SELF-EFFICACY AND JOB SATISFACTION IN TEACHERS OF STUDENTS WITH AUTISM SPECTRUM DISORDER: A MIXED METHODS STUDY

by

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ABSTRACT

Objective: The purpose of the current mixed-methods study was to examine self-efficacy and job satisfaction in general education and special education teachers of students with ASD.

Method: Using a concurrent mixed methods research design, the quantitative portion of the study examined reports of self-efficacy pertaining to teaching students with ASD and job satisfaction from both general and special education teachers of students with ASD, and examined potential correlates to these constructs such as occupational stress, social support, knowledge of ASD, and school resources. The qualitative portion of the study employed semi-structure interviews to examine what factors influence teachers’ self-efficacy and job satisfaction. Results: Results revealed no significant differences in self-efficacy, job satisfaction, occupational stress, perceived social support or knowledge of ASD between general and special education teachers and no significant relation between self-efficacy and occupational stress, social support and school resources. However, analyses examining the potential relation of these variables with job satisfaction revealed statistically significant correlations between teachers’ job satisfaction and social support and their job satisfaction and levels of occupational stress. The qualitative data for the current study revealed four overarching themes related to overall teacher well-being: the impact of knowledge, experience and training; the importance of support; the impact of occupational stress; and the intrinsic rewards of teaching as protective factors. Following standard mixed methods methodology, quantitative and qualitative data was integrated and discussed.
# LIST OF ABBREVIATIONS AND SYMBOLS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Definition</th>
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<tbody>
<tr>
<td>$\alpha$</td>
<td>Cronbach’s alpha, a measure of internal consistency</td>
</tr>
<tr>
<td>$B$</td>
<td>Unstandardized regression coefficients</td>
</tr>
<tr>
<td>$\beta$</td>
<td>Standardized regression coefficients</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence interval: proportion of intervals that contain the true value of the parameter</td>
</tr>
<tr>
<td>F</td>
<td>Fisher’s F ratio: A ratio of two variances</td>
</tr>
<tr>
<td>$M$</td>
<td>Mean: the sum of a set of measurements divided by the number of measurements in the set</td>
</tr>
<tr>
<td>$n$</td>
<td>Sample size</td>
</tr>
<tr>
<td>$\eta^2$</td>
<td>Partial eta squared</td>
</tr>
<tr>
<td>$p$</td>
<td>Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value</td>
</tr>
<tr>
<td>$r$</td>
<td>Pearson product-moment correlation</td>
</tr>
<tr>
<td>SD</td>
<td>Standard deviation: amount of variation or dispersion of a set of data values</td>
</tr>
<tr>
<td>SE</td>
<td>Standard error of the regression coefficients</td>
</tr>
<tr>
<td>t</td>
<td>Computed values of $t$ test</td>
</tr>
<tr>
<td>&lt;</td>
<td>Less than</td>
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<td>=</td>
<td>Equal to</td>
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CHAPTER 1
INTRODUCTION

Autism spectrum disorder (ASD) is a complex, life-long neurodevelopmental disorder characterized by persistent and pervasive deficits in social communication and social interaction, as well as restricted and repetitive behaviors, interests or activities (American Psychiatric Association [APA], 2013). Although deficits in social communication and interaction and the presence of restricted and repetitive behaviors represent the core features of ASD, individuals with ASD can experience a variety of associated features that impair their everyday functioning. These include accompanying intellectual and/or language impairments, self-injurious behaviors and other associated behaviors. In addition, studies have found that approximately seventy percent of children with ASD meet criteria for at least one comorbid psychiatric disorder, such as social anxiety disorder, oppositional defiant disorder, and attention-deficit/hyperactivity disorder (ADHD; APA, 2013; Simonoff et al., 2008).

According to 2014 reports from the Centers for Disease Control and Prevention (CDC) and the Autism and Developmental Disabilities Monitoring Network (ADDM), one in every 59 children is diagnosed with ASD. However, reports from 2000 indicated that one in 150 children was diagnosed with ASD, suggesting a prevalence rate increase of over 100%, making ASD the nation’s most rapidly growing developmental disability (CDC, 2018; Baio et al., 2018).

This rise in diagnostic rates and recognition has led to an increasing number of children with ASD in both general and special education classrooms (Hart & Whalon, 2012; Scull & Winkler, 2011). Specifically, the percentage of students diagnosed with ASD served by
federally-supported special education programs increased from 0.2% during the 2000-2001 academic year to 1.1% during the 2013-2014 academic year. Additionally, during the 2013-2014 academic year, this 1.1% of children with ASD represented the fourth largest group supported by special education programs, following other health impairment (e.g., epilepsy, leukemia, diabetes and tuberculosis; 1.6%), speech or language impairment (2.7%), and specific learning disabilities (4.5%; U.S. Department of Education, National Center for Education Statistics (NCES), 2016; percentages based on the total enrollment in public schools, prekindergarten through 12th grade).

As the rate of individuals with ASD who are served by special education programs has increased, laws addressing educational services for children (i.e., No Child Left Behind [2001] and the Individuals with Disabilities Education Act [IDEA; 2004]) have altered the settings in which students with ASD are educated. Specifically, the 2004 revisions of IDEA mandated that states provide a “free and appropriate public education” to all students with disabilities, and that these students are entitled to receive services within the “least restrictive environment.” This process, often referred to as inclusion, means that schools are required to place students with ASD in environments in which they can participate in the general education curriculum and interact with their typically-developing peers to the greatest extent possible. This has led to an increase in the number of students with ASD in general education classrooms, as well as an increase in the number of general education teachers responsible for the education of special needs students (Hart & Whalon, 2012). However, research has indicated that while an increasing number of teachers are expected to accommodate students with special needs such as ASD, state certification requirements (and therefore graduate and undergraduate training programs) often do not reflect adequate training in this area when compared to teachers in special education courses (Cameron & Cook, 2007).
A 2007 study found that general educators reported taking an average of 1.5 undergraduate courses that focused on inclusion or special education, while special educators reported taking an average of 11 courses (Cameron & Cook, 2007). In the state of Alabama specifically, the undergraduate and graduate curriculum for most state-approved elementary education programs only requires one to two classes focused on the topics of inclusion or special education (Alabama State Department of Education, 2018). Whereas this training model may have been sufficient when special educators were the primary instructors of students with disabilities, it becomes a source of debate as an increasing number of general education teachers are tasked with meeting the needs of students with developmental disabilities such as ASD.

Whether they work in a general education or special education setting, teachers of students with developmental disabilities often experience additional stressors such as increased demand for behavior management and monitoring, increased workload (e.g., implementing Individualized Education Programs [IEP]), and potentially slower academic progress among students (Farber, 1991). However, due to the core symptoms, associated behaviors and challenges, and range of abilities and needs, educating students with ASD can be particularly burdensome (Robertson et al., 2003; Yell et al., 2003). For example, the deficits in social communication and social interaction that accompany an ASD diagnosis may make it difficult for teachers to establish rapport with some students with ASD, and students’ restricted interests may make it difficult to engage the students in non-desired tasks or activities (Lindsay et al., 2013). Additionally, the heterogeneity of the disorder can present a significant challenge to teacher training as it is unlikely that one or two teaching strategies or interventions will work with all students with ASD (Scheuermann at al., 2003).
Due to these challenges, teaching students with ASD is often thought to be more difficult than teaching students with other disabilities such as intellectual disability (ID). In a 2013 study examining the differences in job burnout among teachers of deaf students, students with ASD, and students with ID, researchers found that teachers of students with ASD exhibited more general mental health problems, as well as increased levels of stress and job burnout compared to teachers of deaf students and teachers of students with ID (Zarafshan et al., 2013). These findings support previous research asserting that students with ASD may impose higher levels of stress and burnout on special education teachers and inclusive teachers when compared to students with ADHD, students with cognitive disabilities, and students with other emotional problems or challenging behaviors, resulting in lower levels of overall job satisfaction (Coman et al., 2013; Hastings & Brown, 2002; Jennett et al., 2003; Kokkinos & Davazoglou, 2009; Ruble & McGrew, 2013; Stempien & Loeb, 2002).

**Teacher Attrition**

As states continue to face teacher shortages, teacher attrition rates and teacher job satisfaction remain subjects of interest for many researchers (Ingersoll, 2001; Loeb et al., 2005; Skaalvik & Skaalvik, 2011; Sutcher et al., 2016). According to a 2016 report published by the Learning Policy Institute, yearly attrition rates for teachers in the United States have reached an average of 8% over the last decade (Loeb et al., 2005; Sutcher et al., 2016). This attrition rate is double that of other high-achieving nations such as Finland, Singapore, and Canada, where only 3-4% of teachers leave each year (Darling-Hammond & Rothman, 2011; Sutcher et. al., 2016). However, it is important to note that this attrition rate varies among teacher populations. Specifically, the attrition rates are particularly high among new teachers, with national estimates finding that 19-30% of teachers leave the teaching profession within the first five years of
teaching (Darling-Hammond & Sykes, 2003; Gray et al., 2015; Sutcher et al., 2016).

Additionally, teacher attrition rates in Title I schools (i.e., schools with high percentages of children from low-income families that receive federal funds based on cost of education and poverty estimates in the area; Carver-Thomas, 2016) are nearly 50% greater than attrition rates in non-Title I schools (Sutcher et al., 2016). With regard to regional differences, an annual attrition rate of 16% in Southern schools exceed turnover rates in all other geographic regions of the U.S (Sutcher et al., 2016). Lastly, differences in attrition rates are consistently found among special and general education teachers, with special education teachers moving schools and leaving the teaching profession at higher rates than general education teachers. Specifically, a 2013 survey completed by the National Center for Education Statistics (NCES) found turnover rates of 14.2% among special education teachers, compared to 11.3% among general education teachers. While these overall turnover rates account for both “movers” (i.e., teachers who move schools or specialties) and “leavers” (i.e., teachers who leave the teaching profession), the rates in both subgroups were higher among special education teachers (i.e., special education “leavers” [5.6%]; special education “movers” [8.6%]; general education “leavers” [4.9%]; general education “movers” [6.4%]; Goldring et al., 2014; Sutcher et al., 2016). When exploring potential explanations for this increased turnover rate among special education teachers, researchers have proposed factors such as increased stressors, perceived lack of success, and perceived insufficient preparation (Kilgore & Griffin, 1998). Additionally, attrition rates are consistently higher among special education teachers of students with emotional or behavioral challenges (as defined by the IDEA special education eligibility categories; Stempien & Loeb, 2002).
Although attrition rates may vary among different teacher populations, most teachers who leave the teaching profession identify some type of job dissatisfaction as a very important or extremely important factor in their decision. For example, while studies have found that teachers often leave the teaching profession due to various types of factors such as family reasons (43%) or financial reasons (18%), the most common reason cited by teachers was job dissatisfaction (55%; Goldring et al., 2014). Specific areas of dissatisfaction include policy issues (e.g., changes related to high-stakes testing policies), teaching conditions (e.g., large class size, lack of classroom resources), and administrative concerns (e.g., lack of administrative support, not enough classroom autonomy, lack of influence over school policies and practices; Goldring et al., 2014; Sutcher et al., 2016).

Although teachers have individual reasons for leaving the classroom, the resulting high turnover rates have broad, school-wide impacts. Research has found that schools with high turnover rates, understandably, often employ a disproportionate number of inexperienced teachers (Kini & Podolsky, 2016). Given the higher rate of attrition among inexperienced teachers, this link can result in a cycle of overall instability which not only affects the achievement of students in a new teacher’s classroom, but also affects the achievement of students school-wide (Kini & Podolsky, 2016; Ronfeldt et al., 2013). Although nationwide surveys similar to the aforementioned 2013 NCES survey have led to important insight into teachers’ motivations in leaving the teaching profession, continued research regarding why both general and special teachers choose to leave the teaching profession is vital to maintaining an effective workforce of teachers and maximizing student achievement (Billingsley, 2004).
Teacher Job Satisfaction

While the body of research addressing teacher attrition is extensive, research studies focusing on why teachers leave the classroom (e.g., Borman & Dowling, 2008; Buchanan, 2010; Luekens et al., 2004; Smithers & Robinson, 2003) seem to outnumber studies addressing why they stay (Weiss, 1999). This imbalance has been noted by several researchers, who have proposed that high attrition rates can best be addressed by examining what factors lead teachers to remain in the teaching profession, rather than examining what factors cause them to leave (Perrachione et al., 2008; Skaalvik & Skaalvik, 2010). One of the factors examined by these researchers is job satisfaction. Research examining job satisfaction has found an inverse relation between job satisfaction and turnover, with higher levels of job satisfaction leading to higher levels of teacher retention, and lower levels of job satisfaction leading to higher rates of attrition and absenteeism (Cockburn, 2000; Hargreaves, 1994; Perrachione et al., 2008). Additionally, research examining job satisfaction across career fields has found that it is not only an important indicator of an individual’s psychological well-being, but also a predictor of both work performance and commitment (Arnold et al., 1998).

Although job satisfaction is often a topic of research across various careers and domains, there is a lack of consensus regarding the definition of the variable. While Locke (1976) defined job satisfaction as a positive or pleasant emotional state resulting from a person’s appreciation of his/her own job or experience, researchers examining job satisfaction among teachers, specifically, have given more focus to the roles of motivation and needs fulfillment when forming their conceptualization of the construct (Dinham & Scott, 1998; Sergiovanni, 1967). This conceptualization, which is rooted in Herzberg’s two-factor theory of motivation (Herzberg et al., 1959), proposes a two-factor theory of teacher job satisfaction in which factors that lead to
job satisfaction and job dissatisfaction are mutually exclusive and do not fall on the same continuum (Sergiovanni, 1967). Specifically, this theory separates factors that influence teacher job satisfaction into two domains: (1) intrinsic factors that typically promote job satisfaction (e.g., personal or student achievement) and (2) extrinsic factors that may lead to job dissatisfaction when present, but do not lead to job satisfaction when absent (e.g., poor working conditions; Sergiovanni, 1967). This two-domain theory was confirmed through multiple research studies (e.g., Holdaway, 1978; Kaufman, 1984; Schmidt, 1976), and was expanded upon in a 1998 study conducted by Dinham and Scott.

Dinham and Scott (1998) measured 892 teachers’ responses to 75 teaching-specific satisfaction/dissatisfaction items on a seven-point Likert scale ranging from (1) “highly dissatisfying” to (7) “highly satisfying.” While results provided further confirmation for the core features of the two-factor theory of teacher job satisfaction and dissatisfaction, the responses also provided support for an additional, third domain. Specifically, the researchers proposed that factors that influence teacher job satisfaction and job dissatisfaction can be classified into the following three domains: (1) intrinsic rewards of teaching (e.g., student achievement, positive relationships with students, personal growth, mastery of skills, perceived support); (2) factors extrinsic to the school (e.g., governmental changes and policies that are out of the control of teacher and schools, perceived lack of support provided to implement changed policies, the lack of support services for teachers, the apparent negative portrayal of teachers in the media); and (3) school-based factors (e.g., school leadership, school climate and decision making, school reputation; Dinham and Scott, 1998).

Similar to the studies that confirmed the two-factor theory of teacher job satisfaction, Dinham and Scott (1998) found that teachers rated the perceived intrinsic factors of teaching the
most satisfying, while the more universal, extrinsic factors were found to be the most
dissatisfying. However, there was more variation and ambivalence among responses regarding
school-based factors such as school infrastructure ($M = 3.68$), school leadership ($M = 4.27$), and
school reputation ($M = 4.36$). Dinham and Scott (1998) proposed that the variation in responses
regarding school-based factors (which deviate from the strong and consistent relationships
between intrinsic factors and job satisfaction, and extrinsic factors and job dissatisfaction)
suggests that these factors represent the greatest potential for changes in teacher job satisfaction.
However, given that the factors included in each of the three domains are mutually exclusive, the
authors note that attention focused on factors in a singular domain will not guarantee
improvements in the others.

Additional studies examining job satisfaction amongst teachers have examined a variety
of demographic variables, as well as extrinsic (i.e., job-related) and intrinsic (i.e., personal
experiences) factors related to reported levels of job satisfaction. For example, research has
found higher levels of job satisfaction among elementary school teachers (compared to
secondary teachers; Bogler, 2002; Perie & Baker, 1997) and teachers who are married (Bogler,
2002; Perrachione et al., 2008). Additionally, higher levels of job satisfaction have been found
among teachers with higher qualifications (i.e., higher education levels or degree earned, more
professional development) when compared to teachers with lower qualifications (Meek, 1998).
However, research examining other demographic variables has resulted in inconsistent findings.
For example, while Liu and Ramsey (2008) found that female teachers reported lower levels of
job satisfaction compared to their male counterparts, Ma and MacMillian (1999) found higher
levels of professional satisfaction among female teachers. Additionally, while several studies
published in the 1980’s found that older teachers were more satisfied with their jobs compared to
younger teachers (Barber, 1980; Herman et al., 1980; Sweeney, 1982), Ma and MacMillian (1999) found that older, more experienced teachers reported job satisfaction levels significantly lower than the levels reported by younger, less experienced teachers. When examining potential explanations for this shift in age-related job satisfaction, some researchers have cited national changes in education policies (e.g., shifts from local to centralized control of curriculum and standards; increased emphasis on educational outcomes, such as students’ performance on state testing) that have forced teachers to adapt to changing workloads, greater economic constraints, and changes in cultural expectations placed upon teachers (Dinham & Scott, 1998; Hargreaves, 1994). These changes have resulted in what Hargreaves (1994) calls “change fatigue,” which Dinham and Scott (1998) proposed as a potential source of job dissatisfaction among older teachers.

