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REFERRAL DECISIONS OF TEACHERS AND SCHOOL PSYCHOLOGISTS FOR TWICE-EXCEPTIONAL STUDENTS

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REFERRAL DECISIONS OF TEACHERS AND SCHOOL PSYCHOLOGISTS FOR TWICE-EXCEPTIONAL STUDENTS

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Education
at the University of Kentucky

By

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ABSTRACT OF DISSERTATION

REFERRAL DECISIONS OF TEACHERS AND SCHOOL PSYCHOLOGISTS FOR TWICE-EXCEPTIONAL STUDENTS

The accurate and timely referral and identification of twice-exceptional students remains a challenge. In a statewide study, the referral decisions for both special education and gifted programming evaluations made by four participant groups (i.e., general education teachers, special education teachers, gifted education teachers, and school psychologists) were compared. Participants were randomly assigned to read one of three identically described students in a vignette that differed only in the presence of a diagnostic label—autism spectrum disorder (ASD), specific learning disability (SLD), or no diagnostic label. In all, special education teachers made the most special education referrals, while gifted education teachers made the most gifted programming referrals, both regardless of the diagnostic label present. The students with diagnostic labels were recommended for special education referrals significantly more than for gifted programming, while this difference was not evident in the no diagnostic label condition. Moreover, the student with the ASD label was the most likely to be referred for evaluations for both special education and gifted programming out of all three vignette conditions. Overall findings indicated the importance of considering the referral source as well as how the presence of a diagnostic label might influence educational referral decisions, particularly in how this might influence overall multidisciplinary team decisions for these unique learners.

KEYWORDS: Twice-exceptional, Special Education, Gifted Education, Referral Decisions, Labeling Bias

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For my family—who for generations have instilled and demonstrated the importance of education.

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Within the fields of special and gifted education, a gifted student who also has a disability is known as twice-exceptional (Foley Nicpon, Allmon, Sieck, & Stinson, 2011). Twice-exceptional students are a heterogeneous group of individuals with varying disabilities, as well as varying areas of giftedness (Brody & Mills, 1997; Ruban & Reis, 2005). Due to the unique nature of their strengths and weaknesses, providing services for and accurately identifying these students remain difficult. Giftedness may also be overlooked in students with disabilities because this may contradict commonly held beliefs about both students with disabilities and those who are gifted (Bianco & Leech, 2010). Some even consider giftedness and disabilities to be mutually exclusive (Assouline, Foley Nicpon, & Huber, 2006; Boodoo, Bradley, Frontera, Pitts, & Wright, 1989).

These biases and misconceptions, as well as the fact that many teachers and school psychologists know little about this population (Foley Nicpon, Assouline, & Colangelo, 2013), likely influence the initial referral stage for identification and prevent such students from being considered for gifted programming (Minner, 1990). Unfortunately, many twice-exceptional individuals remain unidentified or are identified later in life (Ferri, Gregg, & Heggoy, 1997; Holliday, Koller, & Thomas, 1999). This in turn seems to place them at risk for negative schooling experiences, influencing academics, social interactions and relationships, and emotional wellbeing. Understanding the many factors that might influence or impede an initial referral for an evaluation for gifted programming or special education might bring further understanding as to why these students are difficult to accurately identify.

Literature Review

This section will explore the literature related to twice-exceptionality, clinical judgment, and bias. Specific issues related to the identification of twice-exceptional individuals will be discussed. The literature on gifted individuals with autism spectrum disorder (ASD) and gifted individuals with a specific learning disability (SLD) will also be reviewed and critiqued. In addition, the mechanisms and complexities of clinical judgment and bias and their relation to twice-exceptionality and referral decisions will be considered. Last, the outcomes for twice-exceptional individuals will be described.

Identification of Twice-exceptionality

Several issues likely impede the identification of twice-exceptional students. Thus, exact prevalence data on this group of students are unknown. First, there is no formal educational tracking system to specifically identify twice-exceptional students (Foley Nicpon et al., 2011). Second, due to differences in special and gifted education eligibility criteria across states and districts, it is difficult to identify these students in a consistent manner (Rizza & McIntosh, 2001; Tallent-Runnels & Sigler, 1995).

In particular, differences in gifted and talented definitions across the nation likely impact these children. Part of the reason for the underrepresentation of twice-exceptional students in gifted programs is that there is no universally accepted definition of giftedness (Rizza & McIntosh, 2001). The federal government provides a broad definition of gifted and talented students; however, individual states can operationalize it differently. The No Child Left Behind Act (NCLB) of 2001 defines gifted and talented students as those who: "give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or

activities not ordinarily provided by the school in order to fully develop those capabilities." There are, therefore, five broad gifted and talented areas according to the federal government: intellectual aptitude, creativity, artistic expression, leadership capacity, and academic achievement. Similar to the federal definition, programs for the gifted and talented in the Kentucky Administrative Regulations (1999) include all five areas of gifted and talented with the following definition: "'exceptional students' who are identified as possessing demonstrated or potential ability to perform at an exceptionally high level in general intellectual aptitude, specific academic aptitude, creative or divergent thinking, psychosocial or leadership skills, or in the visual or performing arts."

How a state or district defines giftedness can impact eligibility and prevalence of students served. In a survey of Texas school districts, Tallent-Runnels and Sigler (1995) found that 80.3% of the participating districts reported they had not placed any students with SLDs in their gifted programs. Approximately 75% of those who did place students with SLDs in their gifted programs also reported that they made modifications to the selection or identification process in order to include these students. Common modifications to gifted eligibility criteria included alternate tests, open screening to allow all of those who were nominated to be considered, and waiving specific criteria that might keep students with SLDs out of gifted programs. In addition, those that served more students in gifted programming were more likely to also serve students with multiple exceptionalities (Tallent-Runnels & Sigler, 1995), indicating that the eligibility and definition of giftedness used can impact the number of twice-exceptional students served.

Accurate identification for twice-exceptional students, particularly intellectually gifted students with SLDs, poses three additional challenges. The first group includes those who are accurately identified as gifted, but appear to be underachievers because appropriate services are not in place for their disability (Brody & Mills, 1997). Furthermore, students who are already receiving gifted services are rarely screened for SLDs (Assouline et al., 2006; Cline & Hegeman, 2001). As the curriculum becomes more difficult, these students may fall further behind without the appropriate educational supports for an unidentified disability.

