suggestions for effective ways to teach inclusive students and information about autism in general. Participant 4 recommended a need for more hands-on autism-specific training where students with autism are included so teachers can work with them. According to participant 5, there is a need for more autism-specific training about teaching tools and strategy that could be applied in the inclusive classroom while participant 7 mentioned a need to go over the logistics of teaching inclusive students with autism, like the rules related to required paperwork, the education plan, and meeting student needs overall.

Paraprofessional support. When asked in the interview what may prevent a secondary general education teacher from meeting the academic and behavioral challenges for inclusive students with autism, a consensus of the participants concluded that the lack of professional support staff in their inclusive classes. Participant 1 stated that paraprofessional support could provide the individual attention needed for inclusive students with autism to be successful. Participant 5 also responded that paraprofessionals who come in the inclusive room can provide the extra attention inclusive students often need. Several participants noted paraprofessional support would help all students in an inclusive setting in that the main teacher could remain focused on instruction while a paraprofessional addressed the needs of the inclusive student.

Collaboration. There is a need for increased professional collaboration for inclusive teachers of students with autism. Participant 3 noted it would be beneficial to having other professionals to "bounce ideas off" related to teaching inclusive students with autism. Discourse between teachers of inclusive students could make general

education teachers feel more comfortable implementing autism-specific strategies to better help students succeed (Participant 2). Participant 4 asserted that regular on-going communication between all educators in a building related to each student is needed as general education teachers of inclusive students could better help students if teachers have a well-informed notion of individual students' experiences and needs prior to class each day:

> I'm not with [my inclusive student] all day and sometimes I don't understand, ...what, what they are working towards or, ...just understanding goals that [inclusive students] set with, ...numerous people.

> Collaboration is needed between students' case load teachers and general

education inclusive teachers. Participant 5 explained general education teachers and case load teachers need to "pick apart each kid and say, 'hey, how can this best fit them and then go through each of my lessons again', say, 'hey, how can I accommodate this student so they can, ... best learn in my class?'" Collaboration with an inclusive student's family and former teachers was reported as a need by participants, as was the need for collaboration between parents and teachers.

More understanding of autism. An increased understanding of autism was another need reported by participants. A consensus was established that a deeper understanding of symptoms could help general education teachers promote learning for inclusive students with autism. Participant 4 specifically explained that teachers who understand "how these kids work" would be able to choose effective accommodations to

increase learning. Participant 7 included that teachers need a clear understanding of the disorder to address challenges that arise:

> I do know that students do have issues with the sensory aspect...sometimes just a time out can really help just to kind of decompress, ...but maybe [I need] just some more background on how to process with them ... because sometimes I've had students who will get really upset and they were not able to express to me exactly what's upset them. I still try to help them process yet we still need more information on the triggers for students with autism and how to help them process through that.

Participant 2 and Participant 1 each responded to the probing interview question pertaining to teacher needs that there is a need for more understanding of the disorder to be able to better help inclusive students with autism.

Increased time to help inclusive students. The issue of a need for more time emerged in the data related to planning for lessons, collaboration, and time for one-on-one attention during class. Participant 5 expressed a need for increased planning time related to inclusive students with autism:

> When you have a variety of learning styles in your classroom, more time, ...we only have a 42-minute planning period, and we have meetings within that planning period that take away from the ability that I could, ... I individualize some of my lessons.

Participant 5 also stated that more time to collaborate with students' case load teachers would help teachers plan for specific learning needs. Time for collaboration was

also noted by participant 2, "It's a time thing, you know, getting together and talking about the students to learn the things that I need to know, what I need to do in my classroom."

Collaboration can also relate to the teacher-student interaction. Teachers collaborating on students' perceived challenges in different settings can be beneficial to classroom teachers to promote a broad understanding of a student. Teachers aware of an inclusive student's challenges exhibited outside of a particular classroom can be prepared to address specific needs that may transfer into other classes. Time to collaborate would allow such communication related to a student. Yet, more time dedicated to understanding experiences of a student outside of class is difficult, according to participant 7, yet would be beneficial. Participant 7 asserted that educators often lack enough time to do all the things they would like to do.

Evidence of Quality

Procedures used in this study as evidence of quality in accuracy, validity, and credibility of data included verbatim transcription of interview recordings, a transcript review, and one step in the member check process. Participants allowed to review transcriptions in a study is a "a quality control process by which a researcher seeks to improve the accuracy, credibility and validity of what has been recorded during a research interview" (Harper & Cole, 2012, p. 510). Participants in this study had the opportunity to provide e-mail feedback regarding the accuracy of their transcribed interview responses. During the transcript review one participant provided clarification of a term used in one of her responses. All other participants found no inaccuracies in the

transcription of their interview data. No participants requested changes to themes presented during the transcript review process.

One step in the member checking process was implemented after data were analyzed. Participants were e-mailed the codes and themes that emerged during the segmenting-and-labeling process of data analysis. Each participant was sent the codes and themes for their own individual interviews and journals only. They were instructed to provide feedback in an e-mailed response related to the accuracy of the codes and themes. Each participant responded via e-mail that the codes and themes were accurate.

Triangulation of data was another step taken to ensure quality of data. Fielding (2012) explained triangulation of data as "a source of convergent validation" (p. 124) and comparison of data from different sources to have more valid findings in a study. Incorporation of multiple data sources in a case study also promotes accuracy in a case study's findings (Houghton et al., 2013). Triangulation of interview data and journal data occurred in this study to identify themes and patterns of participants' perceptions. Triangulation occurred by comparison of the two kinds of data collected for this study. Deeper understanding can result when rich, comprehensive, and well-developed findings are established from the collection and comparison of two forms of data (Cohen & Crabtree, 2006).