However, several job- and role-related variables, many of which were also included as factors within Dinham and Scott’s aforementioned three-domain model, have consistently been linked to job satisfaction across the literature. For example, variables such as working conditions, interaction with/support from colleagues, support from administration, professional autonomy, overall school climate, and observing progress in students have all been found to be significant predictors of teacher job satisfaction (Billingsley & Cross, 1992; Cockburn & Haydn, 2004; Kim & Loadman, 1994). Additionally, a strong inverse relationship has been reported between job satisfaction and levels of stress among teachers (Betoret, 2006; Billingsley & Cross, 1992; Greenglass & Burke, 2003; Liu & Ramsey, 2008; Schwarzer & Hallum, 2008; Sutton & Huberty, 1984), which will be outlined in further detail below.
Job Satisfaction Among Special Education Teachers

As discussed above, the attrition rates for special education teachers have consistently been found to be higher than attrition rates for general education teachers (Boe et al., 1995; Goldring et al., 2014; Sutcher et al., 2016). However, these attrition rates among special education teachers have also been found to vary according to the needs of the children in their classrooms (Brownell et al., 1995; Miller et al., 1999; McManus & Kauffman, 1991; Singer, 1993). For example, multiple studies have found higher attrition rates among special education teachers who primarily teach children with emotional (Brownell et al., 1995; Miller et al., 1999; Singer, 1993) or behavioral (McManus & Kauffman, 1991) disorders (as defined by the IDEA special education eligibility categories), compared to special education teachers of students with learning disabilities (Brownell et al., 1995).

Given the higher attrition rates among special education teachers (Boe et al., 1995; Brownell et al., 1995; Goldring et al., 2014; Sutcher et al., 2016) and the inverse relationship found between teacher attrition rates and job satisfaction, (Gersten et al., 2001; Shreeve et al., 1988; Singh & Billingsley, 1996), it would be reasonable to expect lower levels of job satisfaction among special education teachers when compared to general education teachers. However, the results of research examining these group differences have been mixed. For example, while a 1995 study conducted by Darcy, Kusznikow, and Lester found no significant differences in job satisfaction between special education and general education teachers, Stempien and Loeb (2002) found statistically significant differences in job satisfaction among the two groups. One possible explanation for these differences is the specific subgroup of special education teachers targeted in Stempien and Loeb’s study. Specifically, Stempien and Loeb (2002) examined differences in job satisfaction among three groups: teachers of students without
disabilities in general education programs (Group 1); teachers of students with emotional and/or behavioral impairments in special education programs (Group 2; students often diagnosed with autism or had “autistic-like symptoms”); teachers of students from both types of programs (Group 3; students noted to be “less severely impaired” than students in Group 2). While differences were found among all three research groups, statistically significant differences in job satisfaction were only found between Groups 1 and 2. Although the various student challenges encapsulated under the umbrella of special education are broad, this study supports the findings that the challenges associated with working with students with emotional and/or behavioral impairments may be particularly influential in a teacher’s job satisfaction (Abelson, 1986; Singh & Billingsley, 1996; Stempien & Loeb, 2002). Whereas job satisfaction might vary according to the challenges of specific students, job satisfaction among special educators does not appear to be influenced by the various challenges that accompany the different settings in which they teach. Specifically, Viel-Ruma and colleagues (2010) examined differences in reported levels of job satisfaction among special educators working in self-contained classrooms, resource rooms, or inclusion classrooms, and found no statistically significant differences in job satisfaction among the three groups.

In addition to the mixed findings regarding job satisfaction among special education teachers, there is a dearth of research regarding levels of job satisfaction specifically among teachers of students with ASD. Although Stempien and Loeb (2002) found higher levels of job satisfaction among general education teachers when compared to special education teachers of students with autism or “autistic-like symptoms,” the data for this study were collected prior to the enactment of key policy changes which altered the number of students with ASD who participate in a general education curriculum (i.e., No Child Left Behind [2001] and the
Individuals with Disabilities Education Act [IDEA; 2004]). Additionally, while numerous studies have examined differences in burnout among special education teachers of students with ASD compared to teachers of children with other disabilities (Zarafhan et al., 2013), and the factors related to this burnout (e.g., stress, student achievement, administrator support, level of training, emotional exhaustion; Boujut et al., 2016; Coman et al., 2013; Jennett et al., 2003; Myles et al., 1991; Ruble et al., 2013), research examining factors that may positively affect special education teachers’ job satisfaction is relatively scarce.

Teacher Self-Efficacy

Another factor that has been linked to broad concepts of teacher job satisfaction and job stress is teacher self-efficacy (Betoret, 2006; Klassen & Chiu, 2010; Schwarzer & Hallum, 2008). Bandura’s social cognitive theory posits that human behavior is caused by a mix of cognitive factors (e.g., knowledge and skills), affective processes (e.g., psychological and physiological processes), and environmental factors (e.g., social support; Bandura, 1989). According to social cognitive theory, people demonstrate more effort, are more willing to persevere in the face of obstacles and failures, and are better equipped to cope with challenges when they feel that they are able to adequately meet environmental demands. This belief regarding one’s ability to meet certain environmental demands was defined by Bandura as self-efficacy (Bandura, 1997; 1999). Furthermore, Bandura proposes that there are four sources of self-efficacy: (1) mastery experience [i.e., an individual’s interpretation of their past performances], (2) vicarious experience [i.e., the experience gained by observing the mistakes and successes of others], (3) social persuasions [i.e., the positive, negative, or neutral feedback an individual receives from others], and (4) physiological and emotional states [i.e., an individual’s somatic and affective states regarding their own performance; Bandura, 1997; Ruble
Within educational research specifically, teacher self-efficacy has been operationalized by researchers as “beliefs about one’s capability to deliver content effectively, manage the classroom environment, and engage students successfully,” (Ruble et al., 2013, p. 1), and has been linked to both teacher behavior and student outcomes (Klassen et al., 2011). For example, research has found that teachers with high levels of self-efficacy are more likely to select instructional programs and strategies that are likely to improve student development, experiment with new instructional programs and strategies, and set more ambitious goals for both themselves and their students (Ross, 1998; Zee & Koonman, 2016). Regarding student outcomes, teachers with high self-efficacy have been found to provide more supportive and positive classroom environments, leading to higher levels of student achievement (e.g., higher literacy skills, higher end-of-the-year grades; Caprara et al., 2006; Guo et al., 2012; Ross, 1998), greater motivation, increased self-esteem, and more prosocial attitudes among students (Guo, et al., 2012; Ross, 1998).

Given the relation between teacher self-efficacy and student outcomes, researchers have been very interested in determining predictors of the construct. For example, research has found that high levels of teacher stress, greater job dissatisfaction and high levels of job burnout are often linked to lower levels of self-efficacy among teachers (Klassen & Chiu, 2010; Ruble et al., 2011; Schwarzer & Hallum, 2008). Additionally, teachers in lower grade levels and male teachers reported higher levels of self-efficacy when compared to teachers in higher grades and female teachers, respectively (Klassen & Chiu, 2010; Wolters & Daugherty, 2007). However, most of this research has been conducted with general education teachers, while relatively few studies have examined self-efficacy specifically among teachers of students with ASD.
Self-Efficacy Among Teachers of Students with ASD

While there has been an increase in research examining teachers’ self-efficacy and the relation between self-efficacy and positive classroom outcomes in broader education research, research examining self-efficacy specifically among teachers of students with ASD remains relatively scarce. In a 2003 study, researchers investigated whether teachers’ self-efficacy scores varied based on levels of commitment to one of two autism-specific teaching philosophies (i.e., Applied Behavior Analysis [ABA] or Treatment and Education of Autistic and Related Communication Handicapped Children [TEACCH]; Jennett et al., 2003). While results of this study found no significant differences in overall level of self-efficacy scores among the two groups, teachers with a higher level of commitment to either ABA or TEACCH were found to have a greater sense of personal and general teaching efficacy (Jennett et al, 2003). Yet, in a 2011 study examining the relations between self-efficacy, years of teaching, administrator support, and teacher burnout among teachers of students with ASD, Ruble and colleagues found mixed results. Although results indicated a negative relation between teacher self-efficacy and burnout scores, no significant relations were found between self-efficacy and years of teaching, or self-efficacy and administrator support. However, the researchers hypothesized that these nonsignificant findings might have been due to the fact that the general teacher self-efficacy measure used did not assess teachers’ perspectives regarding their efficacy to perform specific skills for teaching students with ASD (Ruble et al., 2011; Ruble et al., 2013). As a result, Ruble et al. (2013) developed a new, more specific measure: The Autism Self-Efficacy Scale for Teachers (ASSET).

In developing this measure, Ruble and colleagues (2013) examined the relation between levels of self-efficacy reported on the ASSET and specific aspects of teacher stress (i.e., self-
doubt/need for support, loss of satisfaction, disruption of teaching, and frustration with students’ parents) and teacher burnout (i.e., emotional exhaustion, depersonalization, personal accomplishments). When using this more specific scale, the researchers found that self-efficacy was significantly negatively related to two of the four aspects of teacher stress (i.e., self-doubt/need for support and disruption of teaching subscales) but was not significantly related to any aspects of teacher burnout. Ruble and colleagues attributed the lack of a significant relationship between teachers’ self-efficacy and burnout to the specificity of the ASSET. More specifically, the researchers noted that while the burnout measure examined general burnout/exhaustion related to teaching, administration, and co-workers, it was not sensitive to the specific challenges that teachers of students with ASD may face (Ruble et al., 2013).

Additionally, a 2017 study examined the influence that prior experience, knowledge of ASD, and training in ASD and evidence-based practices (EBPs) had on school professionals’ self-efficacy in working with students with ASD (as measured by the ASSET; Corona et al., 2017). Results showed that while prior training in both ASD and EBPs (specifically Positive Behavior Supports [PBS]) was significantly related to self-efficacy among the school professionals, knowledge of ASD and years of experience working with students with ASD were not (Corona et al., 2017). These results support the importance of high quality ASD-specific training for teachers who work with students with ASD, a finding often concluded by researchers, but not followed by significant changes in teacher training policies (Scheuermann et al., 2013). When describing the skills needed by professionals who work with students with ASD, Corona and colleagues cite conclusions made by multiple previous researchers: in order to feel confident and competent in their roles, teachers who work with students with ASD must not only be knowledgeable about the symptoms and characteristics of the disorder, but must also be able to use strategies for
teaching communication skills, teaching social skills, and addressing adaptive behavior deficits and problem behaviors (Corona et al., 2017; Ross, 1998; Scheurmann et al., 2003). This extensive list of competencies has proven to be a barrier to efficacious teaching practices given the lack of ASD-specific training often reported by special education teachers (Morrier et al., 2011; Scheurmann et al., 2003), and the lack of both special education and ASD-specific training cited by general education teachers (Holdheide & Reschly, 2008; Morrier et al., 2011).

Given the significant relations between self-efficacy and teachers’ stress (Ruble et al., 2013), self-efficacy and degree of ASD-specific training (Corona et al., 2017; Jennett et al., 2003), and the lack of ASD-specific training reported by many special and general education teachers of ASD (Holdheide & Reschly, 2008; Morrier et al., 2011; Scheurmann et al., 2003), it is important to continue to examine factors that may influence self-efficacy among the increasing number of teachers who work with this unique population (Hart & Whalon, 2012; Scull & Winkler, 2011).

Factors of Interest Related to Both Teacher Job Satisfaction and Teacher Self-Efficacy

Teacher stress. One factor that is commonly discussed throughout the literature examining teacher job satisfaction and self-efficacy is occupational stress. Given that multiple studies have found that as many as one third of teachers reported being stressed or extremely stressed (Borg & Riding, 1991; Geving, 2007; Thomas et al., 2003), the inclusion of occupational stress in studies of teacher well-being is well-founded. Although some have conceptualized teacher’s occupational stress as a unidimensional construct (e.g., Schwarzer & Hallum, 2008), others have found that this stress is not attributable to a single, isolated factor (Boyle et al., 1995; Fimian, 1988). Two of the sources commonly discussed in the literature are stress related to workload and stress related to student behavior (Boyle et al., 1995; Chaplain,
2008; Collie et al., 2012; Klassen & Chiu, 2010). Broadly, studies have found that teachers with higher levels of occupational stress stemming from these two sources experience lower self-efficacy (Betoret, 2006; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007), lower job satisfaction (Klassen & Chiu, 2010), poorer teacher–pupil rapport, and lower levels of effectiveness (Abel & Sewell, 1999; Kokkinos, 2007).

Although numerous studies have examined the high levels of occupational stress among teachers of students with ASD when compared to students with ADHD, students with cognitive disabilities, and students with other emotional problems or challenging behaviors (Coman et al., 2013; Hastings & Brown, 2002; Jennett et al., 2003; Kokkinos & Davazoglou, 2009; Ruble & McGrew, 2013; Stempien & Loeb, 2002), few studies have examined how the occupational stress of teachers of students with ASD varies according to classroom environment (Boujut et al., 2016). However, in a recent French study, Boujut and colleagues (2016) found that teachers of students with ASD in “regular” classrooms (i.e., general education classrooms) perceived stress significantly differently from 1) teachers of students with ASD in “specialized” classrooms (i.e., special education classrooms) and 2) teachers who did not teach students with ASD. Specifically, teachers of students with ASD in “regular” classrooms perceived stress as a threat or a loss, while teachers of students with ASD in “specialized” classes perceived stress as a challenge (Boujut et al., 2016).

**Social support.** Another construct frequently examined in studies of teacher self-efficacy and job satisfaction is social support. Social support, conceptualized by Cohen and Willis (1985) as an individual’s assessment of the support available to them in any one situation, can be derived from multiple sources. In the work setting specifically, work colleagues, superiors, and peers are thought to be the three primary sources of social support (House, 1981; Boujut et al.,
Studies examining social support in teachers have found that teachers who perceive higher levels of support from their administrators and colleagues report higher levels of job satisfaction, lower levels of burnout, and lower levels of occupational stress compared to teachers who receive less administrator support (Billingsley and Cross, 1992; Burke et al. 1996; Iverson et al. 1998; Pascual et al. 2003; Schaufeli and Buunk 2003; Zellars and Perrewe, 2001), suggesting that these may be particularly important sources of support for teachers.

While similar relations between perceived social support and factors such as burnout, occupational stress, and job satisfaction have been found in studies specifically examining teachers of students with ASD (Cappe et al., 2017; Ruble et al, 2011; Ruble et al., 2013), studies examining the relation between self-efficacy and social support among this population have yielded mixed results. For example, while Ruble et al. (2011) found that administrator support was not significantly related to teachers’ self-efficacy, other researchers have found a significant positive relation between the two variables (Accardo et al., 2017; Cappe et al., 2017). Although the literature base examining the impact of social support on teachers of students with ASD is still somewhat limited, the positive impact of social support in stressful situations has been well established (Cappe et al., 2017; Cohen & Wills, 1985; Russell et al., 1987), and continued research examining its role in the self-efficacy and job satisfaction of teachers of students with ASD is warranted.

Knowledge of ASD. In studies examining a variety of factors related to the experiences of teachers of students with ASD (e.g., opinions on inclusion, motivation, flexible teaching approach) teachers consistently cite concerns regarding a lack of adequate knowledge of and training in working with students within this population (Busby et al., 2012, Horne & Timmons, 2009; Powell & Jordan, 1993). Differences in levels of knowledge of ASD have been found
among special and general education teachers, with general education teachers reporting a poorer knowledge of ASD when compared to special education teachers (Helps et al., 1999). These differences are understandable given the difference in the amount of training focused on special education and ASD received by both groups (Cameron & Cook, 2007; Helps et al., 1999).

Whereas researchers have examined knowledge of ASD as a predictor of variables such as attitudes towards inclusion and use of empirically supported interventions (Segall & Campbell, 2012), relatively few studies have examined how this knowledge may affect job satisfaction and self-efficacy specifically among teachers of students with ASD.

Regarding the relation between knowledge and self-efficacy, studies examining these variables in broader teacher populations have found a positive relation between teachers’ knowledge and their sense of efficacy educating students with special needs (Buell et al., 1999). However, Corona (2017) found that while knowledge of ASD accounted for a portion of the variance in teacher’s self-efficacy for working with students with ASD (other factors in the model included, prior experience working with students with ASD, prior training in ASD, and prior training in PBS), it did not emerge as a significant predictor of teacher self-efficacy when examined independently (Corona, 2017). Regarding the relation between knowledge of ASD and job satisfaction, while studies focusing on the relation between the two factors are scarce, researchers have examined the relations between knowledge and factors inversely related to job satisfaction, such as teacher attrition. For example, Brownell and colleagues (1995) found that special education teachers reported lack of knowledge of special education as one of the factors which led to their decision to leave the field. Relatedly, 2003 data collected by the National Commission on Teaching and America’s Future (NCTAF) found that teachers who had training in and knowledge of specific aspects of teaching such as selection of instructional material, child
psychology and learning theory, left the teaching field at half the rate as teachers who did not have training in these areas.

Furthermore, conceptual models of self-efficacy and job satisfaction support a link between these variables and knowledge level. More specifically, according to Bandura’s social cognitive theory, cognitive factors such as knowledge and skills can impact an individual’s self-efficacy (Bandura, 1997; 1999). Lastly, Dinham and Scott’s (1998) study examining a three-domain model of teacher job satisfaction found that intrinsic factors (including but not limited to knowledge, self-growth, and mastery of professional skills) had the biggest influence on teacher job satisfaction.

**School resources.** In order to further examine factors that may lead to teacher attrition (e.g., teacher stress), researchers continue to examine variables such as community poverty level, students’ socioeconomic status (SES), and school funding (Hirn et al., 2018; Hoglund et al., 2015); however, findings in this area have been mixed. For example, in studies that primarily focused on the influence of stressful demands (e.g., children’s problem behavior, class size, administrative issues) in their conceptualization of teacher stress, researchers found that teachers in low-SES schools (SES primarily determined by income level of students’ families) reported higher levels of stress and lower levels of psychological well-being compared to teachers in high-SES schools (SES primarily determined by income level of students’ families; Pierce & Molloy, 1990; Pratt, 1978). However, more recent studies have examined stress as an interaction between both the demands and resources available to teachers (i.e., the transactional model of stress and coping) and have not found a significant difference between the stress levels of teachers in high- and low-SES school districts (Kenyeri, 2002; O’Donnell et al., 2008). However, results have been more consistent when examining student achievement, with research...
consistently confirming the presence of an achievement disparity among low- and high-SES students (Becker & Luthar, 2003; Hochschild & Scovronick, 2003; Ladson-Billings, 2006).