The second group includes those whose disability has been identified, but whose giftedness has not been identified (Brody & Mills, 1997). Similarly, these students are rarely screened for talents (Assouline et al., 2006). These children may never experience enrichment activities or opportunities to expand and develop their talents and interests; instead, this might place them at risk for lower self-concepts, self-esteem, and self-efficacy (Baum & Owen, 1988; Reis & Colbert, 2004). These students might also exhibit various social and behavioral issues in the classroom, which could further impede the identification of their giftedness (Ruban & Reis, 2005). While these might be viewed as problem behaviors in the classroom, instead these might serve as indicators for a need to be challenged.

The third group includes those who have not been identified for either their disability or their giftedness. In the twice-exceptionality literature, this is commonly referred to as the masking effect. The masking effect might explain why these children sometimes appear average in the classroom (Bianco & Leech, 2010; Brody & Mills, 1997; McCoach, Kehle, Bray, & Siegle, 2001) because either their disability masks their

giftedness or their giftedness masks their disability. In this case, it might take a particularly perceptive teacher, parent, or school staff member to refer this child for an evaluation (Volker, Lopata, & Cook-Cottone, 2006).

Clearly, there are several issues that might impede proper identification. There are, however, some specific identification recommendations for twice-exceptional students. In all, the identification process should include comprehensive assessment measures to address both the student's gift and disability. This should include areas of cognitive and academic functioning, developmental history, and social, emotional, and adaptive functioning (Assouline, Foley Nicpon, & Doobay, 2009). A multidisciplinary team is essential for accurate identification, educational placement, and service decisions (Crepeau-Hobson & Bianco, 2011; Nielsen, 2002). These methods must be sensitive to the child's gifts as well as his or her culture, language, and exceptionalities (Rizza & McIntosh, 2001).

In a study that investigated the attitudes of different types of teachers, school psychologists, and other school personnel, participants as a whole ranked the following as the four most important factors to consider for an evaluation of a twice-exceptional student: performance on class work, behavioral difficulties in the classroom, parental concerns, and cognitive abilities (Foley Nicpon et al., 2013). This is promising in some ways in that cognitive ability was not ranked as the most important factor, although, others have reported that intelligence scores were the most important factor in determining gifted eligibility (Robertson, Pfeiffer, & Taylor, 2011). This is also interesting considering that the same participants also ranked social problems with peers as the most difficult area for twice-exceptional learners. While a comprehensive

evaluation from a multidisciplinary team might seem commonplace for any child with a suspected disability, it is particularly important for twice-exceptional students. Multiple perspectives and observations are essential to more accurately capture the challenges and successes of these students.

Some researchers have specifically investigated the cognitive and academic profiles of twice-exceptional students in order to aid in the identification process (Volker et al., 2006; Waldron & Saphire, 1992). However, this may be inconsequential due to the large heterogeneity that exists within this population (Brody & Mills, 1997). Further, Lovett and Lewandowski (2006) questioned the use of test scatter or profile analysis specifically for intellectually gifted students with SLDs since a specific profile has yet to be consistently empirically identified. They argued that uneven profiles are common and should not be viewed as atypical.

There is additional disagreement in the literature for specific IQ criteria when used in intellectual giftedness identification for twice-exceptional students. Gifted and talented programs still heavily rely on intelligence scores (Nielsen, 2002), and school psychologists rated this as the most important factor in determining gifted eligibility (Robertson et al., 2011). The most common criterion for intellectual giftedness is the 98th percentile, two standard deviations above the mean, or a full-scale IQ (FSIQ) of 130 or above (McCoach et al., 2001). Nielsen (2002), however, suggested that the strict cutoff criteria of 130 for intelligence assessments used for entrance into gifted programs might need to be altered since twice-exceptional learners' giftedness might not be identifiable through traditional assessment practices. The argument here is that a child's disability might depress an FSIQ score, which would impact IQ-achievement discrepancy decisions

(Brody & Mills, 1997). Thus, the masking effect might prevent accurate identification when utilizing IQ scores (Waldron & Saphire, 1990). In fact, most researchers in the area of twice-exceptionality use a score of 120 as the criterion for identification of intellectual giftedness for either the FSIQ score or one of the major ability scales.

Still, the controversy remains, particularly for intellectually gifted children with an SLD, as to whether to identify students who have average academic achievement, but are still underachieving in comparison to their high intellectual aptitude. Even though intellectually gifted students with SLDs may have higher academic potential than other students with SLDs, this should not preclude their referral or identification for both exceptionalities (Brody & Mills, 1997). McCoach et al. (2001) noted that SLDs can exist in children of all ability levels; however, there is no current consensus on this issue.

It is also important to consider how the identification process is initiated. Teachers, including gifted education teachers, are often initiators of gifted program referrals (Carman, 2011; Karnes, Shaunessy, & Bisland, 2004). In addition, behaviors that are viewed as negative or difficult in the classroom might inadvertently create teacher bias, thus influencing teacher nominations for these students (Crim, Hawkins, Ruban, & Johnson, 2008). Other personal biases might influence the referral or identification process as well (Bianco, 2005; Bianco & Leech, 2010; Minner, 1990). Furthermore, many teachers have stereotypic beliefs in regard to gifted students (Carman, 2011), and the stereotypes associated with students who are in gifted programs contradict the commonly held beliefs toward students with disabilities (Nielsen, 2002). Some educators might also assume that gifted students do not need specialized instruction or

intervention to excel and that instead they will excel on their own (Assouline et al., 2006).

Furthermore, in comparison to gifted education teachers, other types of teachers and school psychologists rated their confidence in making appropriate referrals for twice-exceptional students as relatively high, but also reported less knowledge of and experience with twice-exceptional learners (Foley Nicpon et al., 2013). It is additionally concerning that in a recent national survey of practicing school psychologists, approximately 60% of the sample reported none to little familiarity with twice-exceptional populations (Robertson et al., 2011). This might be explained by the fact that educators and professionals are typically only familiar with standards relevant to their area of expertise (Foley Nicpon et al., 2013), as well as only having experience teaching specific populations related to their educational training (Bianco & Leech, 2010).