A researcher bias journal was maintained throughout the study to control for bias. According to Houghton et al. (2013) this step in a study can provide to readers transparency of the researcher's personal interests, experiences, and theoretical

perspective which may influence data. Credibility of qualitative inquiry is impacted by researcher's self-awareness throughout the research process (Houghton et al., 2013).

A data collection log was also kept in this study to promote dependability and reliability. A study's trustworthiness can be assessed based on examination of the steps used in data collection and how the end product was achieved (Houghton et al., 2013). The data collection log in this study served to document detailed steps taken by the researcher and by participants throughout the entire process.

Validity of this study was further enhanced in several ways. For example, interview questions were structured to prompt in-depth responses from participants to answer the three overarching research questions in this qualitative case study. Adherence to specific procedures for data collection and for analysis also served to enhance reliability. Consistency in the coding and labeling process and emerging themes and patterns across all data were used to enhance reliability.

Summary

Several themes and subthemes related to teachers' experiences with educating inclusive students with autism and the academic and behavioral challenges of those students were revealed in this qualitative case study. The main themes that emerged from the data included the perceived academic challenges of inclusive students with autism, the perceived behavioral challenges of students with autism, the challenges secondary mainstream teachers face when educating inclusive students with autism, and the needs of secondary mainstream teachers of inclusive students with autism. There were several sub-themes established for each main theme. Overall, this section included details on

participants, data collection steps, data analysis, and findings. Interpretation of the

findings, conclusions, and recommendations will be presented in Section 5.

Section 5: Discussion, Conclusions, and Recommendations

Overview of Study

In this section, I include an interpretation of findings, conclusions, implications for social change, researcher reflections, recommendation for action and future study, and a concluding message. This qualitative case study was conducted to explore teachers' experiences with and the academic and behavioral challenges of inclusive students with autism at one Michigan middle school. Inclusive students with autism at the research site were performing lower than typically developing peers.

Qualitative research was used as it was fitting for exploration of how teachers perceived the academic and behavioral challenges of inclusive students with autism through responses to open-ended questions in semistructured interviews and prompt-guided journals. The data from the semistructured interviews were the first to be analyzed. Common concepts and emerging themes were identified for each participant's responses. The same process was implemented for data analysis of the journal data. Patterns in the data's emerging themes were identified based on similar characteristics.

Interpretations of Findings

Included in this section are interpretations and practical application explanations of the findings that were included in Section 4. Overall, from the findings it was noted that secondary inclusive students with autism had academic and behavioral challenges at the local research site. It was also evident in the findings that secondary mainstream teachers of inclusive students with autism experienced challenges and needs. The

conclusions are accurately associated with the three research questions that guided the data collection and analysis of this study.

Research Questions

The conclusions from the findings serve to answer the three research questions at the foundation of this case study:

RQ1: What are the teachers' perceived academic challenges of inclusive students with autism at the local research site?

RQ2: What are the teachers' perceived behavioral challenges of inclusive students with autism at the local site?

RQ3: What are the teachers' challenges and needs in educating inclusive students with autism at the local site?

Interpretations of Findings Related to RQ1

According to the findings, inclusive students with autism are challenged in various areas of their schooling. Academic challenges in the findings included inclusive students' lower cognitive abilities compared to typically developing classmates, understanding content, maintaining an adequate pace while working on tasks, and a need for increased level of teacher attention during class. Interpretations of the findings from the data related to each emergent theme are explained, supported by evidence from the data, and connected to the literature in the following section.

Content challenges and cognitive processing. Two areas of perceived academic challenge for inclusive students with autism that emerged from the data included the level of understanding of class content and deficits in cognitive processing. Abnormal brain

functionality of inclusive students with autism can contribute to the challenges students may demonstrate in mainstream settings (Autism and Developmental Disabilities Monitoring Network, 2014). Participants' perceptions of inclusive students' challenges with class content were consistent with the findings in a study related to cognition by Chan and Naumer (2014), in which reported academic challenges of inclusive students with autism aligned with ideas in the weak central coherence theory. One key cognitive challenge reported by Chan and Naumer to align with the weak central coherence theory included a weakness for individuals with autism in making connections out of bits of meaningful information.

Content challenges for inclusive students with autism can be further related to the cognitive tendency for poor comprehension during reading-based assignments despite demonstration of strong reading accuracy (Aljunied & Fredrickson, 2011a). Inclusive students can often provide rich detail of a story yet not recall the overall storyline (Aljunied & Fredrickson, 2011a). Class content for inclusive students can moreover prove challenging as the ability to generalize and transfer concepts between contexts is difficult (Aljunied & Fredrickson, 2011b). The dominant cognitive preference for inclusive students with autism for narrow interests and repetitive patterns can also contribute to challenges in academic content (Frith, 2012). According to Olu-Lafe et al. (2014), content could be an academic challenge for inclusive students with autism because they often demonstrate a narrow scope in cognitive processing preferences and focus on details versus the coherent whole. One participant recommended that one way to help inclusive students with class content was to visually present information through a

handout along with verbal presentation. One practical application of this interpretation of the findings could be teachers' modifications to class content delivered during instruction by providing supplemental instruction accommodations, such as visual aids, ahead of time for inclusive students.

Overall pace of progress. Participants' perceived challenges of inclusive students with autism pertaining to pace are connected to cognitive processing challenges and understanding of content challenges. The reported academic challenges for inclusive students pertaining to their abilities to maintain pace in progress aligned with concepts of the executive dysfunction theory of autism, such as the ability to exhibit independent goal-focused behaviors or notice when a shift of ideas or topics occurred during class (Gobbo & Shmulsky, 2014). Some participants stated that inclusive students with autism often did not process class content as readily as their typically developing peers. Inclusive students with autism could be confused by verbal directions and progress at a slower rate when compared to typically developing peers (Gobbo & Shmulsky, 2014). Inclusive students may also process course content more slowly than typically developing peers due to an increase in time needed to process bits of information and to form global constructs from input (Olu-Lafe et al., 2014). Individuals with autism may struggle to track during a shift in ideas during class instruction or identify when key strategies have changed (Gobbo & Shmulsky, 2014).