Regarding resources specifically, teachers’ perception of school resources has been found to be significantly related to burnout symptoms (McCarthy et al., 2009). Stress theorists such as Lazarus and Folkman (1984) defined two broad types of resources, material resources (e.g., money, materials, support from others) and personal resources (e.g., coping strategies, interpersonal skills). While the positive influence of personal resources, such as support from others, has been linked to outcomes such as higher levels of job satisfaction, lower levels of burnout, and lower levels of occupational stress, other types of material resources, such as classroom supplies, may also influence these same factors (Kaufhold et al., 2006; O’Donnell, Lambert, & McCarthy, 2008). For example, in a 2006 study conducted with special education teachers in Texas, 90% of teachers reported that they “agreed” or “strongly agreed” that they “lacked sufficient school supplies, materials and resources in order to do their jobs properly” (Kaufhold et al., 2006, p. 160). Moreover, this lack of sufficient supplies, paired with the resulting need to use personal finances to purchase necessary teaching-related materials, was found to be related to increased frustration and, in turn, higher levels of burnout among the special education teachers (Kaufhold et al., 2006). These findings are similar to those of previous studies in which financial constraints and lack of education supplies were found to be sources of teacher stress and burnout (Abel & Sewell, 1999; Coates & Thorsen, 1976).

Teacher salary is another funding- and resource-related variable that has been related to teacher attrition and job satisfaction (Billingsley, 2004; Boe et al., 1997; Henke et al., 1999; Ingersoll, 2001; Miller et al., 1999; Singer, 1993). When compared to other professionals with similar education and skill requirements (e.g., accountants, nurses, computer programmers,
counselors), teachers have been found to have wage disadvantages ranging from 12.2% to 20% (Allegretto et al., 2004; NCTAF, 2003). In a 2001 review conducted by the Center for the Study of Teaching and Policy, it was found that 25% of teachers who left the teaching profession reported job dissatisfaction as reason for their departure from the field. Within the subset of individuals who left the field due to job dissatisfaction, 45% cited poor salary as a reason for their dissatisfaction (Ingersoll, 2001). These findings are consistent with previous research that has linked pay satisfaction to teacher job satisfaction, teacher attrition, and perceived benefits of remaining in the teaching profession in samples of both special education and general education teachers (Billingsley, 2004; Boe et al., 1997; Henke et al., 1999; Kim & Loadman, 1994; Miller et al., 1999; Singer, 1993). While salary is rarely cited as a top factor motivating teachers to enter the profession (Hellsten & Prytula, 2011; Ni & Rorrer, 2018), research has established a link between teacher salary and job satisfaction (Darling-Hammond & Sykes, 2003; MacDonald, 1999; Roch & Sai, 2017).

According to national averages collected by the National Center for Education Statistics (NCES; 2021a), approximately 80% of 2017-2018 expenditures for education was allocated for salaries and benefits for teachers, and approximately 7% was allotted to supplies. Given the large percentage of school funding that is allocated for teachers’ salaries and supplies combined (NCES, 2021a), and the multitude of other positive outcomes which have been linked to increased school spending (e.g., lower student-to-teacher ratio, lower student-to-guidance-counselors ratios, increases in school support services; Jackson et al., 2015) it would be reasonable to hypothesize a positive relationship between school funding and other variables of interest such as job satisfaction and teacher stress. Additionally, while studies examining aforementioned factors such as SES capture the effect of variables outside of the classroom (e.g.,
community poverty), examining differences in job satisfaction and self-efficacy according to school funding allows researchers to more closely explore factors specific to each classroom and school setting.

*Geographic location.* In addition to examining factors related to resources available in specific schools, it is important to consider factors such as geographic location which may influence the experience of both special education and general education teachers in various ways. Results from studies comparing the experiences of students and teachers in rural and non-rural schools have been varied. Studies have found lower levels of academic achievement in rural schools when compared to non-rural schools, with the largest achievement gap present among rural and suburban schools (Lee & McIntire, 2001; Roscigno et al., 2006; The Brookings Institution, 2003). Additionally, teachers in rural schools often face unique challenges such as geographical isolation, funding shortages/fewer funding sources, and difficulty recruiting and keeping quality teachers, which affect both student achievement and teacher attrition within the communities (Fan & Chen, 1998; Reeves & Byland, 2005; Roscigno et al., 2006).

For special education and general education teachers of students with ASD specifically, another relevant challenge is the lack of social and behavioral health services for children in rural areas (DeLeon et al., 2003; Johnson et al., 2006; Mandell et al., 2005; Thomas & Holzer, 2006). While access to ASD-specific services is an area of concern among both rural and urban families of children with ASD, families in rural areas report having a more difficult time finding professionals trained in ASD in their areas, compared to families in urban areas (Murphy & Ruble, 2012). Given the positive impact that services such as social skills interventions, speech and language therapy, and behavioral interventions have on the day-to-day behavior of children with ASD in both the home and school environment (Ruble & McGrew, 2007), the increased
lack of access to these services and resultant lack of positive benefits could negatively impact the job satisfaction and self-efficacy of teachers of students with ASD in rural areas to a greater degree than teachers in more high-resource, urban areas.

However, when examining factors such as teacher stress among broader teacher samples (i.e., breakdown of special education and general education teachers not reported), researchers have not only found higher levels of stress among urban teachers (Ballou & Podgursky, 1995; Feitler & Tokar, 1982), but also variability in the sources of stress among both groups of teachers (Abel & Sewell, 1999; Tokar & Feitler, 1986). For example, in a 1986 study conducted by Tokar and Feitler, urban teachers cited “inadequate discipline policy, inadequate salary, noisy pupils, and too much work” as their major sources of stress, while rural teachers only cited “inadequate discipline policy and too much work.” (Tokar & Feitler, 1986, p. 80). Additionally, Abel and Sewell (1999) again found that while urban teachers self-reported greater levels of stress than rural teachers, these differences were dependent on the source of the stress. More specifically, while urban teachers self-reported higher levels of stress from poor working conditions and poor staff relations, levels of stress from pupil misbehavior, maintaining class discipline, difficult classes and time pressures did not differ among teachers in rural and urban schools (Abel & Sewell, 1999).

**Current Study**

Whereas constructs such as job stress, years of experience, past training, and burnout have been examined in relation to self-efficacy and job satisfaction among all teachers, and specifically among teachers of students with ASD, many variables remain unexamined. Additionally, while researchers have proposed that the mixed findings in studies examining self-efficacy and job satisfaction in teachers of students with ASD could be related to the specific
stressors associated with educating this population (Ruble et al., 2011), there are no known qualitative studies examining teachers’ feedback on these issues.

To address the current gaps in literature, the current mixed-method investigation examined teachers’ occupational stress, social support, knowledge of ASD, and school resources as correlates of job satisfaction and self-efficacy in special education and general education teachers of students with ASD. First, this study obtained quantitative reports of self-efficacy pertaining to teaching students with ASD and job satisfaction from both general education teachers and special education teachers of students with ASD. Second, quantitative reports of teachers’ occupational stress, social support, knowledge of ASD, and school resources were examined as possible correlates of teacher self-efficacy and job satisfaction in both groups. Additionally, the relations between previously-researched variables, such as years of experience and student behavior, and teacher self-efficacy and job satisfaction were examined to determine if the proposed variables were more strongly related to the constructs of interest in this population. Furthermore, exploratory research questions examined differences in the correlates of teacher self-efficacy and teacher job satisfaction according to geographic classification.

Finally, in order to gain deeper insight into the day-to-day experiences of teachers, this study gathered qualitative information about teachers’ self-efficacy and job satisfaction, as well as levels of teachers’ occupational stress and perceived social support in a subset of special education and general education teachers of students with ASD through semi-structured interviews.

**Quantitative Component and Hypotheses.** The current study’s quantitative component (Part 1) examined group differences between a sample of general education teachers who have taught at least one student with ASD during the past year (“general education teachers”), and a
comparison sample of special education teachers of students with ASD ("special education teachers"). First, the study examined group differences in reported self-efficacy in working with students with ASD ("self-efficacy") and reported levels of job satisfaction between general education and special education teachers. Second, the study examined differences in reported levels of occupational stress, perceived social support when working with students with ASD ("social support"), knowledge of ASD between both groups of teachers. Next, the study examined the relations between the two outcome variables (i.e., self-efficacy and job satisfaction) and four proposed correlates (i.e., occupational stress, social support, school resources, knowledge of ASD) in both groups.

Based on the reviewed literature, the following hypotheses were proposed for the current study’s quantitative component. First, the following group differences were hypothesized: reported levels of self-efficacy (1a) and job satisfaction (1b) would be lower in general education teachers when compared to special education teachers; general education teachers would report higher levels of occupational stress when compared to special education teachers (1c); general education teachers would report lower levels of social support (1d) and knowledge of ASD (1e) when compared to special education teachers. Next, to examine the correlates of both teacher self-efficacy and teacher job satisfaction, the following bivariate correlations were hypothesized: occupational stress would be negatively related to self-efficacy and job satisfaction in the combined sample of both general education teachers and special education teachers (2a; 3a). Social support (2b; 3b), school resources (2c; 3c), and knowledge of ASD (2d; 3d) would be positively related to self-efficacy and job satisfaction in the combined sample of both general education and special education teachers.

**Research Questions.** In addition to the hypotheses discussed above, exploratory research
questions examined differences in the correlates of teacher self-efficacy and teacher job
satisfaction according to geographic classification. More specifically, given the mixed findings
in the current literature regarding differences in occupational stress and professional support
experienced by rural and urban teachers overall, and the lack of literature examining differences
in the experiences of rural and urban special and general education teachers of students with
ASD, the following exploratory research questions were proposed:

1. Are there differences in the level of self-efficacy and job satisfaction reported by rural
   and urban teachers of students with ASD?

2. Are there differences in the level of occupational stress, social support, and
   knowledge of ASD reported by rural and urban teachers of students with ASD?

3. Are there differences in the level of self-efficacy and job satisfaction reported when
   the following subgroups are examined?: a) rural and urban special education teachers,
   b) rural and urban general education teachers

Qualitative Component. Due to the paucity of research examining the relations between
 occupational stress, social support and school resources, and the self-efficacy and job satisfaction
of teachers of students with ASD, the current study also included a qualitative component (Part
2). Researchers specializing in qualitative research practices agree that qualitative research
designs should be used when an issue is not well understood, or is ill-defined among researchers
(Auerbach & Silverstein, 2003; Ritchie et al., 2013). Additionally, researchers propose that the
use of a qualitative research design may be particularly helpful when the variables of interest are
“deeply set within the participants’ personal knowledge of understand of themselves” (Ritchie, et
al., 2013, p. 37). Therefore, by using qualitative inquiry, the current study sought to gain a better
understanding of personal factors that influence the attitudes and beliefs amongst an
understudied population.

The qualitative component of the current study utilized the methodological framework known as Interpretative Phenomenological Analysis (IPA; Smith et al., 2009) to examine a subset of general education and special education teachers’ perceptions of their self-efficacy and job satisfaction, and variables that might influence outcomes in those areas. IPA is a type of qualitative methodology that focuses on investigating and understanding how individuals make sense of their experiences. Specifically, IPA assumes that individuals are “self-interpreting beings,” and are therefore actively engaged in the interpretation of the objects, people, and events in their lives (Smith et al., 2009). IPA synthesizes principles of phenomenology, hermeneutics, and ideography to examine how people 1) perceive events and objects (rather than limiting these perceptions to a set of predetermined variables), 2) decode these perceptions, and 3) interpret any themes (Pietkiewicz & Smith, 2014). This process encourages the application of psychological theory and research in order to understand and interpret participants’ perceptions; therefore, IPA is thought to be especially well suited for studies within the field of psychology (Pietkiewicz & Smith, 2014; Smith & Osborn, 2008).

The qualitative component of the proposed study had two primary goals. First, the study sought to examine the everyday experiences of general education and special education teachers of students with ASD, specifically how they conceptualized their job satisfaction and self-efficacy in working with children with ASD. Teachers were also asked questions regarding what they found most challenging about working with students with ASD, what goals they had when working with these students, and how confident they were in their ability to achieve those goals. Second, the study examined variables that teachers believed to influence self-efficacy and job satisfaction. Teachers were asked what variables they believed were most related to their own
self-efficacy and job satisfaction. While questions regarding these variables were not limited to the proposed predictor and control variables, teachers’ opinions regarding the relations between the predictor/control variables and the outcome variables were examined specifically. Lastly, the study determined whether themes reported by the teachers varied according to resources present in the school community.
CHAPTER 2

METHODOLOGY

Participants

Study Part 1: Overall Sample.

The final sample for Part 1 (quantitative component) consisted of 17 (33.3%) general education teachers, 31 (60.8%) special education teachers, and three (5.9%) teachers who reported that they served as both a general and special education teacher, for a total of 51 teachers. These three teachers were subsequently categorized as special education teachers based on their self-reported teaching certifications, resulting in the following subsamples for the primary data analyses: general education teachers ($n = 17$), special education teachers ($n = 34$).

The sample was comprised of 48 females (94.1%) and three males (5.9%) who ranged in age from 22 to 59 years ($M = 36.1$ years, $SD = 10.8$ years). Ninety percent of the sample identified as Caucasian/White, 7.8% as Black/African American, and 2% identified as another race. When asked about their highest level of education, 37.3% of teachers reported having a bachelor’s or associates degree, while 62.7% reported having a post-graduate degree.

Demographic information specifically related to their roles as teachers was also assessed. Regarding their teaching certification, 39.2% of teachers were certified in special education, 23.5% were certified in general education, and 35.3% were certified in both general and special education. Additionally, within the subsample of special education teachers, 35.3% of teachers reported teaching in a resource room, 17.6% reported teaching in a self-contained classroom, 7.8% reported teaching in an inclusion classroom and another 7.8% reported teaching in another
type of setting. Within the full sample, grades taught by the participants ranged from kindergarten to fifth grade, with 43.1% of teachers teaching only one grade and 56.9% of teachers teaching more than one grade. Teachers’ total number of years teaching, and their total number of years teaching students with ASD both ranged from 1 to 25 years ($M = 10.61$ years, $SD = 6.72$ years; $M = 8.27$ years, $SD = 5.78$ years, respectively). Their average class size or caseload size ranged from three to 100 students ($M = 18.8$, $SD = 17.38$), and the average number of students with ASD in their class or on their caseload ranged from one to 13 students ($M = 3.39$, $SD = 2.86$). Finally, regarding the geographic location of their school, 64.7% of teachers taught in a school located in an urban or suburban area while 35.3% taught in a school located in a rural area. Additional demographic information can be found in Table 1.

**Table 1**

*Sample Characteristics: Participant Demographics*

<table>
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<th>Individual Characteristic</th>
<th>Overall Sample ($N = 51$)</th>
<th>Qualitative Subsample ($n = 10$)</th>
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<td>Kindergarten</td>
<td>5</td>
<td>9.8</td>
</tr>
<tr>
<td>First grade</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td>Second grade</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td>Third grade</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td>Fourth grade</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td>Fifth grade</td>
<td>5</td>
<td>9.8</td>
</tr>
</tbody>
</table>
Table 1, continued

Sample Characteristics: Participant Demographics

<table>
<thead>
<tr>
<th>Individual Characteristic</th>
<th>Overall Sample (N = 51)</th>
<th>Qualitative Subsample (n = 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple grades</td>
<td>29 (56.9)</td>
<td>6 (60.0)</td>
</tr>
<tr>
<td>Class Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General education</td>
<td>16 (31.4)</td>
<td>2 (20.0)</td>
</tr>
<tr>
<td>Special education</td>
<td>32 (62.7)</td>
<td>8 (80.0)</td>
</tr>
<tr>
<td>Both general and special education</td>
<td>3 (5.9)</td>
<td>--</td>
</tr>
<tr>
<td>Special Education Setting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inclusion classroom</td>
<td>4 (7.8)</td>
<td>--</td>
</tr>
<tr>
<td>Resource room</td>
<td>18 (35.3)</td>
<td>5 (50)</td>
</tr>
<tr>
<td>Self-contained classroom</td>
<td>9 (17.6)</td>
<td>1 (10)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (7.8)</td>
<td>2 (20)</td>
</tr>
<tr>
<td>Certification</td>
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<td></td>
</tr>
<tr>
<td>General education</td>
<td>12 (23.5)</td>
<td>1 (10.0)</td>
</tr>
<tr>
<td>Special education</td>
<td>20 (39.2)</td>
<td>4 (40.0)</td>
</tr>
<tr>
<td>Both general and special education</td>
<td>18 (35.3)</td>
<td>5 (50.0)</td>
</tr>
<tr>
<td>School Rural/Urban Classification</td>
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<tr>
<td>Rural</td>
<td>18 (35.3)</td>
<td>4 (40.0)</td>
</tr>
<tr>
<td>Urban/Suburban</td>
<td>33 (64.7)</td>
<td>6 (60.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
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</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>37.06</td>
<td>10.82</td>
<td>33.40</td>
<td>11.43</td>
</tr>
<tr>
<td>Years teaching</td>
<td>10.61</td>
<td>6.72</td>
<td>6.05</td>
<td>4.99</td>
</tr>
<tr>
<td>Years teaching students with ASD</td>
<td>8.27</td>
<td>5.78</td>
<td>4.05</td>
<td>2.75</td>
</tr>
<tr>
<td>Average class size</td>
<td>18.79</td>
<td>17.38</td>
<td>10.40</td>
<td>6.93</td>
</tr>
<tr>
<td>Average number of students with ASD</td>
<td>3.39</td>
<td>2.86</td>
<td>3.20</td>
<td>2.15</td>
</tr>
</tbody>
</table>

Study Part 2: Subsample. Teachers were recruited for Part 2 of the current study if they a) completed all the components of Part 1 of the study, and b) consented to be contacted for a follow-up interview. The final subsample for Part 2 included eight special education teachers and
two general education teachers, for a total of 10 teachers. Although every effort was made to recruit an equal number of special education and general education teachers, this subsample appears to be a reflection of the unequal distribution of general and special education teachers in the overall sample.