Some are also starting to consider how Response to Intervention (RtI) might be utilized to identify twice-exceptional learners, especially to eliminate the use of IQ-achievement discrepancy criteria for intellectually gifted students with SLDs. No studies have yet to empirically examine the use of RtI for twice-exceptional students; however, McKenzie (2010) cautioned against the use of RtI to identify these students because it might lead to further under-identification. For example, if a student achieves average scores on RtI progress monitoring measures, it is likely that the child's intellectual ability remains unknown; if that same child is intellectually gifted, the child's seemingly average performance in the classroom might actually be indicative of an SLD. However, this child would respond to benchmarks in an RtI model (Volker et al., 2006). Some argued

that RtI seems to be better suited to identify those with SLDs at this time, but not those who are potentially gifted as well (Volker et al., 2006).

On the other hand, Crepeau-Hobson and Bianco (2011) suggested an integrated model for identifying these students. While it is common practice to use curriculum-based measurement (CBM) at grade level to monitor progress, the authors suggested the use of above grade level CBM to help identify students who may need more challenges or strength-based interventions (Assouline & Whiteman, 2011; Crepeau-Hobson & Bianco, 2011). Crepeau-Hobson and Bianco (2011) proposed the use of observation, rating scales, focused measures of achievement, and specific subtests from cognitive measures, as well as CBM, at the Tier 2 level to help in the identification of specific areas of strength. They also recommended that those in Tier 3 should receive a comprehensive, multidisciplinary psychoeducational evaluation.

Others champion the use of both RtI and comprehensive psychoeducational assessment, including cognitive and academic performance measures, to give a more complete picture of the child (Assouline, Foley Nicpon, & Whiteman, 2010). These researchers argued that while RtI can provide useful information, nothing could replace a comprehensive evaluation, which would better describe that individual's skills and needs.

In summary, there are several challenges noted in the identification process for twice-exceptional students. Even though twice-exceptional learners are more likely to be referred for a suspected disability than giftedness (Woodrum & Savage, 1994), Nielsen (2002) proposed that twice-exceptional students should be considered "at promise" instead of "at risk." While some schools are identifying these students (Karnes et al., 2004; Tallent-Runnels & Sigler, 1995), differences in eligibility criteria and definitions of

giftedness seem to affect overall identification. In all, more empirical research is needed to address all types of twice-exceptional learners, as well as different methods of identification, including RtI, integrated models of assessment, and comprehensive evaluation.

Giftedness and Autism Spectrum Disorder

Few empirical studies have investigated twice-exceptionality for individuals who are gifted and have ASD (see Foley Nicpon et al., 2011). Still, several areas and issues have been highlighted, including: common characteristics, difficulties in differential diagnosis, and supports needed. Clearly, there is a great need for additional research for this group of learners, especially since the prevalence of those with ASD is now 1 in every 88 persons and has increased over recent years (Centers for Disease Control and Prevention, 2012).

It can be difficult to differentiate giftedness, ASD, and twice-exceptionality due to some shared characteristics. Neihart (2000) even argued that some gifted youth might be misdiagnosed with Asperger's Disorder. There are several possible similarities among gifted youth and students with ASD, including: verbal fluency; above-average memory; enjoyment of memorizing factual or rote information; restricted interests in a specialized topic; limitless talk about that interest to others; and uneven developmental profiles (Assouline et al., 2009; Cash, 1999; Donnelly & Altman, 1994; Neihart, 2000). These groups of students may also have difficulties with social skills and may come across as "discourteous, argumentative, stubborn, uncooperative, [and] egocentric" (Cash, 1999, p. 23).

Neihart (2000) suggested that differences between gifted youth with Asperger's Disorder and those who are gifted might be observed in the student's use of pragmatic language, ability to take another's perspective, and expression of emotion. Other differences in speech patterns, responses to changes in routines, social awareness, reasons for attention difficulties, quality of humor, motor clumsiness, affect, stereotypy, and self-regulation of behaviors might aid in differential diagnosis (Cash, 1999; Little, 2002; Neihart, 2000).

Assessment of social skills and adaptive functioning can provide important insight into differentially diagnosing those who are gifted and those who are gifted with ASD (Assouline et al., 2009), since it can be difficult to determine whether atypical behaviors should be attributed to the student's giftedness or ASD characteristics (Neihart, 2000). Assouline et al. (2009) noted that gifted students and gifted students with ASD may both have social skill deficits, but that determining whether it is internally based or due to the environment (e.g., an understimulating academic setting) can help in regard to diagnostic decisions.

Assouline et al. (2009) highlighted the importance of comprehensive assessment, especially for differential diagnosis, through a case study comparison of two intellectually gifted females—one with ASD and one without ASD. In this case, if the examiner had only evaluated the student's intellectual functioning and academic achievement, he or she would have found similar profiles (Assouline et al., 2009). Overall differences were noted in attention, inhibition, memory for faces, affect recognition, and auditory attention. In addition, a detailed developmental history is essential (Neihart, 2000) and can help identify the motivations behind different

behaviors, which in turn might also help differentiate between giftedness and ASD (Little, 2002).

In one of the few empirical studies in this area, Foley Nicpon, Doobay, and Assouline (2010) investigated the perceptions of psychosocial functioning of intellectually gifted children, ages 5 to 11 (n = 39), and adolescents, ages 12 to 17 (n = 15), with ASD, as well as their parents and teachers. While the children and adolescents did not report any at risk or clinically elevated scores on the Behavior Assessment System for Children, Second Edition (BASC-2), parents and teachers did. This may however be an issue with self-report and limited insight into their difficulties (Foley Nicpon et al., 2010). Parents reported the behavioral symptoms index and atypicality in the clinically significant range and the following composite scores in the at risk range: externalizing problems composite, internalizing problems composite, and adaptive skills composite. In comparison, teachers reported fewer concerns at school and only reported the behavioral symptoms index in the at risk range. Both groups reported depression, withdrawal, adaptability, and atypicality as areas of concern. This brings to light the concerns that parents and teachers are observing and perceiving in twice-exceptional youth with ASD; however, it is important to keep in mind that while many group means were within normal limits, there was still considerable variability in many of the scales, which indicates the need to continue to evaluate these areas of potential concern at the individual level (Foley Nicpon et al., 2010).