Maintaining pace during assignment completion was another challenge stated by participants. Many participants reported that inclusive students required additional teacher attention to maintain pace during tasks and to stay focused in class. This finding

was consistent with outcomes from a study by White (2012), in which the author posited that the short working memory of students with autism may result in the need for directions to be repeated multiple times in order to maintain pace. Another accommodation teachers can provide for inclusive students with autism to address the academic challenge of keeping pace during teacher instruction is the provision of concepts to be included during instruction ahead of time. This could allow the student the additional time required to process the concepts.

High need for teacher time. All participants noted inclusive students with autism required a greater amount of teacher attention to function in a general education setting than did typically developing peers. The greater need for teacher attention from inclusive students with autism means mainstream teachers use more class time on individual student needs and less time on instruction for the whole class. This outcome is consistent with findings from a study by White (2012), who noted students with autism needed frequent repeated directions from teachers due to short working memory typical of the disorder. Inclusive students with autism can often become distracted by the typical inclusive setting, which can result in the teacher needing to repeat directions.

Another outcome from the findings was, according to teacher perceptions, inclusive students could become more easily overwhelmed than peers by the inclusive setting and class work. Becoming overwhelmed can result in an increased need for teacher attention. This situation aligned with Cameron (2014), who posited that general education teachers of inclusive students with autism often must spend more individual time with the inclusive students during class than neurotypical peers. Four out of six

participants reported that their inclusive students often monopolized their time and needed additional attention during class for various reasons. A consensus of participants stated that added paraprofessional support in the classroom could address the high need for teacher attention for inclusive students with autism.

Interpretations of Findings Related to RQ2

I explored secondary general education teachers' perceptions of the behavioral challenges of their inclusive students with autism in the second research question. According to the findings, inclusive students with autism have challenges in various behavior related areas of school, such as controlling emotional outbursts, being organized, and socialization with peers. My interpretations of the findings from the data related to behavior challenges are explained, supported by evidence from the data, and connected to the literature in the following section.

Poor organization. Based on results from the data, I found poor organization-related behaviors were a challenge for inclusive students with autism. All participants reported that their inclusive students exhibited some form of organization-related challenges, which aligned with the literature. For example, Kunda and Goel (2011) postulated that symptoms of autism are related to concepts in the theory of executive dysfunction, such as impairments in higher-level cognitive processing abilities necessary for independent goal-oriented activities. Also, students with autism have limited mental flexibility, so it is difficult for them to set-shift and notice changes in key ideas or activities (Gobbo & Shmulsky, 2014). This could contribute to the ability to stay organized. For example, one participant stated that she had to help an inclusive student

stay organized by providing before each class a step-by-step guide of what to do during independent work time.

Outbursts. Disruptive behavioral outbursts are challenges perceived by teachers of inclusive students with autism. The majority of participants included some form of behavioral disruption in the data. Reported outbursts included sudden crying, running around room and then hiding behind a garbage can, and loudly exclaiming "I can't do this" over and over. This perceived challenge was consistent with concepts from Hovik et al. (2014), which included that the executive dysfunctions common in individuals with autism are associated with poor inhibitions. Inclusive students with autism may not know or care about appropriate scripts for behavior in school situations (White, 2012). The consideration of consequences prior to behavior and thoughts of alternative behaviors to accomplish something are weakened in students with executive dysfunctions, such as autism (Aljunied & Fredrickson, 2011b). Certain behaviors connected to symptoms of autism, like a lack in age-appropriate mental flexibility, can result in a negative impact on school experiences for inclusive students (Venegas & Davidson, 2015). Cohen et al. (2010) added that outbursts exhibited by inclusive students with autism can result from transitions during the school day and changes to routine. Examples of challenges for inclusive students due to change in routine and transitions were noted in the findings of this study.

Poor social skills. The lack of adequate age-appropriate social skills was perceived as a challenge by teachers of inclusive students with autism. My interpretation from the data is that these social inadequacies manifested in challenging behaviors that

can hinder learning and typical interactions with peers. Lack of participation in group assignments during class and awkward social interactions with peers sitting nearby are two examples of perceived social inadequacies reported by participants. My interpretation is consistent with literature. For example, Pina et al. (2013) postulated that the ability to communicate with others is impaired in individuals with autism and the inability to interpret contextual clues, understand utterances, and recognize others' feelings can result in negative behaviors in mainstream settings. Able et al. (2014) further posited that the ability to engage in age-appropriate socialization is a behavioral deficit of autism. Poor social skills can limit success during group work with peers (Gobbo & Shmulsky, 2014). Poor language and communication skills accompanying the disorder was further supported by the findings from a study by Ryan et al. (2014).

Anxiety. Results from the data revealed that anxiety can present behavioral challenges for inclusive students with autism. Some participants reported anxious behaviors hindered learning for inclusive students with autism. Reported anxious behaviors included overly paranoid about peers looking at them or laughing at them, self-doubt on class tasks, and worry about future transitions in school. My interpretation related to this finding is that inclusive students are more anxious than typically developing peers in mainstream settings due to certain social and cognitive deficits related to autism. This interpretation is supported by literature. For example, students with autism often do not know how to adapt to a change in routine, transitions, and demands in various settings (Lee, 2011), which may manifest in anxious behaviors. One participant shared an example where a student became anxious over the directions of the

assignment as he did not understand what to do. Anxiety for inclusive students with autism can originate from the lack of ability to process and understand social cues and arbitrary rules in a mainstream setting (White, 2013). It could also result from feeling overwhelmed during class due to poor mental flexibility that is common with the disorder (Cohen et al., 2010).