Participants in the Part 2 subsample were 100% female, 90% Caucasian/White, 10% Black/African American, and ranged in age from 24 to 59 years ($M = 33.4$ years, $SD = 11.43$ years). Sixty percent reported having a bachelor’s or associates degree, and 40% reported a post-graduate degree. For the eight special education teachers in the subsample, 50% reported teaching in a resource room, 10% reported teaching in a self-contained classroom, and 20% reported teaching in another type of special education classroom. Grades taught by teachers within this subsample ranged from kindergarten to fourth grade, with 40% teaching only one grade and 60% teaching more than one grade.

Total number of years teaching ranged from 1 to 17 years ($M = 6.05$ years, $SD = 5$ years), while their total number of years teaching students with ASD ranged from 1 to 9 years ($M = 4.05$ years, $SD = 2.75$ years). Their class sizes or caseloads ranged from four to 22 students ($M = 10.4$, $SD = 6.93$), and the number of students with ASD in their class or on their caseload ranged from one to six students ($M = 3.2$, $SD = 2.15$). Finally, 60% of teachers taught in a school located in urban or suburban areas while 40% taught in a school located in a rural area. Additional demographic information can be found in Table 1.

Materials

**Study Part 1.**

*Demographic questionnaires.* Teachers completed brief demographic questionnaires about themselves, their school, and their experience working with students with ASD. The
demographic questionnaires requested basic demographic information (e.g., age, gender, race),
professional information (e.g., grade(s) that they teach, education level, years of experience
teaching students with ASD), and information about their school (e.g., name of school, school zip code).

**Autism Self-Efficacy Scale for Teachers (ASSET).** The ASSET (Ruble, et al., 2013) is a
30-item self-report measure designed to assess the self-efficacy of teachers pertaining to working
with students with ASD. The ASSET assesses teachers’ perceptions of their content knowledge
and skills (i.e., efficacy) in various tasks associated with teaching students with ASD. Each
teacher was asked to rate their efficacy in carrying out tasks such as assessing the causes of
problematic behavior, designing positive behavioral supports, and helping the student
understand/be understood by other students in the classroom (Ruble et al., 2013). Teachers were
asked to rate the extent to which they feel they were able to perform these types of tasks, using a
100-point rating scale from (0) “Cannot do at all” to (100) “Highly certain can do”. The mean
score of all 30 items was then calculated, and higher scores reflect higher levels of self-efficacy
(Ruble et al., 2013). Although a relatively small number of studies have used the ASSET, it has
consistently demonstrated good internal consistency, with Cronbach’s alphas ranging between
.96 and .98 (Corona et al., 2017; Ruble et al., 2013). Similar results were found for the current
study with data yielding an alpha coefficient of .97.

**Teacher Job Satisfaction Questionnaire (TJSQ).** The TJSQ (Lester, 1987) is a 66-item
self-report questionnaire designed to measure job satisfaction among teachers. Teachers were
asked to rate the extent to which they agreed with statements within nine areas that influence job
satisfaction (i.e., supervision, colleagues, working conditions, pay, responsibility, work itself,
advancement, security and recognition; Lester, 1987). The TJSQ uses a five-point Likert scale
ranging from (1) “strongly disagree” to (5) “strongly agree.” Responses from all items were calculated (after reverse scoring the 29 unfavorable responses), and a total score was established. A low TJSQ total score represents low levels of job satisfaction, while a high TJSQ score represents high levels of job satisfaction (Lester, 1987). In previous studies, the TJSQ demonstrated good internal consistency, with alpha coefficients ranging from .83 to .93 for the total score (Lester, 1987; Sung et al., 2010). Although slightly lower than consistencies found in previous studies, estimates of internal consistency for the current sample were found to be adequate, with an alpha coefficient of .73.

**Teacher Stress Inventory, Short-Form A (TSI-SFA).** The TSI-SFA (Fimian, 1987) is a 25-item questionnaire designed to assess the degree of occupational stress experienced by teachers. The TSI-SFA is an abbreviated version of the original 49-item Teacher Stress Inventory (TSI; Fimian, 1984), and measures the same potential sources and manifestations of occupational stress. More specifically, the TSI-SFA measures five potential sources (i.e., time management, work-related stressors, professional distress, discipline and motivation, and professional investment), and five potential manifestations (i.e., emotional, fatigue, cardiovascular, gastronomic, and behavioral) of occupational stress. First, teachers were asked to identify situations that caused them stress and rate the degree of stress experienced in the situation. Next, teachers were presented with questions addressing the potential manifestations of occupational stress (e.g., physical exhaustion, feeling their heart pounding or racing, feeling anxious), and rated the degree to which they experience these manifestations (Fimian, 1984; 1987; 1988). The TSI-SFA uses a five-point Likert scale ranging from (1) “no strength; not noticeable” to (5) “major strength; extremely noticeable” for all questions. The TSI-SFA yields 10 subscale scores, as well as a TSI-SFA Total score. The TSI-SFA Total score was the primary TSI-SFA score
analyzed in the current study. A low TSI-SFA Total score represents low levels of occupational stress, whereas a high TSI-SFA Total score represents high levels of occupational stress. Overall, the TSI-SFA has demonstrated acceptable to good internal consistency with Cronbach’s alphas for the Total score ranging from .76 to .87 (Fimian, 1987). For the current sample, estimates of internal consistency for the Total score yielded an alpha coefficient of .92.

The Social Provisions Scale-10 item (SPS-10). The SPS-10 (Caron, 2013) is an abbreviated 10-item version of the 24-item Social Provisions Scale (Cutrona & Russell, 1987). While the SPS-10 was originally validated in French (Échelle de provisions sociales-10 items; Caron; 2013), researchers have used an adapted version which has been translated to English in multiple studies (e.g., Aschbrenner, 2016). The SPS-10 measures five perceived social support functions. These five functions are derived from Weiss’s model of social provisions, which categorizes social provisions into assistance-related (i.e., reassurance of worth, guidance, reliable alliance) and non-assistance-related (i.e., attachment, social integration) support (Cutrona & Russell, 1987; Weiss, 1974). Participants were asked to rate the degree to which they agree with each response using a four-point Likert scale ranging from (1) “strongly disagree” to (4) “strongly agree.” A total SPS-10 score was calculated by summing responses to all items after reverse-coding negatively worded items. The SPS-10 has demonstrated strong concurrent validity with the original 24-item scale (r = .93; Cutrona & Russell, 1987), and has also demonstrated good internal consistency, with Cronbach’s alpha of .88 for the total score. Estimates of internal consistency for the current study yielded a similar alpha coefficient of .87.

The Autism Inclusion Questionnaire, Knowledge of ASD Section (AIQ). The Knowledge of ASD section of the AIQ (Segall & Cambell, 2007; 2012) is a 15-item measure that was developed to assess three areas of ASD-related knowledge: diagnosis and
symptomatology, treatment, and etiology. Respondents were asked to indicate if each item was true or false. Additionally, a “Don’t Know” option is included for each item, and respondents were instructed to select this option if they did not know the answer, rather than guessing on the item. A Knowledge Total Score was calculated by summing the number of correct responses. Additionally, in line with practices suggested by the measure authors, a Percent Correct Score was determined by first calculating the difference between 15 and the number of “Don’t Know” responses, and then dividing the Knowledge Total Score by this number. In previous studies, the Knowledge of ASD Section of the AIQ has demonstrated good internal consistency with Cronbach’s alphas ranging from .83 to .86 (Segall, 2007; 2011). For the current sample, estimates of internal consistency for the AIQ yielded an alpha coefficient of .79 which is considered adequate.

**School Situations Questionnaire (SSQ).** The SSQ (Barkley & Edelbrock, 1987) is a 12-item measure that was developed to assess the severity of a child’s behavior problems across various school situations. Respondents were presented with 12 classroom situations (e.g., free play, lunch, small group activities), and were first asked to indicate whether or not a child demonstrates problem behaviors in each situation. For the current study, teachers were asked to rate the behaviors of a student with ASD whom they were currently teaching or had taught within the last year whom they consider to have demonstrated problem behaviors. Teachers were then asked to rate the severity of the problem behavior in each relevant situation on a nine-point Likert scale ([1] “mild” to [9] “severe”; Barkley & Edelbrock, 1987). The SSQ yields two summary scores: mean severity and number of problems. The SSQ has demonstrated good internal consistency in past research with Cronbach’s alphas ranging between .84 to .92 for both summary scores (Altepeter & Breen, 1989). Estimates of internal consistency for the current
sample yielded an alpha coefficient of .85 for both the Total Problems Score and the Severity Score.

School Resources. Current policies within the Every Student Succeeds Act (2015), a federal law which governs public education policy, require information regarding how much money individual public schools spend educating students. Data published for the state of Alabama for the 2017-2018 school year were used to determine the amount of financial resources received by each participant’s school. The monetary amount included in the current study and published in this state-wide data represent the total amount of federal, state and local funding dollars that was spent per student in each school (Alabama State Department of Education, 2019).

Study Part 2.

Semi-structured interview. Given that IPA allows researchers to gather detailed information while maintaining flexibility, most qualitative studies using IPA collect data through semi-structured interviews (Smith & Osborn, 2008). The semi-structured interview included in Part 2 of the current study addressed teachers’ perceptions of their self-efficacy and job satisfaction, and variables that influenced outcomes in those areas. Specifically, in order to examine their everyday experiences and how they conceptualized their job satisfaction and self-efficacy in working with children with ASD, teachers were asked questions regarding what they found most challenging about working with students with ASD, what goals they had when working with these students, and how confident they were in their ability to achieve these goals. Additionally, to examine variables that teachers believe to influence self-efficacy and job satisfaction, teachers were asked what variables they believed were most related to self-efficacy
and job satisfaction. Although the researcher followed the same prompts for each interview, follow-up questions differed slightly depending on responses from each teacher.

A pilot review of the questions was conducted with two University of Alabama graduate students who had experience working with students with ASD to ensure that the semi-structured interview accurately addressed the research questions. Two mock interviews were also conducted to assess the approximate length of time needed to complete future interviews.

Procedures

Recruitment. Approval from The University of Alabama Institutional Review Board was obtained prior to recruitment and data collection for the present study, and participation in the current study was confidential and voluntary. Participants were recruited through education-specific conferences, social media pages, and snowball sampling technique. Participants were considered eligible for the study if they met the following inclusion criteria: participant was serving as a certified public-school teacher of grades kindergarten through fifth grade teaching in the state of Alabama at the time of the study; participant was currently teaching a student with ASD or had taught a student with ASD within the past year. All teachers received compensation for completing the study. Specifically, participants who completed Part 1 of the study received a $10 gift card to a national retailer as compensation for their time and effort in completing the survey, and participants who completed Part 2 of the study received an additional $10 gift card ($20 total for those who completed both portions of the study).

Data Collection. All participants completed the quantitative measures included in Part 1 of the study via Qualtrics, an online survey platform (www.qualtrics.com). After expressing interest in the study, teachers followed a link to a secure website included on the recruitment flyer on which they were asked to answer two questions (i.e., “Are you a certified kindergarten
through fifth grade public-school teacher;” “Are you currently teaching a student with autism or have you in the past year” to determine eligibility, provide their name and email address, and verify their consent to be contacted about participating in the study. Teachers who met eligibility criteria and consented to be contacted were sent an email with a separate link to provide consent for Part 1 and complete the study measures on Qualtrics.

Whereas the quantitative measures included in Part 1 of the study were completed by all teachers, Part 2 of the study was only completed with a subset of special education and general education teachers. After completing the measures in Part 1, teachers were given a brief description of Part 2 of the study and were asked if they would like to participate in the qualitative portion. A purposeful sample of the teachers who consented to be contacted for Part 2 of the study was then selected by the examiners. Teachers for Part 2 of the study were selected based on two factors: type of teacher (i.e., special education versus general education) and geographic factors (i.e., teachers who teach in rural versus urban counties) in an effort to obtain a diverse sample. Although even samples of general and special education teachers for the Part 2 subsample were initially proposed, this proved to be difficult given the uneven distribution of general and special education teachers in the full sample. Specific responses from the measures completed in Part 1 of the study were not examined; however, researchers confirmed that teachers recruited for Part 2 completed all the components of Part 1 prior to recruitment for Part 2. Teachers who met the above criteria and consented to be contacted for Part 2 of the study were contacted via email to schedule an interview.

During the interviews, qualitative data were gathered through a semi-structured interview. Due to the COVID-19 pandemic, all semi-structured interviews were completed over the phone or via online video conferencing. Although face-to-face interviewing has been found
to increase trust and cooperation during qualitative data collection (Holbrook et al., 2003), research comparing in-person and remote interviewing methods has not found significant differences in the content gathered (Sturges & Hanrahan, 2004). While scheduling the interviews, the primary investigator encouraged teachers to select a location in which they felt comfortable discussing their experiences, and where they felt their privacy could appropriately be maintained. At the beginning of each interview session, the investigator reviewed informed consent, documented the teacher’s consent, and obtained permission to make an audio recording of the interview. The semi-structured interview was then completed. Following this, the primary investigator reviewed a debriefing document, addressed any questions or concerns that the teacher had, and provided the additional $10 compensation.

Design and Analyses

Quantitative analysis. Quantitative analyses were conducted using SPSS. Descriptive analyses were conducted to examine means, standard deviations, skewness, and kurtosis of all quantitative variables. Demographic and professional variables, and degree of child behavior problems were correlated with the outcome variables, and any variables that were found to relate to the variables of interest at the $p < .05$ level were considered for inclusion as a covariate in the following analyses.

Although five independent samples t-tests were initially proposed to examine group differences in self-efficacy (Hypothesis 1a), job satisfaction (Hypothesis 1b), occupational stress (Hypothesis 1c), social support (Hypothesis 1d) and knowledge of ASD (Hypothesis 1e), the data analytic plan was adjusted to control for the covariates that were found to be correlated with the variable of interest (Hypotheses 1a-c) and accommodate unequal sample sizes (Hypothesis 1d-e). More specifically, three one-way analyses of covariance (ANCOVAs) were used to
examine group differences in self-efficacy, job satisfaction, and occupational stress while controlling for covariates. Given the unequal group sample sizes (general education teachers, \( n = 17 \); special education teachers, \( n = 34 \)) Welch’s \( t \)-tests were used to examine group differences in perceived social support and knowledge of ASD, given the test’s robustness to unequal sample sizes (Field, 2009).

Next, the relations between the two proposed outcome variables and the four proposed correlates were examined using the combined sample of general education and special education teachers (Hypotheses 2 & 3). Although a series of eight bivariate correlations were initially proposed to examine these relations, partial correlations were instead used to control for the variable(s) found to be correlated with the primary variables of interest. Specifically, the first four partial correlations examined the relations between teacher self-efficacy and occupational stress (Hypothesis 2a), social support (Hypothesis 2b), school resources (Hypothesis 2c) and knowledge of ASD (Hypothesis 2d) while controlling for community resources (due to its correlation with self-efficacy). The next four partial correlations examined the relations between teacher job satisfaction and the same four variables (Hypotheses 3a-3d) while controlling participant age, total amount of ASD-specific training received, total number of years teaching, and total number of years teaching students with ASD (each of these variables correlated with job satisfaction). Potential covariates and their correlations with the variables of interest are included in Table 4.

Three exploratory research questions were also proposed to further examine potential differences in teacher self-efficacy and teacher job satisfaction according to geographic classification. First, group differences between rural and urban teachers’ levels of self-efficacy (Research Question 1a), job satisfaction (Research Question 1b), occupational stress (Research
Question 2a), social support (Research Question 2b), and knowledge of ASD (Research Question 2c) were examined. Specifically, the following research questions were posed: Are there differences in the levels of self-efficacy (1a) and job satisfaction (1b) reported by rural and urban teachers of students with ASD?; Are there differences in the levels of occupational stress (2a), social support (2b), and knowledge of ASD (2c) reported by rural and urban teachers of students with ASD?

Similar to the analyses used to test Hypothesis 1, ANCOVAs were used in place of the originally proposed independent samples t-tests to examine group differences in self-efficacy, job satisfaction, and occupational stress to allow for control of the covariates correlated with each variable. Additionally, Welch’s t-tests were used to examine group differences in perceived social support and knowledge of ASD, given the test’s robustness to unequal sample sizes (urban teachers, \( n = 33 \); rural teachers, \( n = 18 \); Field, 2009), and the absence of covariates associated with both variables.