Assouline, Foley Nicpon, and Dockery (2012) expanded our understanding of intellectually gifted students with ASD in regard to academic achievement. In an empirical study with 59 intellectually gifted participants with ASD who were in grades

K-12, these researchers found that reading and math achievement were significantly positively correlated with participation in talented and gifted programs. The researchers also found that the Working Memory and Processing Speed Indices of the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV) accounted for 61% of the variance in reading achievement, and the Processing Speed Index, participation in talented and gifted programming, and fine motor skills (as assessed by the Beery-Buktanica Test of Visual Motor Integration) accounted for 60% of the variance in math achievement (Assouline et al., 2012). While there is still unexplained variance in achievement for these twice-exceptional participants, this study provides preliminary evidence regarding the intellectual functioning and academic achievement of intellectually gifted students with ASD. This study also empirically demonstrated the importance of participation in talented and gifted programming. Future studies might consider additional variables to target this unexplained variance, such as home literacy activities, attitude toward school, quality of teacher-student relationships, age at identification of twice-exceptionality, and emotional wellbeing, to name a few.

Little (2002) noted that these children can easily "blend in" due to their verbal skills, which, in turn, might prevent them from being properly identified. If the gifted student with ASD does not receive appropriate educational supports, this may lead to anxiety, social isolation, and underachievement (Neihart, 2000). In order to be successful in the classroom, the use of visual supports, social skills interventions, and behavior management strategies might be essential (Neihart, 2000).

In all, anecdotal information and clinical opinion currently contribute more to this area of twice-exceptionality, thus indicating the great need for additional empirical

studies that use multiple comparison groups across different ages. To date, only one empirical study has illustrated the difficulty in differential diagnosis among individuals who are gifted or twice-exceptional with ASD, which was a case study design (Assouline et al., 2009), and only a few studies targeted the cognitive, academic, and psychosocial characteristics of these students. Research in this area needs to continue to expand to other areas of giftedness, not only intellectual and academic giftedness. Furthermore, no study has yet to target the referral decisions for these twice-exceptional students. With little empirical evidence, conclusions about gifted individuals with ASD cannot be generalized across this group.

Giftedness and Specific Learning Disability

The majority of the research on twice-exceptionality is on students who are intellectually gifted and have an SLD. Indeed, some use a narrowed definition of twice-exceptionality to describe these individuals, excluding other areas of giftedness and disabilities. Historically, many viewed these students as either belonging to one group or the other—that is gifted or has a disability—but rarely to both (Crim et al., 2008); however, research has expanded to instead describe the unique characteristics of these individuals. The literature is focused on the cognitive and academic profiles of these students, as well as their social and emotional characteristics and needs. These areas will be discussed further.

In regard to cognitive abilities and academic performance, Waldron and Saphire (1992) found that in comparison to intellectually gifted students, the twice-exceptional participants (ages 8 to 12) had weaker decoding skills in reading, spelling skills, auditory and visual discrimination, and sequencing skills; furthermore, perceptual and memory

deficits likely influenced various academic tasks. However, these researchers did not include what types of SLDs these students had, so it is difficult to know exactly how these findings generalize.

Assouline et al. (2010) investigated the cognitive and psychosocial characteristics of 14 students who were intellectually gifted with a disorder of written expression, although, five of these participants also had an SLD in reading. The researchers found large variation among cognitive ability scores, suggesting there is no specific cognitive profile for these students. They did, however, note that as a group these students had stronger verbal abilities than nonverbal abilities. Furthermore, they reported that due to the variation among ability scores on the WISC-IV, the FSIQ was not the best indicator of twice-exceptional students' cognitive abilities; they reported a near one standard deviation difference between the FSIQ and the general ability index (GAI), indicating the potential for these students to be missed for gifted and talented programming if that program relied on the FSIQ alone. A positive finding from this study was that parents, teachers, and students all reported adaptive skills in the average range, as measured by the BASC-2. Students reported no elevated psychosocial issues, and parents reported more externalizing concerns than teachers (Assouline et al., 2010).

The majority of the research on the social and emotional characteristics of twice-exceptional individuals has also been conducted with this population. A common theme noted throughout the literature is negative schooling experiences. Gifted students with SLDs seem to be at risk for lower self-esteem and self-efficacy, as well as high levels of frustration and anxiety, particularly in school (Assouline et al., 2010; Baum & Owen, 1988; Dole, 2001; Neihart, 2000; Reis, Neu, & McGuire, 1997; Vespi & Yewchuk,

1992). Teachers may perceive these students to be lazy, since they are not living up to their perceived strengths or abilities (Reis & Colbert, 2004; Reis, McGuire, & Neu, 2000; Reis et al., 1997). It has been argued that these students are often set up to fail in school because they do not achieve teacher and parent expectations or goals (King, 2005; Vespi & Yewchuk, 1992). Negative schooling experiences might also be related to few perceived social supports and difficulties maintaining friendships (Kauder, 2009; Reis & Colbert, 2004; Vespi & Yewchuk, 1992).

Twice-exceptionality for this population is where perhaps the dichotomy of strengths and weaknesses may be most evident in the classroom. These students are often aware of their superior ability in one area, as well as their extreme difficulties in another area, which can be confusing (Dole, 2001; King, 2005; Vespi & Yewchuk, 1992). Their unpredictable and potentially confusing performance in the classroom may result in teacher and student frustration as well (Assouline et al., 2010). Due to the nature of these two exceptionalities, some classroom tasks might be quite easy, while others might be challenging, resulting in subsequent successes and failures. This might, in turn, lead to poor motivation, feelings of helplessness, disruptive classroom behavior, poor task completion, careless mistakes in academic work, difficulties paying attention, low self-esteem, poor social skills, and greater internalized anxiety (Baum & Owen, 1988; Coleman, 1992; Reis & Colbert, 2004; Ruban & Reis, 2005; Vespi & Yewchuk, 1992; Waldron, Saphire, & Rosenblum, 1987). In addition, while they may be particularly sensitive to criticism from others, they may also be highly critical of themselves and their abilities (King, 2005; Vespi & Yewchuk, 1992).