Poor focus. Data showed that inclusive students with autism lacked the ability to focus during class. My interpretation of this finding is that inclusive students' abilities to focus in class relate to their primary cognitive processing preference, which is based on concepts in the weak central coherence theory and executive dysfunction theory of autism. For example, a key idea in the weak central coherence theory that relates to focus is based on the decreased level of coherence between the various brain regions where meaningful global connections are made (Chan & Naumer, 2014). Neuroimaging assessments showed that regions of the brain related to processing information in a global context appeared weaker in individuals with autism than neurotypical individuals (Frith, 2012). The possible mismatch in connectivity between the frontal lobes of the brain and the posterior regions responsible for processing information may contribute to cognitive styles that result in challenges, like focus, for students with autism (Frith, 2012).

Interpretations of Findings Related to RQ3

Upon completion of my analysis for the third research question, I discovered two themes: teachers of inclusive students with autism have specific needs and teachers experience instructional challenges. My interpretations of the findings based on the two

themes and respective code are described, supported by evidence from the data, and connected to the literature in the following section.

Lack of support during class. The lack of paraprofessional support in inclusive classes emerged as a challenge for teachers and the need for increased paraprofessional support staff in class emerged as a specific teacher need. My interpretation of findings related to this theme is that added paraprofessional support is a significant need for general education teachers to better educate inclusive students with autism. One participant told me that paraprofessional support is never a part of the class yet students would most likely benefit from included paraprofessional assistance. My interpretation aligned with findings from a study by Lindsay, Proulx, Thompson, and Scott (2013), which included that teachers of inclusive students with autism often feel quite strongly that paraprofessional staff can benefit students. Reliance on paraprofessional staff is often considered necessary by teachers for adequate support in general education classrooms with inclusion students (Giangreco, 2013). Cameron (2014) postulated that general education teachers who received assistance from paraprofessionals in inclusive settings increased learning outcomes for inclusive students. In addition, collaboration between general educators and paraprofessional support staff can further benefit inclusive students' success in class (Mackey, 2014). Findings from Saddler (2014) also aligned with my interpretation that paraprofessional staff in general education classrooms can contribute to positive academic and behavioral progress in inclusive students with autism.

High demand for teacher attention. I found that there is an increased need for teacher attention during class for inclusive students with autism. Overall, participants

reported that inclusive students required additional attention and time to participate in general education settings. For example, one participant explained that inclusive students with autism often monopolize class time by needing extra teacher attention on assignments and behavioral redirection. Another participant echoed that inclusive students need frequent one-on-one attention which lowers teacher focus on other students in class and results in a challenge for the teacher to maintain progress in instruction. This interpretation is consistent with the literature. For example, Cameron (2014) posited that inclusive students with autism often require more time from their teacher during class than their neurotypical peers due to the heightened diversity in learning needs related to the disorder.

  Lack of understanding of autism. The general education teachers in my study revealed that they possess a lack of understanding of autism and poor professional knowledge of the instructional strategies connected to the disorder. Teachers of inclusive students with autism are challenged by their lack of understanding of autism and autism-specific teaching strategies in that it limits their abilities to address student needs. These challenges are aligned with findings in professional literature. Crosland and Dunlap (2012) posited that general education teachers of inclusive students with autism are often challenged by a lack of knowledge on how to best meet the academic and behavioral needs of their inclusive students. Adding diverse symptoms of autism can further present a challenge for general education teachers to meet a wide range of learning needs (Fleury et al., 2014). General education teachers often report being underprepared for meeting the

wide range of academic and behavioral needs of inclusive students with autism (Able et al., 2014).

      Wide range of learning needs in inclusive settings. Another teacher challenge that emerged from the findings was related to the varied learning needs present in inclusive settings when teaching students with autism. One participant specifically noted there is such a varied mixture of learning needs in inclusive classes that can put extra pressure and stress on the teacher. Another participant also contributed that the wide range of learning needs in an inclusive setting is often challenging for general education teachers. This challenge is supported by findings in a Cameron (2014) study, which posited that the heightened diversity of learning needs that are often present in inclusive classes are seldom met my conventional teaching strategies yet teachers lack understanding of the unconventional methods that could help.

      Class size. Based on participant perceptions, I concluded that larger class sizes are more challenging for secondary general education teachers of inclusive students. A common concern among participants that pertained to class size was the ability to meet the needs of the inclusive student, while still meeting the needs of the other students in the class. Cameron (2014) postulated that larger inclusive classes are problematic for teachers as they result in greater variations in the learning needs that must be addressed. Lindsay (2013) supported that the larger class sizes are a particular problem for secondary general education teachers of inclusive students with autism. There are more instructional and behavioral needs to address with the larger number of students overall at that level yet inadequate time to do so. One participant explained that class size for some

subjects can be close to 70 children, which can be challenging when inclusive students with autism have increased need for teacher attention.

Increased training is needed. Participants described the need for increased professional autism-related training as a significant need to better help inclusive students with autism. Participants explained current training opportunities offered in their building and district related to autism occur once a year and are general to all disabilities. Although some participants reported that the current level of district training was somewhat helpful, the need for more frequent, autism-specific professional training was evident in the data. Participants reported more training would enable them to address the learning needs more effectively, which is consistent with professional literature. For example, findings from a study by Whitmer (2013) postulated that adequate professional knowledge of autism and evidence-based practices for teaching inclusive students with autism could have a positive impact on success for students diagnosed with the disorder. An increase in autism-specific training for general education teachers is further supported by the findings by Denning and Moody (2013), who reported that an increase in prevalence of inclusive students with autism in schools heightens the need for general education teachers to understand strategies connected to the students' learning needs. My interpretation related to this finding is further supported in literature by Thornton (2011), where it was concluded that greater autism-specific training is key for general education teachers of inclusive students to address student challenges and contribute to more successful inclusive settings.