Finally, the following research question was posed: Are there group differences in the levels of self-efficacy and job satisfaction reported when the following subgroups are examined?, a) rural and urban special education teachers, b) rural and urban general education teachers. Given the small and unequal sample sizes present when examining group differences between subgroups of special education (rural special education teachers, \( n = 12 \); urban special education teachers, \( n = 23 \)) and general education (rural general education teachers, \( n = 6 \); urban general education teachers, \( n = 10 \)) teachers, Mann-Whitney U tests were used. Non-parametric Mann-Whitney U tests assess the rank or median of the sample rather than the mean and can be used when data fails the assumptions of an independent samples t-test due to small sample sizes or non-normally distributed data (Field, 2009).
Qualitative analysis. As with all qualitative research, the goal of the qualitative data analysis in the current study was to generate themes and ideas from the information gathered (Auerbach & Silverstein, 2003; Smith et al., 2009). Specifically, qualitative data were analyzed in order to gain a better understanding of general education and special education teachers’ perceptions of their self-efficacy and job satisfaction, and variables that influenced outcomes in those areas. The primary investigator began by generating a transcript from an audio recording from each semi-structured interview. Transcripts of the interviews were then uploaded into NVivo, a qualitative data analysis software program which aids in organization and analysis of non-numerical or unstructured data (QSR International, 2015). NVivo enables researchers to classify and code qualitative information, examine relationships within the data, and conduct text queries and word frequency counts (QSR International, 2015). After being uploaded to NVivo, each transcript was read at least twice, and the primary investigator documented the content, distinctive phrases, emotional responses, and potentially significant comments for each interview. Each interview was analyzed completely before moving to the next interview. This process was repeated for each interview (Pietkiezicz & Smith, 2014). After collecting detailed notes regarding the content, distinctive phrases, and emotional responses for each interview, the primary investigator worked to identify emerging themes. These emerging themes were examined, and the primary investigator grouped themes that were conceptually similar, creating connections and groups that include primary themes and subthemes (Pietkiezicz & Smith, 2014). Finally, these themes and subthemes were organized into a table along with brief extracts from the interviews to exemplify each theme (Table 17).

Investigator triangulation, a qualitative validation strategy in which two or more researchers collaborate during data collection and/or data analysis, was employed to ensure
consistency and balance out the subjective influence of individual researchers (Denzin, 1989). Results from a 2016 review of the use of investigator triangulation within mixed methods research found that the collaborative strategy was most often used during the data analysis stage of a study; however, there was lack of consensus regarding the exact nature of the collaboration (i.e., number of transcripts analyzed by multiple researchers; whether researchers coded transcripts independently or as a team; Archibald, 2016). However, the review noted a consensus among researchers that the small collaborative group should reflect some diversity of skills, trainings and/or disciplinary backgrounds (Archibald, 2016). Following this methodology, three researchers coded one of the transcripts in order to ensure valid and consistent coding and balance any bias in the interpretation of the data. This independent coding was reviewed and inter-rater reliability between the three coders for these initial analyses was .69. Discrepancies were examined and consensus between the research team was established for final codes.

Although this group approach was employed partially to address any researcher bias, it is understood that it is impossible to completely eliminate a researcher’s subjectivity (i.e., their theories, beliefs and perceptual lens) from the qualitative research process (Maxwell, 2012). Rather than eliminating researcher subjectivity, the goal of qualitative research is to simply discuss and understand the potential influence of the researcher’s expectations or values (Maxwell, 2012). In order to continuously address these, and any other methodological or analytic concerns, the primary investigator employed memoing throughout the research process. Memoing is considered an essential technique for qualitative data analysis (Groenewald, 2008; Strauss, 1987), as it allows researchers to reflect on their methods, theories, and experiences, document how they are analyzing their data, and can facilitate further analyses and insights (Maxwell, 2012). Following standard mixed methods methodology, an integrative table was
created to depict a side-by-side joint display of the quantitative and qualitative findings (See Table 18).
CHAPTER 3

RESULTS

Quantitative Results

Prior to any data analysis, all data were examined descriptively. Data were examined for any significant outliers or irregularities, and skewness and kurtosis were examined for each variable of interest (see Table 2). When examining skewness and kurtosis, values between -2 and +2 were considered acceptable for normal distribution (George & Mallery, 2010). The ASSET Total score, TJSQ Total score, TSI Total score, SPS-10 Total score, and SSQ Total Problems score were all consistent with symmetrical and mesokurtic distributions (Table 2). However, the SSQ Mean Severity score was found to be consistent with a symmetrical ($z = -.775$) but leptokurtic ($z = 2.181$) distribution, the AIQ Percent Correct score was found to be consistent with a negatively skewed ($z = -2.618$) and leptokurtic ($z = 10.621$) distribution, and the School Resources score was found to be consistent with a positively skewed ($z = 4.046$) and platykurtic ($z = 19.198$) distribution. Outliers for these variables were further identified through boxplots in SPSS (IBM SPSS, 2016), and outlying scores were winsorized, meaning they were replaced with the next highest or lowest score, which resulted in more symmetrical and mesokurtic distributions among the three variables (Ghosh & Vogt, 2012; Table 2). For all three variables, symmetrical and mesokurtic distribution was achieved after two outlying scores were winsorized. The AIQ Percent Correct transformed score, SSQ Mean Severity transformed score, and School Resources transformed score are included in Table 2 and were used in all subsequent analyses.
Next, intercorrelations of the variables of interest were examined using Pearson correlations (see Table 4). Correlations related to the main hypotheses will be discussed in further detail when examining the results of the hypotheses tested.

**Preliminary Analyses**

**Covariates.** Demographic variables, (e.g., age, education level), professional variables (e.g., total number of years teaching, total number of years teaching students with ASD, total amount of ASD-specific training received, total number of ASD-related resources available to participant), and degree (SSQ Total Problems) and severity (SSQ Mean Severity) of student behavior problems were examined as potential covariates prior to analysis of each hypothesis. Covariates were determined using bivariate correlations between possible control variables and the variables of interest (i.e., self-efficacy, job satisfaction, occupational stress, perceived social support, knowledge of ASD, state-reported school resources; see Table 4).

The following variables were related to at least one variable of interest at the $p < .05$ level: participant’s age, participant’s education level, total amount of ASD-specific training received, total number of years teaching, total number of years teaching students with ASD, total number of ASD-related resources available to participant, and degree of student behavior problems. Inclusion of covariates in each analysis was dependent on the control variables’ correlation with the variables of interest, and planned statistical analyses were adjusted when necessary to control for these covariates.
Table 2

Descriptives of Variables of Interest

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Range</th>
<th>Skew</th>
<th>Kurtosis</th>
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<td>.12</td>
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<td>Job Satisfaction</td>
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<td>103 - 143</td>
<td>.002</td>
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<td>Occupational Stress</td>
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<td>-.44</td>
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<td>Social Support</td>
<td>34.88</td>
<td>3.77</td>
<td>24 - 40</td>
<td>-.56</td>
<td>-.12</td>
</tr>
<tr>
<td>Knowledge of ASD(^a)</td>
<td>.75</td>
<td>.11</td>
<td>.47 - 1</td>
<td>-.72</td>
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<tr>
<td>School Resources(^a)</td>
<td>10390.28</td>
<td>2134.32</td>
<td>7858 - 15241</td>
<td>1.22</td>
<td>.51</td>
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<tr>
<td>Bhv. Probs.-Frequency</td>
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<td>3.43</td>
<td>0 - 12</td>
<td>-.52</td>
<td>-.65</td>
</tr>
<tr>
<td>Bhv. Probs.-Severity(^a)</td>
<td>4.55</td>
<td>1.01</td>
<td>2.4 - 7</td>
<td>.06</td>
<td>.26</td>
</tr>
</tbody>
</table>

Note. Self-Efficacy = Self-efficacy when working with students with ASD as measured by the ASSET (Autism Self-Efficacy Scale for Teachers); Job Satisfaction = Teacher Job Satisfaction as measured by the TJSQ (Teacher Job Satisfaction Questionnaire); Knowledge of ASD = teacher’s knowledge of the symptomatology, treatment, and etiology of ASD as measured by the Knowledge of ASD Section of the Autism Inclusion Questionnaire; Social Support = teachers perceived social support as measured by the SPS-10 (The Social Provisions Scale-10 item); Occupational Stress = teachers’ level of occupational stress as measured by the TSI-SFA (Teacher Stress Inventory, Short Form A); School Resources = Federal, State and Local funding provided for each student as reported by the AL Department of Education; Bhv. Probs.-Frequency = Frequency of student behavior problems as measured by the SSQ Total Problems Score; Bhv. Probs.-Severity = Severity of student behavior problems as measured by the SSQ Mean Severity Score; \( M \) = mean; \( SD \) = standard deviation.
\(^a\)Descriptive statistics for winsorized variables.

Table 3

Intercorrelations of Variables of Interest

<table>
<thead>
<tr>
<th></th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
</tr>
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<tbody>
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<td>.03</td>
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<td>2. Job Satisfaction</td>
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<td>.21</td>
<td>.33*</td>
<td>-.42**</td>
<td>.03</td>
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<tr>
<td>3. Knowledge of ASD</td>
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<td>-.04</td>
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<tr>
<td>4. Social Support</td>
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<td>-.52**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5. Occupational Stress</td>
<td>---</td>
<td>-</td>
<td>.19</td>
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<td></td>
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<td>6. School Resources</td>
<td>---</td>
<td>-</td>
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<td></td>
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</tbody>
</table>

Note. Self-Efficacy = Self-efficacy when working with students with ASD as measured by the ASSET (Autism Self-Efficacy Scale for Teachers); Job Satisfaction = Teacher Job Satisfaction as measured by the TJSQ (Teacher Job Satisfaction Questionnaire); Knowledge of ASD = teacher’s knowledge of the symptomatology, treatment, and etiology of ASD as measured by the Knowledge of ASD Section of the Autism Inclusion Questionnaire; Social Support = teachers perceived social support as measured by the SPS-10 (The Social Provisions Scale-10 item); Occupational Stress = teachers’ level of occupational stress as measured by the TSI-SFA (Teacher Stress Inventory, Short Form A); School Resources = Federal, State and Local funding provided for each student as reported by the AL Department of Education; **\( p < .01 \), *\( p < .05 \).
Analyses for Main Hypotheses

Analyses for Hypothesis 1. The following group differences between general education teachers and special education teachers were hypothesized: 1a) reported levels of self-efficacy would be lower in general education teachers when compared to special education teachers; 1b) reported levels of job satisfaction would be lower in general education teachers when compared to special education teachers; 1c) general education teachers would report higher levels of occupational stress when compared to special education teachers; 1d) general education teachers would report lower levels of perceived social support when compared to special education teachers; and 1e) general education teachers would report lower levels of knowledge of ASD when compared to special education teachers.
Hypotheses 1a through 1c were examined via three one-way ANCOVAs examining group differences between general and special education teachers. Results of the first ANCOVA revealed no significant difference in self-efficacy, $F(1,48) = 1.44, p = .24, \eta^2 = .03$ when controlling for community resources (Table 5). Results of the second ANCOVA also revealed no significant difference in job satisfaction, $F(1,44) = 2.55, p = .12, \eta^2 = .07$ between the two groups when controlling for participant’s age, the total amount of ASD-specific training received, total number of years teaching, and total number of years teaching students with ASD (Table 6). Similarly, results of the third ANCOVA revealed no significant difference in occupational stress, $F(1,46) = .69, p = .41, \eta^2 = .01$ when controlling for total years teaching and community resources (Table 7). For Hypothesis 1d, a Welch’s $t$-test revealed no significant difference in perceived social support between general ($M = 34.82, SD = 4.35$) and special education ($M = 34.91, SD = 3.51$) teachers, $t(26.75) = -.07, p = .94, d = .02$ (Table 8). Finally, for Hypothesis 1e, a second Welch’s $t$-test revealed no significant difference in ASD-specific knowledge between general ($M = .76, SD = .11$) and special education ($M = .73, SD = .17$) teachers, $t(32.68) = .52, p = .61, d = .2$ (Table 9).

Table 5

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>$N$</td>
<td>$M$</td>
</tr>
<tr>
<td>Gen. Ed. Teacher</td>
<td>17</td>
<td>76.69</td>
</tr>
<tr>
<td>SPED Teacher</td>
<td>34</td>
<td>80.77</td>
</tr>
</tbody>
</table>

Note. Self-Efficacy = Self-efficacy when working with students with ASD as measured by the ASSET (Autism Self-Efficacy Scale for Teachers); Gen. Ed. Teacher = General Education Teacher; SPED Teacher = Special Education Teacher; $N$ = number of participants; $M$ = mean; $SD$ = standard deviation; $SE$ = standard error.
### Table 6

**Adjusted and Unadjusted Group Means and Variability for Job Satisfaction with Age, ASD-Specific Training, Years Teaching, and Years Teaching Students with ASD as Covariates**

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted</th>
<th></th>
<th>Adjusted</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Gen. Ed. Teacher</td>
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<td>128.59</td>
<td>6.73</td>
<td>128.58</td>
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<tr>
<td>SPED Teacher</td>
<td>34</td>
<td>123.47</td>
<td>10.04</td>
<td>123.88</td>
</tr>
</tbody>
</table>

*Note. Job Satisfaction = Teacher Job Satisfaction as measured by the TJSQ (Teacher Job Satisfaction Questionnaire); ASD-Specific Training = Amount of formal ASD-specific training self-reported by teacher; Gen. Ed. Teacher = General Education Teacher; SPED Teacher = Special Education Teacher; N = number of participants; M = mean; SD = standard deviation; SE = standard error.*

### Table 7

**Adjusted and Unadjusted Group Means and Variability for Occupational Stress with Years Teaching and Years Teaching Students with ASD as Covariates**

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted</th>
<th></th>
<th>Adjusted</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Gen. Ed. Teacher</td>
<td>17</td>
<td>64.41</td>
<td>16.82</td>
<td>63.78</td>
</tr>
<tr>
<td>SPED Teacher</td>
<td>34</td>
<td>68.18</td>
<td>16.24</td>
<td>67.87</td>
</tr>
</tbody>
</table>

*Note. Occupational Stress = teachers’ level of occupational stress as measured by the TSI-SFA (Teacher Stress Inventory, Short Form A); Gen. Ed. Teacher = General Education Teacher; SPED Teacher = Special Education Teacher; N = number of participants; M = mean; SD = standard deviation; SE = standard error.*

### Table 8

**Results of Welch’s t-test Comparing General and Special Education Teachers’ Social Support**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen. Ed. Teacher</td>
<td>17</td>
<td>34.82</td>
<td>4.35</td>
<td>-.07</td>
<td>26.75</td>
<td>.94</td>
</tr>
<tr>
<td>SPED Teacher</td>
<td>34</td>
<td>34.91</td>
<td>3.51</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note. Social Support = teachers perceived social support as measured by the SPS-10 (The Social Provisions Scale-10 item); Gen. Ed. Teacher = General Education Teacher; SPED Teacher = Special Education Teacher; N = number of participants; M = mean; SD = standard deviation; t = T-score; df = degrees of freedom; p = significance.*
Table 9

Results of Welch’s t-test Comparing General and Special Education Teachers’ Knowledge of ASD

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen. Ed. Teacher</td>
<td>17</td>
<td>0.76</td>
<td>0.11</td>
<td>.516</td>
<td>32.67</td>
<td>.31</td>
</tr>
<tr>
<td>SPED Teacher</td>
<td>34</td>
<td>0.75</td>
<td>0.11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Knowledge of ASD = teacher’s knowledge of the symptomatology, treatment, and etiology of ASD as measured by the Knowledge of ASD Section of the Autism Inclusion Questionnaire; Gen. Ed. Teacher = General Education Teacher; SPED Teacher = Special Education Teacher; N = number of participants; M = mean; SD = standard deviation; t = T-score; df = degrees of freedom; p = significance.

Analyses for Hypothesis 2. The second hypothesis (teacher self-efficacy will be negatively related to occupational stress [2a] and positively related to social support [2b], school resources [2c] and knowledge of ASD [2d]) was analyzed via partial correlation analyses. Analyses revealed no significant correlation between teacher self-efficacy and occupational stress ($r = -0.08, p = .6$), perceived social support ($r = 0.02, p = .92$), school resources ($r = 0.01, p = .96$), or knowledge of ASD ($r = -0.26, p = .07$) when controlling for ASD-specific resources available in teachers’ communities (see Table 10).
### Table 10

**Partial Correlations of Self-Efficacy and Occupational Stress, Social Support, School Resources and Knowledge of ASD**

<table>
<thead>
<tr>
<th>Control Variable</th>
<th>Self-Efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASD-Specific Resources</td>
<td>Self-Efficacy</td>
</tr>
<tr>
<td>Occupational Stress</td>
<td>-.08</td>
</tr>
<tr>
<td>Social Support</td>
<td>.02</td>
</tr>
<tr>
<td>School Resources</td>
<td>.01</td>
</tr>
<tr>
<td>Knowledge of ASD</td>
<td>-.26</td>
</tr>
</tbody>
</table>

*Note. Self-Efficacy = Self-efficacy when working with students with ASD as measured by the ASSET (Autism Self-Efficacy Scale for Teachers); Occupational Stress = teachers’ level of occupational stress as measured by the TSI-SFA (Teacher Stress Inventory, Short Form A); Social Support = teachers perceived social support as measured by the SPS-10 (The Social Provisions Scale-10 item); School Resources = Federal, State and Local funding provided for each student as reported by the AL Department of Education; Knowledge of ASD = teacher’s knowledge of the symptomatology, treatment, and etiology of ASD as measured by the Knowledge of ASD Section of the Autism Inclusion Questionnaire; ASD-Specific Resources = Resources available in teachers’ communities if they have a student with ASD.*

**Analyses for Hypothesis 3.** The third hypothesis (teacher job satisfaction will be negatively related to occupational stress [3a] and positively related to social support [3b], school resources [3c] and knowledge of ASD [3d]) was also analyzed via partial correlation analyses. While controlling for participant’s age, the total amount of ASD-specific training received, total number of years teaching, and total number of years teaching students with ASD, analyses revealed no significant correlation between teacher job satisfaction and school resources ($r = -.11, p = .49$), or knowledge of ASD ($r = .17, p = .25$). However, a significant negative correlation emerged between job satisfaction and occupational stress ($r = -.34, p = .02$), and a significant positive correlation between job satisfaction and perceived social support ($r = .42, p = .004$), when controlling for the same four covariates (see Table 11).
Table 11

Partial Correlations of Job Satisfaction and Occupational Stress, Social Support, School Resources and Knowledge of ASD

<table>
<thead>
<tr>
<th>Control Variable</th>
<th>Job Satisfaction</th>
<th>Occupational Stress</th>
<th>Social Support</th>
<th>School Resources</th>
<th>Knowledge of ASD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Job Satisfaction</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>ASD-Specific Training</td>
<td>Occupational Stress</td>
<td>-.34*</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Years Teaching</td>
<td>Social Support</td>
<td>.42**</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Years Teaching ASD</td>
<td>School Resources</td>
<td>-.11</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Knowledge of ASD</td>
<td></td>
<td>.17</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Note. Job Satisfaction = Teacher Job Satisfaction as measured by the TJSQ (Teacher Job Satisfaction Questionnaire); Occupational Stress = teachers’ level of occupational stress as measured by the TSI-SFA (Teacher Stress Inventory, Short Form A); Social Support = teachers perceived social support as measured by the SPS-10 (The Social Provisions Scale-10 item); School Resources = Federal, State and Local funding provided for each student as reported by the AL Department of Education; Knowledge of ASD = teacher’s knowledge of the symptomatology, treatment, and etiology of ASD as measured by the Knowledge of ASD Section of the Autism Inclusion Questionnaire; ASD-Specific Training = Amount of formal ASD-specific training self-reported by teacher; ** p < .01. * p < .05.