Kauder (2009) and Waldron et al. (1987) also found that twice-exceptional learners reported a lower self-efficacy in relation to intelligence and academics when compared to gifted students. Kauder (2009) found that sense of inadequacy was negatively correlated with self-esteem and self-concept and that twice-exceptional learners in this study reported a higher sense of inadequacy when compared to other gifted students. Even though differences were noted in self-esteem and self-efficacy scores among twice-exceptional and gifted samples in Kauder (2009), it is also important to note that all the scores were within the average range. Vespi and Yewchuk (1992) also reported that twice-exceptional students had overall positive self-concepts, which was further acknowledged by the participants' teachers and parents, though the sample size in this study was small. The literature on self-efficacy is clearly conflicting in regard to this group of twice-exceptional students.

In a study that investigated the ways in which twice-exceptional students in grades 6 to 9 cope with difficult school situations, Coleman (1992) found that the twice-exceptional boys were more likely to use an analytical and problem-focused approach to solve the problem, and the boys with SLDs were more likely to avoid the problem, express feelings of being overwhelmed, and use cognitive strategies to minimize the significance of the situation (Coleman, 1992). It is important to note that both groups relied on social supports, such as teachers, parents, and friends for coping, and there were no differences between the groups on perceived successes in the coping scenarios. Both groups acknowledged their personal responsibility for success in these situations; the twice-exceptional group tended to focus on what specifically they could do to overcome the difficulty, while the group with SLDs was more self-critical (Coleman, 1992).

In a small case study investigation of four boys, ages 9 to 12, with intellectual giftedness and an SLD, Vespi and Yewchuk (1992) found that these participants expressed generally positive feelings of self-confidence, especially in regard to specific strengths or interests; however, they attributed their classroom successes to hard work and a good attitude, which means they seemed unlikely to take into account the task demand or other factors that might make it difficult to be successful at all tasks in school. Frustration, fear of failure, and negative attitudes toward school were noted for all participants (Vespi & Yewchuk, 1992). Furthermore, boredom with mundane and repetitious tasks was reported. While this was a small sample and had no comparison group, it provides some insight into the possible difficulties these students might face at school. There seems to be a conflict between what these students expect to achieve and their actual achievement at school.

In comparison to others areas of twice-exceptionality, there is some research on how parent-child relationships might impact these students, but the research is conflicting. Barber and Mueller (2011) reported that twice-exceptional students had significantly less positive perceptions of their mothers when compared to other gifted students, which might influence that student's self-concept and school experiences. In contrast, Vespi and Yewchuk (1992) found that three out of four of the twice-exceptional students in their study reported supportive family relationships; however, all the parents who participated also expressed stress and difficulty understanding or accepting their child's academic problems. Furthermore, the students were also aware of their parents' frustration toward their academic difficulties, which may negatively impact their learning experiences and expectations as well.

In all, this area of twice-exceptionality has the most research, although, it is predominately focused on those who are intellectually gifted and have an SLD. Similar to those who are gifted and have ASD, the research needs to expand to other areas of giftedness, as well as different types of SLDs. As a whole, these students seem to have difficult schooling experiences due to academic, social, and emotional issues. It is clear that supports are needed to help these students succeed in school. There is also some evidence to suggest that parents can serve as major supports, but that they may also have difficulty understanding their child's needs.

Clinical Judgment and Bias

Clinical judgment plays an important role in the identification of twice-exceptional students. In addition, bias, stereotypes, and heuristics might influence teachers and school psychologists during this process. From observations in the classroom to assessment and integration of data, clinical judgment is used to identify a disorder and make educational placement decisions. Furthermore, clinician training, past experiences, individual characteristics, and culture might influence these decisions as well. These factors will be further explored, with additional focus on the diagnostic overshadowing bias, labeling bias, and other potential biases in the referral process.

While there are several theories to explain clinical judgment, Dual-process theory captures both the intuitive and analytical sides to making decisions. This dual-process consists of two systems or modes of thinking to explain how people approach a situation. System 1, also known as the heuristic or intuitive approach, describes when a person thinks quickly and efficiently. System 1 is typically initiated first as an immediate response to salient characteristics of the presenting issue (Croskerry, 2009). Heuristics

are often used in this mode (Norman, 2009; Robinson-Riegler & Robinson-Riegler, 2008), which are cognitive shortcuts to make quick and efficient decisions based on a considerable amount of integrated information (Davidow & Levinson, 1993; Tversky & Kahneman, 1974). These can also be based off of previous experiences of the decision-maker (Norman, 2009). While System 1 is effective most of the time, it can be influenced by a variety of variables related to the decision-maker, the environment, and the case (Croskerry, 2009), which in a clinical perspective can lead to misdiagnosis or inaccurate placement and service decisions.

In contrast, System 2, which is also known as the analytical mode, consists of slow, deliberate reasoning and critical thinking. System 2 is more cognitively demanding (Robinson-Riegler & Robinson-Riegler, 2008) and takes place under more ideal decisions for making an accurate decision (Croskerry, 2009). The analytical mode is often initiated if the case does not elicit an automatic response or decision, that is, an intuitive response (Croskerry, 2009). For example, this might happen if the presenting characteristics of a child do not fit a particular diagnosis or if there is conflicting information that might indicate several possible explanations. The decision-maker can also switch back and forth between the two systems throughout the entire decision-making process. Although Norman (2009) argued that both systems are essential for decision-making, System 2 is more likely to result in accurate decisions (Croskerry, 2009).

The majority of the research on clinical judgment in this area has typically targeted System 1 issues, such as specific heuristics or biases. For example, according to Myers (2009, p. 77), there are four common ways in which people form impressions,

judgments, and explanations: "1) our preconceptions control our interpretations; 2) we often are swayed more by anecdotes than by statistical facts; 3) we misperceive correlation and control; and 4) our beliefs can generate their own conclusions." Therefore, one's preconceptions or beliefs about a person, a disability, or a gift might inform judgments and decisions. These heuristics can ultimately lead to misdiagnosis and under-identification.