Increase in time for collaboration is needed. My interpretation that dedicated time for collaboration was a need for general education teachers of inclusive students with autism is aligned with professional literature. For example, time for education professionals to focus on elements related to the inclusive culture, like teacher training and collaboration is essential in the findings of work by Symes and Humphrey (2011). Collaboration time is further needed for general education teachers to work with each other, special education professionals, and administrators to plan accommodations, assess practices, and problem solve for inclusive students with autism (Sanahuja Gavalda & Qiyi, 2012). Collaboration is best achieved when administrators allocate useful resources, like time through adjusted schedules for teachers and information to be applied during discussions.

Sanahuja Gavalda and Qiyi (2012) also highlighted that multi-level professional collaboration is a significant factor in the success for inclusive students with autism. Multi-level collaboration involves educators, leadership, and parents working together. Multi-level collaboration is beneficial as individuals with varying viewpoints and expertise can contribute information and support. This kind of collaboration is especially important in the education of inclusive students with autism due to the complexity of the disorder and the varied educational needs that are often present in the student (Sanahuja Gavalda & Qiyi, 2012). Even though established time for professional collaboration related to inclusive students with autism is often a challenge for general education teachers due to often-overloaded schedules (Kucharczyk et al., 2015), it is crucial that multi-level professional collaboration happen (Sanahuja Gavalda & Qiyi, 2012).

Conclusions for RQ1, RQ2, and RQ3

The following conclusions were drawn logically from the findings and triangulated with concepts from the literature. The conclusions encompass the concepts that emerged from data related to themes that address RQ1, RQ2, RQ3, and the discrepant themes. Support from the literature and evidence from the data are also incorporated.

Conclusion 1: Teachers of inclusive students with autism can more successfully address student academic and behavioral challenges with increase autism-specific knowledge from training. Based on the findings from RQ1, RQ2, and RQ3, I concluded that secondary general education teachers need increased autism-specific training to address the academic challenges often presented by inclusive students with autism. Academic challenges revealed in the data included struggles to maintain pace with peers, understanding of the content presented in class, becoming overwhelmed easier than typically developing peers, and often a need for increased teacher attention to perform tasks. The behavioral challenges of inclusive students that emerged from the data were disruptive outbursts, poor organization skills, and poor social skills. Participants noted that they lack of ability to address inclusive students' needs in a typical class setting because they do not understand the disorder or specific strategies related to helping inclusive students with autism in their classes. Participants' perceptions of inclusive students with autism, paired with professional literature reviewed for this study, contributed to the conclusion that increased professional understanding of autism can help teachers address inclusive students' needs.

This conclusion is aligned with peer-reviewed literature. For example, Whitmer (2013) supported that adequate professional understanding of autism and the evidence-based skills related to teaching inclusive students with autism can have a significant impact on the learning outcomes for secondary students diagnosed with the disorder. The increased prevalence of inclusive students with autism has created a growing need for general education teachers to know how to address a wide range of learning needs related to the disorder (Denning & Moody, 2013). There is, moreover, a heightened need for general education teachers to have on-going autism-specific training in the wide range of evidence-based practices related to autism due to the trend toward inclusive placement of students with the disorder (Morrier et al., 2011). General educators often note being underprepared and feeling challenged when it comes to the wide variety of learning needs of inclusion students with autism (Able et al., 2014). College graduates of teacher programs often enter the workforce with little or no autism-specific training (Aydin & Kuzu, 2013). Thornton (2011) posited that increased autism-specific training is a key component for general education teachers of inclusive students to overcome challenges and promote more successful inclusive programs.

Participants' responses supported the conclusion that there is a need for increased autism training. For example, participant 4 stated it is difficult for teachers to know how to help students when they do not understand how the inclusive child's mind functions in a typical setting and the symptoms related to the diagnosis. Two participants explained that training can help teachers better understand the abilities of inclusive students with autism and equip teachers to do a better job helping inclusive students achieve.

Based on the conclusion presented above, I recommend on-going autism-specific teacher training opportunities. Semiannual professional development seminars focused on autism-specific teaching strategies, symptoms of autism, and collaboration suggestions is an example of training that could be supported by the district leaders and provided for all educators. This kind of training would allow general education teachers to build on existing understanding and provide avenue for professional dialog regarding best practices for teaching inclusive students. On-going training is crucial as secondary inclusive students with autism need mainstream educators who have adequate understanding of autism-specific strategies in order to be successful in general education settings (Odom et al., 2014). On-going training is further significant as general education teachers of inclusive students with autism are often challenged by a lack of knowledge on how to best meet the academic and behavioral needs of their inclusive students (Crosland & Dunlap, 2012). Autism-specific training is further needed as the diverse symptoms of autism can present a challenge for general education teachers to meet a wide range of learning needs (Fleury et al., 2014). According to Hay and Winn (2012), educators across grade levels require autism-specific training to best address their inclusive students' needs, yet secondary general education teachers warrant increased training to further address the heightened complexity of secondary content and the social factors that can influence success in secondary settings.

Districts could host small-group instruction through break-out sessions during an autism-specific conference each school year. More support from district leaders in the form of provided time for autism-specific training is one way general education teachers

of inclusive students with autism can overcome certain challenges related to addressing inclusive students' needs (Morrier et al., 2011).

Conclusion 2: Various supports and resources are needed for secondary general education teachers of inclusive students with autism to overcome challenges and meet the needs of teaching inclusive students. There were several noted teacher challenges and needs that emerged from the data in this study. Some on the key supports that teachers reported to need in order to address the needs and challenges include an increase in paraprofessional staff, provided autism-specific training, and time worked into schedules for collaboration and planning. This conclusion is consistent with findings from Morrier et al. (2011) who posited that general education teachers of inclusive students with autism often lack the supports and resources critical to address the learning needs of their students. I conclude in the following section that the leadership provision of an increase in time in teachers' schedules for autism-related training, more collaboration opportunities, planning, plus added paraprofessional staff are needed in inclusive classrooms.