Analyses for Research Questions

Analyses for Research Questions 1 and 2. Research questions 1a, 1b and 2a were analyzed via three one-way ANCOVAs examining group differences between rural and urban teachers. The first one-way ANCOVA revealed no significant difference in self-efficacy between the two groups after controlling for community resources, $F(1,48) = .69, p = .41, \eta^2 = .01$ (Table 12). Similarly, the second one-way ANCOVA revealed no significant difference in job satisfaction, $F(1,44) = .24, p = .63, \eta^2 = .01$, while controlling for participant age, the total amount of ASD-specific training received, total number of years teaching, and total number of years teaching students with ASD (Table 13). Finally, the third one-way ANCOVA revealed no significant difference in occupational stress between the groups, $F(1,46) = 3.31, p = .08, \eta^2 = .07$, while controlling for the total number of years teaching and the total number of community resources (Table 14).
Research questions 2b and 2c were analyzed via two Welch’s $t$-tests examining group differences between these rural and urban groups. Whereas the first Welch’s $t$-test revealed no significant difference in perceived social support between rural ($M = 34.72$, $SD = 3.71$) and urban ($M = 34.97$, $SD = 3.85$) teachers, $t(36.25) = -.23$, $p = .82$, $d = .07$, (Table 15), the second Welch’s $t$-test showed that rural teachers ($M = .79$, $SD = .06$) reported significantly higher levels of ASD-specific knowledge when compared to urban teachers ($M = .73$, $SD = .12$), $t(48.94) = 2.29$, $p = .03$, $d = .58$, (Table 15).

Table 12

_Adjusted and Unadjusted Group Means and Variability for Self-Efficacy with Community Resources as a Covariate_

<table>
<thead>
<tr>
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<td></td>
<td>$n$</td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>Rural Teacher</td>
<td>18</td>
<td>80.39</td>
<td>12.28</td>
<td>81.30</td>
</tr>
<tr>
<td>Urban/Suburban Teacher</td>
<td>33</td>
<td>78.88</td>
<td>12.98</td>
<td>78.39</td>
</tr>
</tbody>
</table>

_Note_. Self-Efficacy = Self-efficacy when working with students with ASD as measured by the ASSET (Autism Self-Efficacy Scale for Teachers); $N =$ number of participants; $M =$ mean; $SD =$ standard deviation; $SE =$ standard error.

Table 13

_Adjusted and Unadjusted Group Means and Variability for Job Satisfaction with Age, ASD-Specific Training, Years Teaching, and Years Teaching Students with ASD as Covariates_

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n$</td>
<td>$M$</td>
<td>$SD$</td>
<td>$M$</td>
</tr>
<tr>
<td>Rural Teacher</td>
<td>18</td>
<td>126.06</td>
<td>9.75</td>
<td>126.24</td>
</tr>
<tr>
<td>Urban/Suburban Teacher</td>
<td>33</td>
<td>124.70</td>
<td>9.20</td>
<td>124.90</td>
</tr>
</tbody>
</table>

_Note_. Job Satisfaction = Teacher Job Satisfaction as measured by the TJSQ (Teacher Job Satisfaction Questionnaire); ASD-Specific Training = Amount of formal ASD-specific training self-reported by teacher; $N =$ number of participants; $M =$ mean; $SD =$ standard deviation; $SE =$ standard error.
Table 14

Adjusted and Unadjusted Group Means and Variability for Occupational Stress with Years Teaching and Years Teaching Students with ASD as Covariates

<table>
<thead>
<tr>
<th></th>
<th>Unadjusted</th>
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</thead>
<tbody>
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<td>n</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SE</td>
</tr>
<tr>
<td>Rural Teacher</td>
<td>18</td>
<td>70.50</td>
<td>16.30</td>
<td>72.01</td>
<td>3.71</td>
</tr>
<tr>
<td>Urban/Suburban Teacher</td>
<td>33</td>
<td>64.97</td>
<td>16.31</td>
<td>63.49</td>
<td>2.77</td>
</tr>
</tbody>
</table>

*Note.* Occupational Stress = teachers’ level of occupational stress as measured by the TSI-SFA (Teacher Stress Inventory, Short Form A); N = number of participants; M = mean; SD = standard deviation; SE = standard error.

Table 15

Results of Welch’s t-test Comparing Rural and Urban/Suburban Teachers’ Social Support

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>18</td>
<td>34.72</td>
<td>3.71</td>
<td>-.23</td>
<td>36.25</td>
<td>.41</td>
</tr>
<tr>
<td>Urban/Suburban</td>
<td>33</td>
<td>34.99</td>
<td>3.85</td>
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</tbody>
</table>

*Note.* Social Support = teachers perceived social support as measured by the SPS-10 (The Social Provisions Scale-10 item); N = number of participants; M = mean; SD = standard deviation; t = T-score; df = degrees of freedom; p = significance.

Table 16

Results of Welch’s t-test Comparing Rural and Urban/Suburban Teachers’ Knowledge of ASD

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Rural</td>
<td>18</td>
<td>0.79</td>
<td>0.06</td>
<td>2.29</td>
<td>48.93</td>
<td>.01</td>
</tr>
<tr>
<td>Urban/Suburban</td>
<td>33</td>
<td>0.73</td>
<td>0.12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Knowledge of ASD = teacher’s knowledge of the symptomatology, treatment, and etiology of ASD as measured by the Knowledge of ASD Section of the Autism Inclusion Questionnaire; N = number of participants; M = mean; SD = standard deviation; t = T-score; df = degrees of freedom; p = significance.

**Analyses for Research Question 3.** Research question 3 was analyzed via four Mann-Whitney U tests examining group differences between rural and urban special education teachers and between rural and urban general education teachers. Prior to the analyses, the distributions of self-efficacy and job satisfaction scores for rural and urban special education teachers were assessed by visual inspection and were found to be similar. The first two Mann-Whitney U tests
featured special education teachers only. Using exact sampling distribution for $U$ (Dineen & Blakesley, 1973), significant differences were not observed between rural ($Mdn = 84.47$) and urban ($Mdn = 85.13$) special education teachers’ levels of self-efficacy, $U = 121, z = - .39, p = .71, r = .07$. or between rural ($Mdn = 121.5$) and urban ($Mdn = 122$) special education teachers’ levels of job satisfaction, $U = 125, z = -.25, p = .82, r = .04$.

The third and fourth Mann-Whitney U tests featured general education teachers only. Again, prior to the analyses, the distributions of self-efficacy and job satisfaction scores for rural and urban general education teachers were assessed by visual inspection and were found to be similar. Again, using exact sampling distribution for $U$, significant differences were not observed between rural ($Mdn = 84.53$) and urban ($Mdn = 71.30$) general education teachers’ levels of self-efficacy, $U = 18, z = - .51, p = .15, r = .37$, or between rural ($Mdn = 132.5$) and urban ($Mdn = 126$) general education teachers’ levels of job satisfaction, $U = 19, z = -1.41, p = .18, r = .34$.

**Qualitative Results**

The qualitative portion of the study aimed to better understand teachers’ experiences and factors that influence their self-efficacy and job satisfaction. To examine teachers’ perceptions regarding their ability to effectively work with students with ASD, questions addressing teachers’ goals when teaching students with ASD, their confidence in their ability to teach students with ASD, and factors that may relate to this confidence were discussed. To examine which factors influenced their job satisfaction, teachers were asked questions such as what motivated them to stay in the teaching profession, what they would choose to change about their current positions, and if they ever considered leaving the teaching profession. Teachers reported a variety of factors that negatively or positively influenced their current feelings of self-efficacy and job satisfaction or could influence them in the future. Consistent with the proposed
qualitative data analytic strategies, emerging themes were identified within teachers’ responses. These emerging themes were then examined and grouped into primary themes and subthemes which were conceptually similar. More specifically, responses discussing teachers’ job satisfaction and self-efficacy were first categorized into separate emerging themes. These emerging themes were then grouped together according to conceptual similarities which resulted in the following four overarching themes: 1) the impact of knowledge, experience, and training; 2) the importance of support; 3) the impact of occupational stress; and 4) the intrinsic rewards of teaching as protective factors. Subthemes were also identified within some of the overarching themes and will be discussed below. Table 17 lists qualitative themes and subthemes and provides examples from the data.

**The Impact of Knowledge, Experience and Training**

At the beginning of each interview, teachers were asked to discuss the ASD-specific training they received. Teachers discussed whether they received ASD-specific training, when this training occurred, and if they viewed this training sufficient. Although these training-related questions were posed at the beginning of each interview, many teachers returned to the impact of training and experience throughout their interviews.

**The Impact of Knowledge and Experience.** Consistent with previous research (Corona et al., 2017), the majority of both special and general education teachers linked their feelings of self-efficacy to their level of ASD-specific knowledge. When asked about what helped them to feel confident about their work with students with ASD, five teachers credited knowledge they received through a variety of training experiences (e.g., during college, graduate school, professional development workshops, conferences, voluntary opportunities), while nine credited
knowledge gained from their past experience with students with ASD. For example, one special education teacher summarized the confidence she gained through past experiences, sharing:

It's one of those things that you just kind of have to learn from experience. And I started working with autistic people when I was 14, so it's just kind of been something that I'm used to. The benefit of being in self-contained is that I've had the same kids for the past two years, so it's like, I know them, I know what sets them off. I know what things to avoid and what things make things better. So I feel like experience is the biggest thing.

However, lack of ASD-specific knowledge and experience appeared to be just as influential. For example, when asked what factors contributed to their reported low levels of confidence teaching students with ASD, five teachers cited insufficient knowledge of ASD and/or ASD-specific teaching strategies. One teacher described feeling as though she was ‘stumbling in the dark,’” while another likened her somewhat limited ASD-specific knowledge to “pieces of the puzzle” that she felt she was unsuccessfully trying to put together:

Overall, I just feel... just unequipped. I feel like I’ve got pieces of the puzzle that I’ve known or just learned, and I’m just like “Okay, how do I make this work for me? And how do I make this work for the child to actually benefit from this?” And then... I just think that’s the largest piece to my stress.

Other teachers focused on the negative impact these gaps in knowledge have on both students and teachers, with one special education teacher noting, “A lot of teachers don't know how to handle it [working with students with ASD] and it's not really fair for the kids or the teachers. Because the teachers weren't given an opportunity to learn.” However, despite the fact that they may not have been given the opportunity to receive adequate ASD-specific training, some teachers appeared to internalize these gaps in knowledge and view them as a sort of personal deficit. For example, when asked about the stress she experiences in her role as a special education teacher, one participant provided an emotional account of her feelings of guilt and inadequacy while working with some of her students with ASD:
I feel so inadequate. It makes me feel guilty that I can’t give them something that will benefit them. Like I feel like I’m trying, and I know that that’s part of it, like the experimental phase. But I don’t like to experiment, I like to know what to do and I like to be able to recognize the problem and know, “Well if I try these things, this will probably help.” And I just, I feel a lot of guilt. I feel a lot of… imposter syndrome is what I’ve heard some people say.

**The Potential Impact of Increased Training.** Unsurprisingly, discussions regarding the negative impact that these gaps in knowledge and experience can have on both teachers and students were often followed by talk of the potential benefits of additional training. Teachers’ suggestions for additional training topics ranged from broad topics such as behavior management and classroom management to focused topics such as ABA interventions and sensory sensitivity in ASD. Interestingly, the suggested training topics appeared to vary slightly according to classroom setting. For example, whereas general education teachers expressed an interest in broad topics such as accommodations for students with ASD, special education teachers often discussed wanting training in more specific topics such as Picture Exchange Systems, how to train support staff, and using positive reinforcement strategies for classroom management. However, although the topics of these suggested trainings varied, a few characteristics remained consistent: hands-on, experiential training with strategies that they could apply in their own classroom.

**The Importance of Support**

Another common theme that emerged during interviews was the importance of feeling supported. Whether this support came in the form of social support from colleagues or through material resources such as teaching material, the impact of support on teachers’ self-efficacy and job satisfaction was clear.

**The Impact of Social Support.** All ten participants identified ways in which social support from others positively or negatively impacted their feelings of self-efficacy and their job
Regarding support from colleagues, participants described “leaning on each other for support”, “bouncing ideas off each other,” and feeling as though they could not “do this on [their] own” (i.e., without support or guidance from their colleagues). For example, one teacher referred to her special education colleagues as the “Dream Team,” and shared the following about the impact of their support:

I have a really good team...I have lots of resources that make me feel like if I ever came into an issue that I wasn't sure of, I know where I can go. Some of those teachers have been teaching for 20 years. Some of them have been teaching for 10 years. I mean their experience plus mine, we work really well.

In addition to collegial support, multiple teachers also discussed the important impact of administrative support. However, whereas discussions of colleague support often focused on the impact of “teamwork” and the practical suggestions that their colleagues could provide, discussion regarding administrative support often focused on the confidence gained from administrators “backing [them] up” or “having [their] back.” Teachers who received this type of emotional support and reassurance described it as “rewarding” and discussed ways in which it made them feel trusted and valued. One special education teacher provided a clear example of the impact of this type of administrative support, stating:

My principal will very flat out tell you, “I don’t understand ABA, that’s not my realm. So when a parent comes to me upset, I’ve got your back... I don’t understand what you’re doing, but I know what you’re doing and you’re doing it well.” So that is the most – really - the most important thing. If you can get your admin and your staff on board, you can deal with those other things. You’re never going to make every parent happy, but if you’ve got support from the higher ups then it makes it easier to deal with....

Just as social support from administrators and colleagues was identified as a factor that contributed to teachers’ self-efficacy and job satisfaction, negative feedback or perceived lack of support had the opposite effect. The absence of support manifested in a variety of forms including minimally involved administrators, frequent administrator turn over, and minimal
follow-up on students IEPs. Some teachers who experienced limited support in current or previous positions described the environments as “disappointing,” “toxic” and “isolating.” For example, one special education teacher shared her current experience as the only resource teacher at her elementary school and noted the impact of this lack of colleague support:

I feel isolated. Like somebody told me one time, it’s like being on your own island. You just kind of feel like, “I’m the only one that feels this way, I’m the only one that thinks these things should be happening.” And that’s sort of just discouraging and isolating.

For several teachers, such as the teacher below, the absence of social support from colleagues directly impacted their decision to leave their previous positions at other schools.

The school that I was at before kind of exiled me, I was literally in the hallway. I was the last one on the left and it was half the size of a regular classroom. I ate lunch in there, I lived and breathed in that room for seven and a half, eight hours. It was just mind numbing because it's like I don't even feel like I can reach out to anybody.

For others, the absence of support from administrators resulted in a similar outcome:

I worked at the same school for seven years….and there was just not enough support… And that was why I chose to leave. And there’s things at the school I’m at now that I deal with, you know the grass is always greener, but I was telling somebody today that having support from my admin now makes you able to deal with all the other crazy stuff that goes on because that’s why I left my last job.

**The Impact of Material Resources.** For many teachers, the presence of support in the form of material resources was also a factor which influenced both high and low levels of self-efficacy and job satisfaction. When questioned about the material resources and funding available to educators to help them meet the needs of their students with ASD, most teachers responded with exasperation at the lack of funding in the field overall. However, examples of their individual experiences provided an interesting picture of how differences in material resources can impact a teacher’s self-efficacy and job satisfaction.

When sharing their frustration regarding the lack of funding and other material resources available at their schools, some teachers discussed barriers, such as missing materials and
curriculum kits, long wait times when requesting approval to use their classroom funding, and inability to print provided resources due to their lack of school-provided printer paper. Others shared their exasperation regarding the limited amount of instructional material provided and the inequality of resources available among different public schools. The impact of this discrepancy in resources was evident for two teachers who recently moved from mainstream public schools to a magnet school and an alternative school. Both teachers noted the significant increase in funding and resources available at their new schools and described several ways in which these additional resources impacted their day-to-day teaching experience. For example, the teacher who recently began teaching at a magnet school noted:

Normally they'll do all these fun professional development things, and they don't give you any resources. They don't give you the materials. Our district [the teacher’s current district] bought all of the materials for us… I mean they bought everything… You know, at the schools that I had been before, there was one [kit] for the whole school… Well, we now have one [kit] per grade level and one per special education teacher… Just having those readily available and I don't have to go track down the materials, I don't have to go check them out of a library, everything's in my room, that's been a big thing for us.

The Negative Impact of Occupational Stress

Given the high degree of occupational stress reported by as many as one third of teachers (Geving, 2007; Thomas et al., 2003), and the research linking higher levels of occupational stress to lower self-efficacy (Betoret, 2006; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007) and lower job satisfaction (Klassen & Chiu, 2010), it is unsurprising that the negative impact of occupational stress emerged as a common theme among all ten teachers. Throughout discussions about their occupational stress and the factors that most impacted their stress levels, two common subthemes emerged: the impact of stress due to workload and the impact of stress due to challenging student behavior. These two subthemes were addressed by both general and
special education teachers and appeared to impact teachers’ day-to-day experiences in a variety of ways.