Heuristics. Heuristics are cognitive shortcuts that help people make quick and efficient decisions, which play a role in clinical decision-making. In a major review of clinical decision-making in regard to social security disability decisions, several common cognitive simplification strategies were identified and discussed, including: the availability heuristic, adjustment and anchoring, errors of omission, and the confirmatory bias (Harding, 2004). The availability heuristic occurs when decisions are made based on the most easily accessed or recalled information (Tversky, & Kahneman, 1974). Whatever most readily or easily comes to mind thus influences decision-making (Davidow & Levinson, 1993). Adjustment and anchoring occurs after initial data are considered about a case and the judge or clinician fails to adjust impressions or decisions based on newly integrated information; the initial information therefore functions as an anchor (Tversky, & Kahneman, 1974). This can lead to over- or under-estimations (Davidow & Levinson, 1993). Errors or bias of omission may exist as well, which is when a clinician overlooks data that are relevant for an overall decision (Harding, 2004). Harding (2004) also identified the confirmatory bias as a common cognitive simplification strategy in social security disability decisions. The confirmatory bias

occurs when decision makers selectively attend to information that is more in line with their viewpoint, while disregarding data that disconfirm it (Norman, 2009).

Furthermore, judging by similarity occurs when the judge or clinician reviews a case and compares it to similar diagnostic categories or prototypes (Elstein, 1999). This is also known as the representativeness heuristic, in which clinicians tend to compare information to stereotypes, prototypes, or exemplars due to the basis of perceived similarity (Harding, 2004). These might be based on preconceived schemas and associations instead of actual contingencies or real-world probabilities (Davidow & Levinson, 1993). When this occurs, it may be less likely to consider alternative hypotheses.

Some of these heuristics have been investigated with teachers and school psychologists. In an investigation of the adjustment and anchoring heuristic, Foster and Ysseldyke (1976) first asked teachers to complete a referral form for expected behaviors associated with one of four treatment conditions: emotional disturbance, SLD, intellectual disability, and typical. Then, participants all watched the same video of an unknown length of time of a typical fourth grade boy and completed an additional referral form based on that video. Participants also completed a personality questionnaire and a child behavior checklist, both of which were not specifically identified. All three diagnostic label conditions produced more negative expectations in comparison to the typical child, with the most negative expectations for the child with an intellectual disability. These expectations did not change after viewing the same video of a typical child (Foster & Ysseldyke, 1976). The participants, therefore, used the initial label as an anchor and did not accurately readjust. One limitation worth noting is that Foster and Ysseldyke (1976)

included both general and special education teachers, but did not do any comparisons between the two groups; it is possible that there were unidentified group differences that were not examined in this study.

In an investigation of the confirmation bias, Huebner (1990) obtained a fairly representative sample of school psychologists in the U.S. and assigned participants to one of four treatment conditions. A vignette was developed by the researcher and included the reason for referral, background information, and test scores and observations from previous and current evaluations. Four vignette conditions consisted of differences in prior educational placement (special education placement vs. no special education placement) and the conclusions from the current evaluation (SLD vs. normal). Confirmation bias was not evident in this group of school psychologists in that previous diagnostic labels and educational placement did not seem to influence current diagnostic and placement decisions (Huebner, 1990). However, there seemed to be little potential ambiguity in decisions for the vignettes, since specific test data and descriptions were used to describe each child.

In contrast, the confirmation bias was demonstrated in a sample of school psychologists practicing in Pennsylvania. Participants reviewed hypothetical referral forms and vignettes about a child (with and without an oppositional defiant disorder [ODD] diagnosis) that included specific descriptive information that either met or did not meet eligibility requirements for emotional disturbance, resulting in four vignette conditions (Della Toffalo & Pedersen, 2005). The school psychologists responded to Likert-type ratings of how likely they were to conclude that the referred child should receive special education services due to emotional disturbance; they were also asked the

degree to which specific information (e.g., IQ score, grades, age) influenced that decision. While the referral form and vignette were not included in the article, an actual referral form was used, and the vignette included comprehensive information regarding the child's intelligence, achievement, and socio-emotional functioning, as well as intervention data, in order to make the placement decision as realistic as possible (Della Toffalo & Pedersen, 2005). Della Toffalo and Pedersen (2005) found that when the specific diagnostic label was provided, the hypothetical child was more likely to be identified as having emotional disturbance and in need of special education. This even occurred in the vignette condition that included the diagnostic label, but had descriptions of the child that clearly did not meet federal eligibility criteria (Della Toffalo & Pedersen, 2005). Confirmation bias was demonstrated in this sample and presents a need for further investigation of professional biases in the referral process.

In addition, several different clinician characteristics and behaviors related to clinical reasoning were explored in the clinical judgment literature. In a meta-analysis of 75 clinical judgment studies on mental health and psychological issues, Spengler et al. (2009) found a small effect ($d = 0.12$) for educational or clinical experience that was positively associated with judgment accuracy. The researchers concluded that more educational or clinical experience increases the accuracy of the judgment by almost 13%. However, inconsistencies in educational diagnostic decision rules, theoretical orientation, and weighting of diagnostic cues can also influence clinical decision-making (Davidow & Levinson, 1993). Furthermore, in the diagnostic overshadowing literature, Spengler and Strohmer (1994) found that counselors with lower cognitive complexity were more

likely to form biased clinical decisions, but that preferences for working with specific types of clients did not influence clinical decisions.

Overall, clinicians use both intuitive and analytical processes to make decisions, but the literature is focused on the intuitive modes of decision-making. Furthermore, while there is evidence for the use of adjustment and anchoring in relation to diagnostic labels and expectations, there was mixed evidence on the confirmation bias. However, the differing conclusions may be the result of how the studies were implemented and how exactly the variables were investigated instead of differences in the presence of the bias itself. While it is known that heuristics are used by people in a variety of situations, additional studies with teachers and school psychologists in particular would be beneficial in order to further investigate the common heuristics used in educational decisions for youth. Furthermore, bias, clinician training, individual characteristics, previous experiences, and culture can also influence the decision-making process, as well as our preconceptions about people and use of heuristics. Awareness of the many possible factors involved in clinical judgment is important in order to further understand the complexities and mechanisms of clinical decisions regarding twice-exceptional students.