Adequate on-going autism-related training was one resource need that emerged and contributed logically to this conclusion. This need was highlighted in conclusion one yet also overlapped into ideas related to this conclusion. The conclusion that there is a need for increased leader support of training resources is consistent with findings from an Able et al. (2014) study where general education teachers often report feeling challenged due to being underprepared for meeting the wide range of academic and behavioral needs of inclusive students with autism. Whitmer (2013) also posited that adequate autism-

specific training can have a significant positive effect on the learning outcomes of inclusive students with autism. Leadership support for included time for autism training is imperative for general education teachers to address student challenges and promote successful inclusion practices (Thornton, 2011). One practical application of this conclusion would be for increased semiannual autism-focused professional development opportunities at the research site as on-going training in the wide range of evidence-based practices related to autism is needed to help teachers address inclusive students' needs (Morrier et al., 2011).

Another idea that emerged from the data that contributed to this conclusion pertains to the need for leadership to support an increase in paraprofessional resources in inclusive classrooms. Participants reported that they often face the challenge of a lack of help from paraprofessional staff during class. Assistance from paraprofessional staff is often considered a necessary resource by general education teachers of inclusive classes with students with autism (Giangreco, 2013). It was stated by respondents that students with autism struggle to keep pace in class without support staff. One participant explained that a paraprofessional in class can help inclusive students function in a general education class by providing individual attention as needed. Paraprofessionals can assist in the positive academic and behavioral progress for inclusive students with autism as they are able to focus on the individual student needs as they arise (Saddler, 2014). Paraprofessional staff are often needed to decrease the time that general education teachers report having to spend helping their inclusive students during class (Cameron, 2014). Hence, there is a need for increased paraprofessional resources in general

education settings to lower the sense of challenge reported by participants and improve the quality of instruction for inclusive students with autism (Cameron, 2014).

A practical application of this part of conclusion 2 would be for school leaders to regularly assess the level of need for provision of paraprofessional resources by communicating with the general education teachers and then supporting an increase of paraprofessional staff based on the teacher-reported need. Further, general education teachers of inclusive students should have opportunity for frequent dialog regarding need for paraprofessionals in their classes as the need changes based on individual students.

Another part of this conclusion pertains to leadership support for increased time for collaboration. Leaders' support for an increase in time allowed in general education teachers' and other educational professionals' schedules to collaborate is a need that was supported in the findings. Evidence provided by participants that supports this included a reported lack of time in schedules to focus on planning for meeting the specific needs of inclusive students with autism. Whitmer (2013) echoed that more dedicated time in teachers' schedules is needed for teachers to focus on inclusive students with autism's needs, like through collaboration. Teachers' schedules are often too overloaded for collaboration (Kucharczyk et al., 2015). Yet, time for education professionals to focus on elements related to the inclusive culture in a building is essential (Symes & Humphrey, 2011). Moreover, teacher engagement in multi-level professional collaboration, which involves educators with varying expertise and viewpoints contributing to discussions, is central for inclusive students with autism success (Sanahuja Gavalda & Qiyi, 2012). A

practical application of this conclusion would be to restructure teachers' schedules to incorporate additional time for collaboration during their planning times.

Leader support for an increase in the allowed time for planning is also a conclusion related to time. Evidence from the data supported there is need for more planning time for teachers of inclusive students with autism at the research site. This conclusion is aligned with findings of a study by Sanahuja Gavalda and Qiyi (2012) where it is posited that teachers of inclusive students need increased time to problem solve, plan accommodations, and assess practices for their students with autism. Cameron (2014) also asserted that adequate time during the day is a challenge for general education teachers because students with learning difficulties need more one-on-one attention to be successful. Hence, the need for leadership to support an increase in time for teachers of inclusive students to plan specifically for their inclusive students is needed.

It was noted in the data that there is not enough time worked into teachers' daily schedules to plan for and accomplish all that needs to be accomplished to meet the needs of their inclusive students. Participants stated they often have to take time to modify instruction and assignments for their inclusive students with autism. A practical application of this conclusion would be restructure teachers' schedules to incorporate additional minutes in planning periods to allow general education teachers time to address planning needs related to inclusive students with autism.

Implications of Social Change

In this study identified the perceived academic and behavioral challenges of secondary inclusive students with autism. This study has several implications for social change. The first implication is establishing an increase in autism-specific professional knowledge through semiannual professional development seminars for general education teachers to ultimately improve quality of inclusion practices for students with autism. Administrative leaders would be responsible for contributing to this change through support of increased autism specific training for secondary mainstream teachers of inclusive students with autism. Mainstream teachers would be responsible for implementation of the strategies in their classes. Inclusive students with autism may benefit with improved learning opportunities and ultimately more positive post-secondary quality of life.

The second implication of social change is increased learning opportunities for secondary inclusive students with autism. This benefit could come from general education teachers of inclusive students who gained an increased understanding of how to best educate inclusive students with autism. A heightened understanding of autism and related teaching strategies could result in benefits to inclusive students with autism through increased learning opportunities during secondary schooling. They could further benefit from this implication from more positive secondary experiences overall.

Another implication of this study is the potential to influence post-secondary lives of inclusive students with autism. Middle schools and high schools currently fail to address those challenges and adequately prepare inclusive students with autism for later

in life (Wehman, 2014). General education teachers with more specialized training in autism-specific evidence based practices could adequately address the challenges of inclusive students with autism and better prepare them for post-graduation (West et al., 2012). Before students with autism graduate from high school, they would benefit from instruction that includes advancement in post-secondary schooling, employment opportunities, and level of independence, are all impacted by the nature of inclusion programs for secondary students with autism (Test et al., 2014). Findings from a study by Knapp et al. (2009) also supported that experiences in secondary education can prove critical for the futures of inclusive students with autism. Teachers and leaders at the research site could use the heightened understanding of the perceived challenges of inclusive students with autism and their general education teachers to help change inclusion practices and teacher training.