**The Impact of Stress Due to Workload.** Within teacher-specific job satisfaction research, factors extrinsic to the central purpose of a teacher’s job (i.e., the actual work with students) are primarily thought of as “dissatisfiers” (Dinham & Scott, 1998). For the current sample, workload emerged not only as the primary extrinsic “dissatisfier,” but also as a factor that influenced self-efficacy among all 10 teachers. Teachers discussed the wide impact of their workloads with a sense of exhaustion. However, teachers often specified that their stress and exhaustion in this area was not due to their work with students, but rather a result of their other responsibilities. When asked if she experienced significant stress on a daily basis, one special education teacher summarized this point answering:

Yes. Although I don't know that [the stress] is necessarily geared towards my kids that have autism. It's more so not having the time and the things that I need to do my specific job, all the paperwork and things, and still being expected to teach, but have all these things done by a deadline…I say that all the time, if I could just teach, that would be great.

Numerous teachers shared similar sentiments, noting that they felt “stretched thin” or felt as if they needed to be “two places at once” to juggle both their students’ education and their other responsibilities.

For most teachers, these additional responsibilities included an “overwhelming” administrative workload that seemed to get “more and more complicated” each year. Although teachers often clarified that they understood the importance of completing their paperwork and tracking student progress, they expressed frustration at the priority they felt was placed on completing these administrative tasks, sometimes to the detriment of student instruction. For
example, when describing her frustration related to her administrative workload, one special education teacher shared:

I understand that a lot of the paperwork is necessary, but it just seems like the paperwork is what gets prioritized over the teaching… We get hounded on to not miss our minutes with our kids, but then how can I meet all those minutes if I'm having to take a sub for a day just to do paperwork? I mean, there were several times this year that my principal had to find subs for all of us, just to do paperwork. And that precious time is missed with my kids that maybe a learning breakthrough could have been made that day.

Teachers also identified common factors such as class sizes and staff availability which directly influenced the weight of their workloads. For example, when discussing factors related to their job satisfaction and their ability to achieve progress goals with their students with ASD, six teachers discussed the negative impact of their large class sizes or caseloads. The influence of these large class sizes and caseloads appeared to be two-fold. First, teachers noted how their “heavy” class sizes and caseloads negatively impacted their ability to individualize instruction and effectively meet the needs of their students. For example, one special education teacher who identified her large caseload as a primary factor impacting her job satisfaction noted:

You can't make as big an impact…Everyone’s [instruction] is individualized and differentiated. It's hard to do that for 20 kids every day. And what I find myself doing is not doing that. I try to group the ones that are not as needy, or are a little higher. But I don't feel I'm doing as good a job as I could in the name of making sure everybody is served.

In addition to impacting their ability to individualize instruction, more students also means more paperwork, and for some, less time teaching. This subtheme was especially evident during discussions about students’ IEPs, as teachers explained the dissonance between a) their desire to create appropriate IEPs for their students and effectively work towards these IEP goals and b) the time demands associated with these tasks. One special education teacher who had an especially large caseload discussed her stress related to this caseload at length. Whereas this teacher’s large caseload was a result of staffing issues and was not in-line with state policies (Rules of the
Alabama State Board of Education, 2021), her example paints a clear picture of the stress associated from large workloads and class sizes.

This year was just beyond crazy…in the peak of IEP season, there were two of us writing and holding ninety-five IEP meetings [because of staffing shortages]. Ninety-five. And so I feel like between March and May, not a single thing got done, because I was always in a meeting and my poor kids would ask, “Why are you always in meetings?” And well, that hurts the soul.

The Impact of Challenging Student Behavior. A total of nine general and special education teachers discussed the impact that students’ challenging behaviors had on their stress levels and, in turn, their self-efficacy and job satisfaction. Teachers discussed the unpredictable process of managing challenging behavior, noting that the “constant redirection” and “triage” that the process required often monopolized their attention and impacted their ability to effectively teach other students. For most teachers, this degree of impact was directly related to the frequency and degree of challenging student behaviors, and the impact was especially evident when examining variations in feelings of self-efficacy. A number of teachers described how instances of particularly challenging behavior caused them to question their own ability, and articulated how they experienced this self-doubt, sharing thoughts such as “What am I doing?” or “How can I make you happy so I can teach?” One special education teacher who noted she generally felt unaffected by a “typical” meltdown, described her experience with a physically aggressive student and how these events affected her feelings of self-efficacy:

I went home plenty of days with cuts and bruises… I mean, it was very stressful, but…it was also very defeating. Because, I'm supposed to be here to help you. And I feel helpless…we actually ended up getting [the student] moved to a school that had better resources for what [the student] needed…

Another factor which several teachers discussed alongside student behavior was the feedback teachers receive from parents regarding students’ behavior. For example, one teacher recounted an incident during which a parent filed a due process complaint after disagreeing with the
behavioral intervention implemented with her child. Although the final decision in the due process hearing was made in favor of the school and teacher, the teacher described how this experience shaped her implementation of students’ behavior plans moving forward:

This happened a couple of years ago and I still to this day have to… I had a student this year that was becoming severely aggressive, and I waited way too long to make the decision to implement restraint because I was still, I mean there’s still some trauma that comes on from having that happen. And I recognized that recently. I was like, ‘The reason I waited so long is that I’m still so scared that a parent will do that again.’

*Intrinsic Rewards of Teaching as Protective Factors*

Although daily stressors such as challenging student behavior negatively impacted teachers’ feelings of self-efficacy and job satisfaction, the intrinsic rewards of teaching appeared to be just as impactful, if not more. This theme is consistent with theories within job satisfaction research, which classify the intrinsic rewards of teaching as the “satisfiers” that contribute to teachers staying in their position despite the presence of other “dissatisfiers” (Dinham & Scott, 1998; Herzberg et al., 1959). Teachers in the current sample embodied this theory, describing their jobs as “exciting” and “fulfilling,” and acknowledging their desire to remain in the teaching profession despite the challenges associated with their role. For example, when asked what motivated her to stay in the teaching profession, one special education teacher provided a clear example of the power of these intrinsic rewards:

Truthfully, it’s that I like what I do. Because I mean, we all know there’s not a ton of money in it. [laughter] But I like where I work. It’s really more the relationships you build with your co-workers and your students more than anything else.

While teachers identified a number of intrinsic factors that added value to their roles, two student-related subthemes emerged: the impact of student success and achievement and the impact of teachers’ relationship with their students.
The Impact of Student Success and Achievement. Nine teachers discussed how their job satisfaction and self-efficacy were impacted by their students’ progress. Teachers reported feeling “excited,” “motivated” and “fulfilled” by their students’ progress and growth in the classroom, and several enthusiastically described the excitement surrounding the first time a student completes a specific goal (e.g., the first time a student reads a sight word aloud, the first time a student completes an ADL goal). Several teachers also noted the important role that student success plays in building their own confidence and protecting against more dissatisfying aspects of their jobs. For example, when asked what motivated her to stay in the teaching profession, one special education teacher quickly identified her students as the primary motivator and described the impact of one student’s achievements during the past school year:

Building that confidence in them and teaching them to take ownership of their learning and to really appreciate their learning is huge. Even on days where you're like, “Why am I still doing this?” Then something little, like that, happens. Or they tell you how much they loved a lesson or things like that. It makes it worth it. And you try to relish more on those than the bad things that happened throughout the day. And sometimes it's hard. Sometimes it's really hard. But it is a huge part of why we keep doing it.

Teachers’ responses also revealed the long-lasting, positive impact that past student success can have on teachers’ self-efficacy and job satisfaction, even when accompanied by perceived failures. For example, when discussing her ability to achieve specific progress goals with her students with ASD, one resource teacher provided a realistic but encouraging example how she views students’ progress:

It does seem like I always fall short, [even if] they always make progress. I always want them to read and write but for some, in the short amount of time that I get to have them, it doesn't happen. I hope that later on, as they go through the public school system, that they keep trying. And that they will read and write, and add and subtract… and grow the behaviors that will help make them successful. I do have a little guy…he was nonverbal when I first got him, and he's just bloomed like a flower…. But to each child, you know, the bloom looks different.
Whereas everyday examples of students’ progress bolstered many teachers job satisfaction and self-efficacy, the absence of perceived progress appeared to have the opposite effect. Several teachers were quick to classify the absence of progress as “failures” and shared how these perceived failures led to feelings of defeat and helplessness. For example, one early-career special education teacher discussed the impact of this lack of progress multiple times throughout her interview. First, in response to being asked if she believed she possessed the skills needed to effectively teach students with ASD, this teacher questioned her own abilities, sharing “I want it to be making progress. Like I don’t want people to think I’ve failed. You know, because it’s not really me that’s failed, it’s the kid that failed but that’s on me.” Soon after, while discussing factors that could potentially cause her to leave the teaching profession, the same teacher noted:

If I left my field of work totally, it would only be because I felt inadequate and we weren’t making progress. It’s just really discouraging to do that every time. And I know I’m hard on myself and I know that we might be making progress in a non-measurable way, you know? But we’re data people.

**The Impact of Teachers’ Relationships with Students.** While student progress was an important contributor to most teacher’s self-efficacy and job satisfaction, teachers’ relationships with their students, regardless of academic success or perceptions of student progress, was an important satisfier as well. Teachers were quick to describe how excited they were to see their students each morning and noted the positive impact that day-to-day interactions with both their students and their students’ parents could have. Furthermore, several participants described their roles as teachers as central to their identity and appeared to view their students as an integral part of their lives. For example, one participant who had worked as a special education teacher for 17 years described the important role that her career and her relationships with her students play in her life, stating:
Above all, I enjoy my students. I enjoy my job. And the other offers that I've entertained, in the end, I just can't. I can't imagine not having them in my life. You never know what the next year is going to bring, or the next student. It's always very, very exciting.

Overall, teachers were open to sharing their day-to-day experiences, and their responses provided valuable insight into the factors that influence their self-efficacy and job satisfaction. Although the two constructs were intended to be discussed separately, factors impacting teachers’ self-efficacy and job satisfaction often overlapped, allowing for discussion of how factors such as knowledge, experience, support, occupational stress and relationships with students impacted teachers’ overall well-being.

Table 17
Quotations from Qualitative Semi-Structured Interviews

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<th>Themes</th>
<th>Subthemes</th>
<th>Example Quotes</th>
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<td>1) The impact of knowledge, experience,</td>
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<td>and training</td>
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<td>1b) The potential impact of increased</td>
<td>It’s hard because I did come from such a behaviorally based program, I already knew how to run direct instruction and training and discrete trials and things like that. But basic classroom management other than, you know, running the clip chart or basic token systems, things like that would have been more beneficial… how to use positive reinforcement effectively. Really just classroom management I think is one of the biggest things because you’re not going to be able to teach kids if they’re not willing to behave and attend to you. So that’s step number one.</td>
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<td>I mean, I feel like it all has to go back to the same answer - I wish I knew more about autism, or was trained more in how to teach and handled things if this happens and what to ignore and what to not ignore.</td>
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<td>2) The importance of support</td>
<td>2a) The impact of social support</td>
<td>“I worked at the same school for seven years….and there was just not enough support… And that was why I chose to leave. And there’s things at the school I’m at now that I deal with, you know the grass is always greener, but I was telling somebody today that having support from my admin now makes you able to deal with all the other crazy stuff that goes on because that’s why I left my last job.”</td>
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<td>3) The impact of occupational stress</td>
<td>3a) The impact of stress due to workload</td>
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<td>4)</td>
<td>The intrinsic rewards of teaching as protective factors</td>
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CHAPTER 4
DISCUSSION

The purpose of the current study was to examine self-efficacy and job satisfaction in general education and special education teachers of students with ASD. Using a concurrent mixed methods research design, the study sought to address gaps in the literature through two study phases. Part One of the study examined quantitative reports of self-efficacy pertaining to teaching students with ASD and job satisfaction from both general and special education teachers of students with ASD. Part One also examined potential correlates to these constructs such as occupational stress, social support, knowledge of ASD, and school resources, and exploratory research questions examined potential differences according to geographic classification. Part Two of the study employed semi-structure interviews to gain a deeper insight into the day-to-day experiences of teachers, and examine what factors influence their self-efficacy and job satisfaction. The concurrent mixed method design weighted input from both quantitative and qualitative methods evenly, and allowed for a more comprehensive picture of the relationships between teacher’s self-efficacy and job satisfaction and the proposed correlates.

Quantitative Findings

Hypothesis 1, which examined group differences between general education and special education teachers of students with ASD, was unsupported as no significant differences were found in the levels of self-efficacy, job satisfaction, occupational stress, perceived social support or knowledge of ASD between the two groups.

Hypothesis 2, which examined correlations between self-efficacy and occupational stress,
social support and school resources, was also unsupported as occupational stress was not negatively related to self-efficacy, and social support, school resources, and knowledge of ASD were not positively related to self-efficacy.

Hypothesis 3, which examined correlations between job satisfaction and occupational stress, social support and school resources was partially supported. Although school resources and knowledge of ASD were not positively related to job satisfaction, a significant positive correlation was found between teachers’ job satisfaction and perceived social support, as originally hypothesized. Additionally, a significant negative correlation was found between teachers’ job satisfaction and their occupational stress.

The present study also proposed three exploratory research questions pertaining to potential differences in the correlates of teacher self-efficacy and teacher job satisfaction according to geographic classification. Analyses for Research Questions 1 and 2, examining differences in the levels of self-efficacy, job satisfaction, occupational stress, perceived social support and knowledge of ASD reported by rural and urban teachers, yielded primarily non-significant results. Specifically, no significant differences were found in the levels of self-efficacy, job satisfaction, occupational stress, or perceived social support between the two groups. However, significant differences emerged between rural and urban teachers’ knowledge of ASD, with rural teachers reporting significantly higher levels of ASD-specific knowledge when compared to urban teachers.

Lastly, analyses for Research Question 3, examining differences in the level of self-efficacy and job satisfaction in four subgroups of rural and urban general education and special education teachers, also yielded non-significant results. Specifically, no significant differences were found in the levels of self-efficacy and job satisfaction between rural and urban general
education teachers or between rural and urban special education teachers.

**Qualitative Findings**

The qualitative component of the study was employed to gain deeper insight into the day-to-day experiences of teachers of students with ASD and what factors impact their job satisfaction and self-efficacy. These data revealed a variety of factors that teachers believed influenced their feelings of self-efficacy and job satisfaction or could influence these constructs in the future. Interviews were structured to allow self-efficacy and job satisfaction to be discussed separately, and responses discussing job satisfaction and self-efficacy were first categorized into separate emerging themes. However, through the qualitative data analytic process, these emerging themes were grouped together according to conceptual similarities which resulted in the four overarching themes related overall teacher well-being: the impact of knowledge, experience and training; the importance of support; the impact of occupational stress; and the intrinsic rewards of teaching as protective factors.

Regarding the impact of knowledge, experience, and training, teachers credited their knowledge of ASD, ASD-specific trainings, and prior experience with students with ASD when discussing factors related to their self-efficacy. Additionally, teachers who felt they lacked ASD-specific knowledge, training, and experience discussed struggling to make up for these knowledge gaps and the feelings of guilt and inadequacy associated with this effort.

The next theme that emerged was the importance of both social and material support. Teachers who endorsed receiving social support from both their colleagues and their administration described this support as “rewarding” and discussed ways in which it made them feel confident, trusted, and valued, while teachers who endorsed experiencing negative feedback or a lack of social support described the opposite outcomes. Additionally, whereas discussions
regarding the lack of funding and material resources revealed a history of frustration and exasperation, teachers who reported experiencing an increase in funding and resources recounted the benefits of this increased material support enthusiastically.

During discussion of the impact of occupational stress, two subthemes emerged: the impact of workload and the impact of student behavior. Regarding the negative impact of high workloads, teachers discussed feeling “stretched thin,” ineffective, and frustrated due to their large class sizes/caseloads and their “overwhelming” administrative workload. Regarding stress due to students’ behavior, teachers’ responses illustrated how their self-efficacy and job satisfaction was impacted by the unpredictable and monopolizing process of managing aggressive or otherwise challenging student behavior.

Finally, with respect to intrinsic rewards of teaching serving as protective factors, teachers’ responses highlighted the important impact that “satisfiers,” such as student achievement and teachers’ relationships with students, can have on teachers’ job satisfaction and overall teaching experience, even in the face of other “dissatisfiers.” Even after acknowledging a variety of factors that negatively impacted their teaching experiences, teachers were quick to describe their jobs as “exciting” and “fulfilling,” and described their students as an integral part of their lives. However, while student achievement appeared to contribute to these positive feelings of self-efficacy and job satisfaction, the absence of perceived progress appeared to have the opposite effect.

**Mixed Methods Findings**

**Group Differences Between General and Special Education Teachers**

In the quantitative portion of the study, significant group differences were not found between general education and special education teachers’ levels of self-efficacy, job
satisfaction, occupational stress, social support, or knowledge of ASD. The qualitative data, while difficult to quantify, primarily supports these results. Whereas individual differences were noted during discussions of factors that influenced participants experiences, for the most part these factors did not appear to vary according to specialty. Specifically, no apparent differences were noted in the levels of self-efficacy, job satisfaction, occupational stress, or social support. However, differences emerged between general education and special education teachers’ perceived knowledge of ASD and ASD-specific teaching strategies.

**The Impact of Occupational Stress on Teachers’ Self-Efficacy and Job Satisfaction**

In the quantitative portion of the study, no relation was found between occupational stress and self-efficacy ($r = -0.08, p = .6$), but a significant negative correlation emerged between occupational stress and job satisfaction ($r = -0.34, p = .02$). Qualitative data from both general education and special education teachers supports these results and offers rich insights into the sources of occupational stress that teachers of students with ASD view as the most impactful.