Diagnostic overshadowing. The diagnostic overshadowing bias demonstrates how a variety of professionals can make inaccurate, biased diagnostic decisions based on a label or presenting evidence for a specific type of disability. In the first empirical study to examine diagnostic overshadowing and clinical judgment, Reiss, Levitan, and Szyszko (1982) developed case descriptions to elicit professional psychological opinions of a hypothetical individual with an intellectual disability and a potential phobia. They first described diagnostic overshadowing as the phenomena that occurs when an intellectual

disability “decreases the diagnostic significance of abnormal behavior that usually is considered to be indicative of a psychological disorder and ordinarily is not considered to be indicative of intellectual ability” (Reiss et al., 1982, p. 567). The researchers found that psychologists were significantly less likely to identify a phobia for the case study of the individual with an intellectual disability in comparison to the control vignette.

In a second experiment on diagnostic overshadowing, Reiss et al. (1982) investigated the phenomena with clinical and school psychologists. Three case vignettes were used to describe an individual with an intellectual disability. One also had schizophrenia, and the other had avoidant personality disorder. In all, participants rated the vignettes depicting the individual with an intellectual disability as less likely to have schizophrenia, psychosis, emotional disturbance, a personality disorder, thought disorder, or as needing long-term psychotherapy. Reiss et al. were able to demonstrate the diagnostic overshadowing effect.

Reiss and Szyszko (1983) demonstrated the diagnostic overshadowing effect again in a follow-up study. In this study, they compared: psychologists at state developmental disabilities facilities; psychologists at state mental health facilities; and clinical psychology graduate students. The two vignettes used in this study were developed by the researchers and described an individual with schizophrenia, but only differed in IQ. Participants were randomly assigned to a vignette condition. Similar to findings in Reiss et al. (1982), they found that participants were significantly less likely to identify the case vignette with an individual with an intellectual disability as also having schizophrenia, a neurotic disorder, an emotional disturbance, or nonassertive behavior. Furthermore, while professional experience was related to diagnostic ratings of

vignettes, diagnostic overshadowing was unrelated to professional experience (Reiss & Szyszko, 1983).

Spengler, Strohmer, and Prout (1990) extended these findings and investigated varying IQs and effect of clinical experience with rehabilitation counselors. The vignettes used were identical to those used in Reiss et al. (1982) and Reiss and Szyszko (1983), except for information describing intelligence and adaptive functioning. Participants were randomly assigned to a vignette condition. Interestingly, overshadowing effects were only found for the 58 IQ condition, but not for the 70 and 80 IQ conditions, indicating that diagnostic overshadowing may not impact those with a mild intellectual disability or intelligence in the borderline range (Spengler et al., 1990). Overshadowing effects were present with the following labels: schizophrenia, neurotic disorder, emotional disturbance, and needing psychotherapy and psychopharmacology. Furthermore, an interaction effect was found for diagnostic overshadowing and clinical experience as measured by months of experience working with individuals with an intellectual disability. Specifically, as months of experience working with individuals with an intellectual disability increased, participants were less likely to recommend psychotherapy or psychopharmacological intervention for the 58 IQ condition in comparison to the 108 IQ condition. Participants were also more likely to rate the individual with a 58 IQ with neurotic disorder than the person with average intelligence, of which this difference increased as experience increased (Spengler et al., 1990).

It has been demonstrated in the diagnostic overshadowing literature that a variety of professionals with varying experience make the diagnostic overshadowing bias. Furthermore, in a meta-analysis of thirteen diagnostic overshadowing studies, White et al.

(1995) found an overall effect size of 0.19 with similar effect sizes for overall diagnostic and treatment decisions. All the studies in the review also used analogue methodologies with accompanying Likert-type questions. With specific relevance to this study, the diagnostic overshadowing literature shows how the presence of a specific type of disability might negatively influence diagnostic and treatment decisions.

Labeling bias and bias in the referral process. Bias has also been noted for individuals with other types of disabilities when making referral decisions and recommendations. For the purposes of this section in particular, some specific labels or descriptors from older studies have been slightly changed to reflect person-first language or more recent terminology. In an investigation of potential labeling bias, elementary school teachers watched a video of a boy engaged in various classroom activities (Foster, Schmidt, & Sabatino, 1976). Teachers were randomly assigned to one of two treatment conditions; while the control group was told the boy was typical, the experimental group was told the boy had an SLD. After watching the 12-minute video, both groups were then asked to fill out a referral form for the boy based on the observed behaviors in the video. Even though the same video was shown to both groups, the presence of the SLD label influenced overall referral scores. Academic items were rated lower and the presence of more problem behaviors was reported (Foster et al., 1976). Even though these findings were based on a 12-minute video with small participant samples, the label clearly had an effect.

In another study that used video vignettes, preservice teachers recorded on- and off-task behaviors for a 3-minute video. They were first briefly trained in time sampling procedures and practiced on three videos (Allday, Duhon, Blackburn-Ellis, & Van

Dycke, 2011). For the actual experiment, four conditions were defined (i.e., attention-deficit/hyperactivity disorder [ADHD], ODD, gifted and talented, and no exceptionality defined), although, every group watched the same video. The researchers concluded that the diagnostic labels of ODD and gifted and talented specifically affected the ratings of off-task behaviors as increased and decreased, respectively. One limitation worth noting is that Allday et al. (2011) used undergraduate students as participants, and it is unknown whether the year in undergraduate studies was accounted for, which might have impacted overall findings.

In an analogue study of the labeling bias, in-service and pre-service teachers were compared on various ratings associated with written vignettes that described a child with ADHD characteristics and either included or did not include an ADHD label (Ohan, Troy, Visser, Strain, & Allen, 2011). Gender of the hypothetical child was also compared. While most other analogue studies assign one vignette to each participant, this study asked participants to read all four vignettes. Ohan et al. (2011) concluded that the ADHD label increased participants' negative expectations of the child's behavior, elicited more personal negative emotions, and decreased their confidence in their ability to instruct the child. The gender of the child only influenced the participants' confidence in handling the child's behaviors; participants seemed to be more confident in handling boys' behavior than girls' behavior. Ohan et al. (2011) also demonstrated that experience teaching seemed to decrease the labeling bias, but only in the teacher's willingness to implement class-based behavioral programs. Moreover, training specific to ADHD seemed to decrease the labeling bias for willingness to support or help in all three treatment interventions assessed (i.e., learning assistance, medication, class-based

behavioral strategies). Interestingly, training was also linked to a more negative influence on personal ratings of emotional reactions (Ohan et al., 2011).