Members in the research site community could further experience positive implications of social change as a result of this study. Challenging behaviors exhibited in secondary schooling could carry into adulthood for students with autism if left unaddressed during secondary school years (Koegel et al., 2012). These behaviors can impact those in the local community of individuals with autism. Findings of this study could result in increased understanding of ways to best educate secondary inclusive students with autism and ultimately influence post-secondary factors that often impact the quality of engagement those students have with community members. For example, Test et al. (2014) asserted that career development, opportunity and desire for leisure activities, and self-determination can be important areas related to community

involvement in adulthood for individuals with autism. Mainstream teachers are responsible for the implementation of appropriate evidence-based instructional strategies that can ultimately provide inclusive students with a wide range of skills needed for positive post-secondary success in the community and beyond (Test et al., 2014).

Further implications of this study on community relate to the level of success of post-secondary inclusive students with autism on national assessments that track employment rates of individuals with learning disabilities. The National Longitudinal Transition Study-2 is an example of an assessment that tracks employment rates of recent graduates with learning disabilities (Test et al., 2014). Increased post-graduation assessment scores of inclusive students with autism could be a beneficial result pertaining to the findings of this study that leads to social change. Assessed scores could contribute to informed decisions related to strategy and program development for employers, college officials, and community leaders in decision making related to individuals with autism.

Another change that could result from the findings of this study is provided information pertaining to heightened awareness of autism challenges leading to more informed decisions for all levels of educational and political decision makers. The lack of adequate preparation for post-school lives of individuals with autism is an international problem (Taylor & Seltzer, 2011). The global economy is impacted by the outcome of secondary education of students with autism (Taylor & Seltzer, 20110). The change related to this implication could come from national and global committees during policy-related decisions regarding autism education. Inclusive students with autism

around the world could benefit from this social impact on leaders and policy makers. The benefits could be improved contribution to the global economy.

Recommendation for Action

In this study, I explored the perceived teachers' needs and challenges in educating inclusive students along with the academic and behavioral challenges presented by secondary inclusive students with autism. The results of this research provided teachers and district administrators and with in-depth data regarding perceived academic and behavioral challenges of inclusive students with autism. I recommend administration provide general education teachers with semiannual autism-specific training related to strategies and autism understanding that they can implement in the inclusive setting. Administrative support of ongoing autism-specific training can help general education teachers of inclusive students with autism overcome challenges (Morrier et al., 2011). West et al. (2012) further supported that on-going teacher training in autism-specific evidence-based strategies at the secondary level can lead to more positive post-graduation outcomes for inclusive students with autism. According to Thorton (2011), autism-specific training could positively contribute to teachers' performance related to addressing the learning challenges of inclusive students, like the challenges that emerged in the data of understanding content, cognitive deficits, and keeping pace. Parents, teachers, and policy makers should pay attention to the nature of and frequency of autism-specific training opportunities for general education teachers of inclusive students with autism.

Teachers at the research site desired increased time for professional collaboration and increased time to plan for the needs of inclusive students. Hence, it is recommended that more time be allotted in general education teachers' schedules for professional collaboration and preparation of lessons regarding inclusive students with autism. Established time for professional collaboration can be an effective tool for general education teachers of inclusive students with autism to address challenges (Able et al., 2014). Collaboration can provide opportunity for general education teachers of inclusive students with autism to work with various stakeholders to address the unique challenges of those students (Whitmer, 2013). Symes and Humphrey (2011) also supported that professional partnerships are essential for general educators to be able to adequately address challenges of inclusive students with autism. Further, there should be on-going opportunity for general education teachers to communicate to administration the specific needs related to education of inclusive students with autism.

I further recommend paraprofessional staff be included in inclusive classrooms based on main general education teachers' communicated needs. All participants in this study highlighted that inclusive students with autism require a greater amount of attention to function in an inclusive setting than do typically developing peers. It is recommended paraprofessionals be available and added for general education teachers who deem support necessary to accommodate certain inclusive students with autism. White (2012) posited that students with autism need frequent attention from teachers due to the symptom of a short working memory typical of the disorder. Cameron (2014) further asserted that general education teachers of inclusive students often spend more individual

time with students with autism than with typically developing peers. Added paraprofessional support staff in the classroom could help the general education teacher accommodate the heightened need for teacher attention from inclusive students with autism.

I will disseminate findings of this research to local administration and educators within 4 weeks of publication. The findings will be shared through an e-mailed document to the administrator to distribute to all staff at the local research site. In addition, as promised during data collection and participant recruitment efforts, each participant will individually receive a copy of this study from me through e-mail. Sharing the results could result in new positive actions to address the needs of inclusive students with autism at the research site.

Recommendations for Further Study

In this qualitative case study, I explored the perceptions of secondary general education teachers of inclusive students with autism. Based on the findings of this study, much more is left to discover regarding challenges of inclusive students with autism. I only investigated middle school general education teachers. I recommend the replication of this study occur at the elementary and high school levels to know if similar patterns in the data are present. I further recommend this study be replicated in other geographic areas of the country with different demographics than that of the research site as the disorder is wide spread and impacts learners in diverse settings with varying educational resources. This could contribute to a well-rounded understanding of the problem of study.

One area of research that could result from the findings of this study include the level of impact that autism-specific professional training seminars at the research site can have on academic achievement of secondary inclusive students with autism. A quantitative method could be implemented to examine the effect of teacher training. A correlation of training level of general education teachers and standardized test scores for inclusive students with autism could be conducted.

Another area of study that could stem from the questions that arose once data were collected and analyzed in this study pertains to exploring types of collaboration and the perceived impact on general education teachers' performances in addressing the challenges of inclusive students with autism. There are various forms of professional collaboration. A study qualitative case study could be conducted to discover teacher perceptions of collaboration for inclusive students with autism.