**The Impact of Social Support on Teachers’ Self-Efficacy and Job Satisfaction**

The quantitative portion of the study that examined teachers’ perceived social support through the 10-question Social Provisions Scale revealed no correlation between perceived social support and self-efficacy ($r = 0.02, p = .92$) and a significant positive correlation between job satisfaction and perceived social support ($r = 0.42, p = .004$). Qualitative data partially supported these results. More specifically, qualitative data revealed the strong impact that social support from both colleagues and administrators had on not only teachers’ job satisfaction, but also their feelings of self-efficacy when working with students with ASD.
The Impact of Material Resources and Funding on Teachers’ Self-Efficacy and Job Satisfaction

In the quantitative portion of the study, no significant correlation was found between teacher self-efficacy and school resources ($r = .01, p = .96$) or between teacher job satisfaction and school resources ($r = -.11, p = .49$). Qualitative data did not support these results, as support in the form of material resources was identified by teachers as a factor that influenced both high and low levels of self-efficacy and job satisfaction.

The Impact of ASD-specific Knowledge on Teachers’ Self-Efficacy and Job Satisfaction

The quantitative portion of the study examined teachers’ knowledge of ASD through a 15-item measure that directly assessed three areas of ASD-specific knowledge (i.e., diagnosis and symptomatology, treatment, and etiology). Contrary to the direction predicted in hypotheses, quantitative analyses examining the relation between self-efficacy and ASD-specific knowledge revealed a negative association between the two variables ($r = -.26, p = .07$), albeit nonsignificant. However, analyses examining the relationship between job satisfaction and ASD-specific knowledge revealed a nonsignificant positive association between the two variables ($r = .17, p = .25$). Again, qualitative data partially supported these results, as teachers linked higher levels ASD-specific knowledge and training to higher levels of both self-efficacy and job satisfaction. Although the incongruence of these results provides interesting insights, it is important to highlight the differences in how knowledge of ASD was measured in the two study phases. Whereas the quantitative measure directly assessed teachers’ knowledge of factual information about ASD as a disorder, teachers’ discussions during the qualitative portion of the study centered around their own perceived knowledge of ASD and ASD-specific teaching strategies and their experiences of receiving ASD-specific training.
<table>
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<th>Construct</th>
<th>Quantitative Results</th>
<th>Qualitative Results</th>
<th>Convergence or Divergence of Data</th>
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<tbody>
<tr>
<td>Group differences between general and special education teachers</td>
<td>No significant group differences in levels of self-efficacy, job satisfaction, occupational stress, social support, or knowledge of ASD</td>
<td>Differences noted in perceived knowledge of ASD and ASD-specific teaching strategies; no apparent differences in levels of self-efficacy, job satisfaction, occupational stress, or social support</td>
<td>Partial Convergence</td>
</tr>
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**Self-Efficacy**

<p>| The relation between occupational stress and teachers’ self-efficacy      | No relation found between occupational stress and self-efficacy ($r = -.08, p = .6$) | Occupational stress due to workload and challenging student behavior negatively impacts teachers’ feelings of self-efficacy | Divergence                        |
| The relation between social support and teachers’ self-efficacy           | No correlation between perceived social support and self-efficacy ($r = .02, p = .92$) | Support from colleagues and administrators impacted teachers’ feelings of self-efficacy | Divergence                        |
| The relation between material resources/funding availability and teachers’ self-efficacy | No correlation found between teacher self-efficacy and school resources ($r = .01, p = .96$) | Funding and availability of teaching materials impacted teachers’ ability to effectively teach their students with ASD | Divergence                        |
| The relation between ASD-specific knowledge and teachers’ self-efficacy   | Nonsignificant negative association found between self-efficacy and ASD-specific knowledge variables ($r = -.26, p = .07$) | Teachers linked feelings of self-efficacy to their level of ASD-specific knowledge and training | Divergence                        |</p>
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<tr>
<td>The relation between ASD-specific knowledge and teachers’ job satisfaction</td>
<td>Nonsignificant positive association between job satisfaction and ASD-specific knowledge ($r = .17, p = .25$)</td>
<td>Teachers linked degree of job satisfaction to their level of ASD-specific knowledge and training</td>
<td>Convergence</td>
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Links to Previous Literature

Although the majority of the quantitative hypotheses were not supported, portions of both the significant and nonsignificant findings are consistent with previous literature on teacher self-efficacy and job satisfaction. The results also mirror the mixed findings throughout this literature base and are indicative of the complexities associated with examining self-efficacy and job satisfaction in this population (Corona et al., 2017; Ruble et al., 2013). For example, while significant group differences in general and special education teachers’ levels of self-efficacy and job satisfaction were not found in the current study, these results are supportive of prior studies. Specifically, a 1995 study by Darcy and colleagues found no significant differences in job satisfaction between special education and general education teachers, while Corona and colleagues (2017) found similar results when examining group differences in self-efficacy. This suggests that the variability in job satisfaction and self-efficacy found throughout the literature, and in the current study, are better explained by factors such as occupational stress, social support, and resources rather than ones’ status as a general or special education teacher. However, as exhibited by the findings for the current study, the impact of these factors appears to vary.

For example, job satisfaction was found to be negatively related to occupational stress in the current study. Several studies support these findings (Klassen & Chiu, 2010), and highlight the impact that stress related to administrative workload and student behavior, specifically, has on teachers’ job satisfaction. Given that stress associated with the high administrative workload and elevated levels of challenging student behavior are often reported by teachers of students with ASD or other developmental disabilities (Hastings & Brown, 2002; Lecavalier et al., 2006; Ruble & McGrew, 2013), it is unsurprising that this relationship emerged in the current study’s
population. Job satisfaction was also found to be positively related to social support, a finding supported by numerous studies that have examined this relationship specifically in teachers of students with ASD (Cappe et al., 2017; Ruble et al., 2011; Ruble et al., 2013). Given the research regarding decreased attrition rates among teachers who possess knowledge of specific aspects of teaching (e.g., selection of instructional material, child psychology, learning theory; NCTAF, 2003), and the inverse relationship which has been noted between teachers’ perception of school resources and their burnout symptoms (McCarthy et al., 2009), it was expected that job satisfaction would also be positively related to teachers’ knowledge of ASD and their school resources. However previous research is mixed and the nonsignificant relations found between job satisfaction and both school resources and knowledge of ASD are consistent with studies that found significant relations between job satisfaction and support from colleagues and administration, overall school climate, and levels of stress, but nonsignificant relationships between job satisfaction and resources or knowledge variables (Cockburn & Haydn, 2004; Liu & Ramsey, 2008; Schwarzer & Hallum, 2008).

Given the inverse relationship noted between self-efficacy and occupational stress related to workload and student behavior (Betoret, 2006; Schwarzer & Hallum, 2008; Skaalvik & Skaalvik, 2007), and the significant positive correlations which have been examined between self-efficacy and social support (Accardo et al., 2017; Cappe et al., 2017), knowledge (Buell et al., 1999), and resources (Kaufhold et al., 2006) in a variety of teacher-focused studies, similar relationships were expected to emerge within the current sample of teachers of students with ASD. However, previous research is mixed and several studies examining factors related to teachers’ self-efficacy have yielded similar nonsignificant relations between self-efficacy and administrator support (Ruble et al., 2011), certain aspects of occupational stress (Ruble, 2013),
knowledge of ASD, and school resources (Corona et al., 2017). Nevertheless, the nonsignificant results found for all self-efficacy analyses in the current study may also be indicative of a broader issue with the way the variable was measured. Although the ASSET was found to have good internal consistency for the current study and previous studies ($\alpha = .96 - .98$; Corona et al., 2017; Ruble et al., 2013), researchers have suggested that the specificity of the measure has the potential to impact the degree to which the self-efficacy scores yielded relate to other commonly examined variables (e.g., teacher burnout, teacher stress; Ruble et al., 2013). For example, given that the ASSET was developed to assess task-specific self-efficacy for teachers of students with ASD, a generalized measure such as the TSI (a measure of general occupational stress) may not correspond well with the domain-specific self-efficacy reflected in the ASSET total score. Additionally, the TSI reflects general stress related to teaching (e.g., administration, co-workers, workload) and is therefore less reflective of specific aspects of teaching students with ASD.

Due to the lack of ASD-specific measurement development for constructs such as job satisfaction, occupational stress, and social support, the ASSET was one of only two ASD-specific measures used in the current study. The nonsignificant relations found between ASSET total scores and all other variables (several of which have consistently been linked to self-efficacy in previous studies) may suggest that teachers’ self-efficacy when working with students with ASD is only a small portion of their overall feelings of self-efficacy in the classroom. For instance, although a teacher’s overall feelings of self-efficacy in general teaching tasks may be high, their feelings of self-efficacy when completing ASD-specific teaching tasks may be low. When considering the long list of competencies that play a role in a teacher’s effectiveness (Liakopoulou, 2011), it is understandable that high levels of self-efficacy in many important day-to-day teaching tasks may cushion the impact of deficits in self-efficacy in one specific area of
teaching skills.

Overall, these quantitative findings suggest that teachers’ job satisfaction is not dependent on their classroom setting (i.e., general education or special education), their availability of school resources, or their knowledge of ASD. Furthermore, in addition to these three variables, the quantitative findings suggest that teachers’ ASD-specific self-efficacy is also not dependent on their level of occupational stress or the availability of social support. However, the data gleaned from the qualitative portion of the study suggests important links between a number of these variables and highlights the benefits of mixed methods research when investigating the real-life experiences of participants (Creswell et al., 2011).

When given the opportunity to respond in an open-ended fashion, teachers described a variety of factors that they attributed to their feelings of self-efficacy and job satisfaction, several of which were found to be inconsistent with the quantitative portion of the study. Given this inter-method discrepancy, potential reasons for the inconsistencies were explored. First, demographic information and total scores for both the full sample and the qualitative subsample were examined. While means varied slightly across the two groups, no noteworthy differences that would account for the discrepancies were noted. Next, the quantitative methods used to assess each variable were examined. Whereas the fundamental information assessed in quantitative measures of ASD-specific self-efficacy, job satisfaction, social support and occupational stress was similar to the information discussed about each variable during the interviews, there were clear differences in how knowledge of ASD and the availability of school resources were defined across each method.

In the quantitative portion of the study, knowledge of ASD was measured using the Knowledge of ASD section of the AIQ which assess teachers’ knowledge of the
symptomatology, treatment, and etiology of ASD. Rather than assessing the factual knowledge assessed in the AIQ, the qualitative portion of the study only captured teachers’ own perceptions of their knowledge of ASD and ASD-specific teaching strategies. Similar variations were found in the quantitative and qualitative measurements of school resources. More specifically, while the quantitative measure reflects amounts of federal, state, and local funding at the school level (Alabama State Department of Education, 2019), the qualitative information about school resources reflects teachers’ personal views about the availability and utility of resources. The unique features of these objective and subjective accounts provide interesting insights into the importance of perceived knowledge and support and may partially explain the contradictory findings present in the quantitative and qualitative analyses examining the ASD-specific knowledge and school resources as they relate to self-efficacy and job satisfaction.

Despite these measurement differences, much of the qualitative findings are consistent with previous qualitative studies. For example, in a 2013 qualitative study examining challenges teachers face in trying to include students with ASD in mainstream classrooms, teachers recommended that increased resources, training, and support were needed to improve both teacher and student outcomes and effectively accommodate students with ASD (Lindsay et al., 2013). Additionally, while not focused specifically on teachers of students with ASD, a mixed methods study examining teachers’ perceptions of job satisfaction and school climate found that teachers’ job satisfaction was impacted by both satisfiers, such as social support from colleagues and administrator support, and dissatisfiers, such as high administrative workloads that were noted to take time away from their instructional duties (Knox, 2011).

Finally, both the complementary and contradictory mixed methods findings for the current study demonstrate the benefit of having varied data sources from which to draw
conclusions and highlight the overall strengths of a mixed methods design. Adequately capturing complex phenomena such as self-efficacy, job satisfaction, occupational stress, and social support through a single quantitative measure can be difficult. Additionally, whereas the quantitative approaches included in the current study allowed for an objective measurement of these variables and the examination of group differences and associations between variables of interest, the measures may have been limited in their ability to assess how teachers perceive these relationships in the “real-world” (Moghaddam et al., 2003). However, through the addition of the qualitative component utilizing IPA, teachers’ personal perceptions of factors that influence their job satisfaction and ASD-specific self-efficacy can be more thoroughly examined and discussed. Overall, these mixed methods findings may suggest that knowledge of ASD and ASD-specific instructional strategies, perceived social support, perceived material support, and occupational stress due to large workloads and challenging student behaviors play an important role in the self-efficacy and job satisfaction of both general and special education teachers of students with ASD. Additionally, the discrepancy between the quantitative and qualitative results highlights the important impact that perceived support and knowledge can have, even when impact of objective measurements of the variables is nonsignificant. Finally, results highlight the important role that the intrinsic rewards of teaching plays in teacher well-being overall, and the powerful impact that factors such as student achievement and positive relationships with students can have even when numerous dissatisfiers are present.

**Limitations and Future Directions**

Several limitations should be considered when interpreting the results of the current study. First, the relatively small sample size may have contributed to some of the nonsignificant findings due to the limited power to detect the hypothesized effects. Whereas previous literature
has found moderate-to-large effect sizes when examining group differences and correlations in various teacher populations (Boujut et al., 2016; Ruble et al., 2013; Stempien & Loeb, 2002; Yavus, 2018), the effects in the current sample were smaller and therefore more difficult to detect with this sample size. Additionally, the unequal sample sizes of general education teachers \((n = 17)\) and special education teachers \((n = 34)\) may have also affected the statistical power of some of the analyses. Throughout recruitment, every effort was made to recruit equal sample sizes of general and special education teachers for both the quantitative and qualitative portions of the study. Whereas these unequal sample sizes could be indicative of larger proportions of special education teachers who work daily with students with ASD (NCES, 2021b), they could also reflect the sampling strategies employed (e.g., word-of-mouth recruitment strategies).

Overall recruitment challenges related to the COVID-19 pandemic may also be a limitation of the current study. Original plans included recruitment through multiple education-specific conferences and through direct interactions with teachers at professional development and related workshops, in addition to recruitment through social media pages and snowball sampling. However, due to the COVID-19 pandemic, in-person recruitment was conducted at only one education-specific conference before efforts shifted to recruitment through social media pages and snowball sampling exclusively. While these methods proved effective in recruiting the current sample, the inability to recruit through other means may have had an impact on overall response rates and willingness to participate.

A fourth limitation of the current study was the relative homogeneity of the sample (e.g., 94.1% female, 90% White). Although these demographic characteristics reflect public-school teachers nationwide being majority female and majority White (i.e., 76% female, 79% White; NCES, 2021), the current sample is an over-representation of these two groups and calls into
question the generalizability of these results to the broader population of public-school teachers across the country. Given that differences in job satisfaction and self-efficacy have been found according to demographic variables such as gender and race, follow-up studies with a more diverse sample may provide a better picture of the variables impacting teachers job satisfaction and ASD-specific self-efficacy.

A final limitation to consider is the conflicting results found in the previous literature examining factors related to self-efficacy and job satisfaction across all teachers. Whereas the current hypotheses were developed using the findings from previous studies, these findings varied across studies and across the specific populations of teachers who were assessed. Although some of the quantitative findings in the current study may be nonsignificant due to the previously discussed methodological limitations, there are many factors that could significantly impact teachers’ ASD-specific self-efficacy and job that were not measured in this study.

**Conclusions and Clinical Implications**

Whereas the majority of the quantitative hypotheses for this study were unsupported, the qualitative data revealed potentially important patterns in the variables that may impact self-efficacy and job satisfaction in teachers of students with ASD. Additionally, although variables impacting self-efficacy and job satisfaction have been examined in broad teacher populations in a multitude of studies, research on these relations within teachers of students with ASD specifically has been relatively sparse and many ASD-specific constructs remain unexamined. These findings suggest that important relations may exist between the variables of interest and suggest that, as researchers continue to examine self-efficacy and job satisfaction in teachers of students with ASD, occupational stress, social support, material resources, and knowledge of ASD are likely important factors to consider.
These results also suggest that schools and school systems have a few avenues through which they can potentially address issues such as attrition and job burnout among teachers of students with ASD. For example, given the confidence that both general education and special education teachers appeared to gain through a variety of ASD-specific training experiences, and the feelings of inadequacy that appear to manifest for some teachers when knowledge gaps are not addressed, schools could work to increase the hands-on professional development training that teachers receive each year. While ASD-specific training topics were primarily discussed by teachers in the current study, training topics such as general classroom management and behavioral management were also suggested. Additionally, given the impact that both perceived material support and perceived social support have on teachers’ self-efficacy and job satisfaction, schools may find that even small changes, such as purchasing additional instructional material or supporting a teacher during a parent meeting, could reduce negative feelings that may lead to burnout among teachers. Finally, given the negative impact of occupational stress due to workload and the protective role that the intrinsic rewards of teaching appear to play with respect to teachers’ feelings of self-efficacy and job satisfaction, schools and school systems may want to consider ways to decrease the time teachers spend on administrative tasks and increase their time spent engaging in instruction with students. While these are certainly complex issues with a multitude of practical barriers and challenges that educational researchers continue to examine and address (Christian-Brandt et al., 2020; Klassen et al., 2012; Saloviita & Pakarinen, 2021) the qualitative results of this study highlight the potentially strong impacts of teachers being given more time to engage in activities that they perceive as more central to their role as educators (e.g., developing relationships with students and facilitating student achievement). Additionally, the qualitative results suggest that given the rising expectations and “overwhelming”
administrative workloads that sometimes cause teachers to feel “stretched thin” and “inadequate,” school systems may benefit from systematic changes which reduce the time that teachers spend on administrative tasks and increase the support that teachers receive through additional staff or other manners.
REFERENCES