Summary and Conclusion

My experiences throughout the study process revealed several areas that required ongoing consideration. For example, personal biases were addressed throughout the study process. My personal biases related to how schools are working with my elementary-aged son with autism and my perception of the level of support general education teachers need to help my son be successful. My personal bias was that general education teachers of inclusive teachers would be very willing to participate in a study related to understanding inclusive students with autism so that they could better educate them. I maintained a journal where I noted personal biases and preconceived ideas related to studying mainstream teachers who educate students with autism.

The preconceived ideas I had that related to the research process pertained to participant selection and gathering data. I entered the research process with the notion that participant selection would be more well-received by potential participants. Only six participants out of the possible sample responded positively to the invitation. Also, data collection was more tedious than I had preconceived it would be.

Participants may have been affected by knowing I currently work as an administrator at an autism center. I disclosed this information in the consent form provided to each participate and reiterated it again at the start of each interview. My position at the autism center may have intimidated participants and had an effect on responses. Yet, I assured participants that I controlled for bias by maintaining a researcher journal to identify and consider these possible areas of bias.

I have experienced a change in thinking as a result of the study. I better understand and respect the wide range of emotions that secondary mainstream teachers can experience when working in an inclusive classroom with students with autism. I have grown even more passionate about the need for mainstream teachers' increased training in autism-specific practices. I have also changed my thinking about the role that social behavioral programs can play for inclusive students with autism. Much of the data reported by participants relates to social behavioral elements of student behavior. Therefore, I now recognize the significance for programs like those for inclusive students with autism and their teachers. I also now value the long-term impact that an increased understanding of challenges of inclusive students with autism and better trained teachers can have on students' futures beyond the classroom.

As the prevalence of students with autism in mainstream classrooms has increased in recent decades, the frequency and kinds of mainstream teacher training should also increase to face student challenges. Mainstream classroom teachers of inclusive students with autism and the inclusive students themselves could both experience positive social change from autism-specific teacher training. The benefits from autism-specific teacher training could be fewer behavioral and academic challenges and improved academic achievement for inclusive students with autism. Students with autism may have more positive secondary experiences with peers and these social benefits could reach beyond the classroom setting. With autism-specific mainstream teacher training, an increase in the number of inclusive students with autism graduating high school and pursuing post-secondary education could eventuate. An increase in high school graduation and enrollment in the tertiary education rates could have a positive contribution to society for students with autism which would lead them to be self-sufficient.

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Appendix A: Interview Protocol Form

The purpose of this interview is to further my understanding of your perception of the academic and behavioral challenges of inclusive students who are diagnosed with Autism. Responses will contribute to my study involving the exploration of teachers' perceptions of academic and behavioral challenges of inclusive students who are diagnosed with autism. For the purpose of this interview the term inclusive indicates students who are diagnosed with autism who are included in the general education setting for one or more class sessions throughout the school day.

Interview Instructions and Details:
This interview will be conducted by telephone. Each interview should last approximately 60 minutes.

The researcher will record the interview, which will consist of the questions noted below in this document. Also, follow-up questions may be asked to gain more detail.

I want to remind you again that this interview is confidential and your identity will remain anonymous. Each participant will be assigned a random number to protect identity. Your honesty will be greatly appreciated, and is taken without judgment. Your perceptions are valuable and will contribute to this study and the field of inclusive autism at the secondary level. Lastly, your participation is voluntary and you have the right to end this at any time.

Interview Questions
1. Tell me about your perceptions of inclusive students with autism. Explain specific experiences have contributed to those perceptions
2. What are your thoughts on the achievement levels of your inclusive students with autism? Explain what factors in the class you perceive to have impacted those levels for your students.
3. What do you see as academic challenges for your students with autism? Tell me about how you those challenges may have impacted student achievement.
4. What behaviors from inclusive students with autism do you recognize as challenging in the general education setting? Behaviors can mean socialization with peers, study habits, attention during instruction, following directions, etc. Provide details on how those behaviors impacted student learning.
5. What may prevent a secondary general education classroom teacher from meeting the academic and behavioral challenges for inclusive students who are diagnosed with autism?
6. In what specific areas do you feel you need more understanding to better meet the learning needs of inclusive students with autism?

7. Explain how you would change the current training for general education teachers of inclusive students with autism to help them better be able to educate inclusive students with autism.

Probing Question Examples
1. You mentioned how you would change current training for general education teachers in your building. Describe any autism-related training that helped you address the challenges students with autism have in your class?
2. Tell me more about possible factors related to the academic achievement of your inclusive students with autism.
3. Describe in more detail the frequency and nature of the specific behavioral challenges you noted.
4. How would an increase in understanding specifically help you during instruction times?

Appendix B: Journal Prompts and Instructions

The purpose of this journal is to further my understanding of your perception of academic and behavioral challenges experienced by inclusive students with autism. Responses will contribute to my study involving the exploration of teachers' perceptions of academic and behavioral challenges experienced by inclusive students with autism. For the purpose of the journal entries, the term inclusive indicates students who are diagnosed with autism who are included in the general education setting for one or more class sessions throughout the school day.

Journal Instructions and Details:
This journal will be completed through email. Journals should be completed only during the designated 5-day school week at the conclusion of each school day. Each participant should write for approximately 10 minutes per journal entry. The journal entry should immediately be emailed after each 10-minute writing time to the researcher via email to XXXX. The researcher will save the journals in a password-protected electronic file for five years.

Each participant will get a random number to protect identity. Your honesty will be greatly appreciated, and is taken without judgment. Your experiences are valuable and will contribute to this study and the field of inclusive autism at the secondary level. Lastly, your participation is voluntary and you have the right to end this at any time.

Journal Prompt

What academic and behavioral challenges did you notice today with inclusive students with autism? How did you address those challenges?

The journal entries can be emailed each day of the five designated days directly to the researcher's email at XXXX.