Other researchers have investigated what types of information might bias special education placement decisions. Knoff (1983) compared four groups in how they would rate the importance of different pieces of diagnostic data. Participants included school psychologists, school psychology graduate students, special education teachers, and special education trainees. Sixteen types of diagnostic data were rated using Likert-type scales on the importance in determining an educational placement decision. There were no significant differences found between the four groups of participants. Sex, race, income level, and habitat (i.e., home environment) were rated as the least important for diagnostic decisions, while classroom observations, receptive-expressive language, interview with the child, and emotional indicators were rated as the most important. Even though the participants rated race and income level as less important factors, these descriptors have been shown to elicit bias in the referral process (Carman, 2011; Minner, 1990; Podell & Soodak, 1993). For example, students from lower income homes and minority groups were less likely to be nominated for gifted programming and more likely to be referred for special education (Minner, 1990; Podell & Soodak, 1993). In addition, teacher characteristics can further complicate educational placement decisions, including personal bias held toward certain groups (Carman, 2011; Podell & Soodak, 1993). In all, this shows how participants might be less likely to self-report bias, but that they might demonstrate it through decision making in other types of research methodologies.

Prout and Frederickson (1991) investigated the effect of sex and type of disorder (i.e., internalizing or externalizing disorder) on clinical decisions. Likert-type ratings

were used to assess the perceived degree of disturbance, as well as the importance of four types of interventions. While there was no significant effect for the sex of the child in relation to perceived degree of disturbance, there was a significant finding for sex and intervention decisions. When the vignette described a male student, it was rated slightly more important to intervene than when a female was the described client (Prout & Frederickson, 1991). The researchers, however, cautioned the transition of this potential bias to real-world practice due to the use of an analogue methodology and that the statistically significant findings might not reflect meaningful differences in practice. Studies of actual professional behavior might clarify this finding.

In a study investigating teacher efficacy and bias in special education referrals, teachers were randomly assigned to one of six vignette conditions with varying combinations of the following variables: socioeconomic status (SES; low vs. high) and learning problems (i.e., unspecified etiology, medically-based, environmentally-based) (Podell & Soodak, 1993). The researchers developed the vignettes and randomly assigned participants to a vignette condition. After reading the vignette, teachers were then asked to respond to Likert-type ratings in regard to the appropriateness of the current class placement in the general education classroom and if they would refer the student to special education, as well as respond to a measure of teacher self-efficacy. Podell and Soodak (1993) found that teachers with self-reported low self-efficacy were more likely to refer the hypothetical child to special education, as well as children described as being from a low SES family; on the other hand, teachers with self-reported high self-efficacy did not refer children differently based on SES. In addition, when the student had learning problems with an unspecified etiology (in comparison to medical or

environmental explanations), teachers as a whole were more likely to refer that child to special education (Podell & Soodak, 1993).

In one of the first studies to specifically investigate bias in the referrals of twice-exceptional students, teachers read a vignette depicting a gifted boy; the diagnostic label (i.e., SLD, physical impairment, or no label) was the only differentiating descriptor (Minner, Prater, Bloodworth, & Walker, 1987). Minner et al. (1987) used descriptions of gifted children from three different introductory special education textbooks to develop the vignette. The vignette in Minner et al. (1987) differed from others in that it consisted of predominately positive characteristics of the hypothetical child. After reading the vignette, participants were asked to respond to two questions regarding the referral of the child for possible placement in a gifted program. Teachers were less likely to "place" or refer the student with an SLD label in a gifted program when compared to the other two groups (Minner et al., 1987).

In a similar study, Minner (1990) used a written vignette to describe a gifted student. Minner (1990) used a similar vignette development strategy as Minner et al. (1987), and the vignette also consisted of predominately positive characteristics of the hypothetical child. Teachers were informed the hypothetical child was in a part-time special education class for children with SLDs, and the other half received no labeling information, although, the vignette did include an IQ of 130 as a descriptor (Minner, 1990). An additional variable of SES was also investigated with approximately equal numbers receiving descriptors that the child was from either an upper, middle, or lower SES family (Minner, 1990). Children with an SLD label were significantly less likely to be referred for possible placement in a gifted program (Minner, 1990). It was also

concluded that students from middle and lower SES conditions were less likely to be referred in comparison to the upper SES condition.

Of particular relevance for this study, Bianco and Leech (2010) investigated the referral decisions of general education, special education, and gifted education teachers by using written vignettes. This was an extension of a previous study (see Bianco, 2005) by adding an additional comparison group—gifted education teachers. Participants were randomly assigned to one of three vignette conditions—SLD, emotional behavioral disability (EBD), or no label. Bianco and Leech (2010) utilized a panel of experts (i.e., teachers certified in gifted education and who also worked at a special school for the gifted) to review the vignette for content validity and to aid in its development. The vignette described a gifted student and only differed in the presence of the diagnostic label. After reading the vignette, participants were asked to respond to questions regarding possible recommendations for the student, including whether the teacher would recommend that the child be referred for placement in a gifted program. Some participants were also asked to provide a brief explanation for their response to the gifted referral question. Overall, all three types of teachers were more likely to refer students without a disability label compared to those with either an SLD or EBD disability label. Even though biased responses were found for all three groups, gifted education teachers were more likely to refer children with disability labels for gifted placement, while special education teachers were the least likely to make a referral for children with disability labels (Bianco & Leech, 2010). In addition, qualitative analysis revealed that special education teachers frequently requested intelligence scores to help them determine whether the student should be referred to a gifted program.

In all, several disability labels have been shown through analogue studies to elicit biased responses in diagnostic decisions and referral recommendations. Children with disability labels seem to be less likely to be considered for gifted education services and more likely to be recommended for special education services. Labels have even been shown to influence recorded observed behaviors of children as well. Other variables have been considered, including: gender, race, SES, and teacher characteristics. It is evident that many variables or descriptors can influence and bias the referral decisions and recommendations for students.

Outcomes for Twice-exceptional Individuals

As previously discussed, there are several issues with identifying twice-exceptional students. Differences in definitions and eligibility criteria, as well as issues with differential diagnosis, can impact accurate identification. This is further complicated by clinical judgment and bias. If children are not appropriately identified, their strengths are not nourished and their weaknesses are not remediated. There may also be a perceived need to choose between serving the child's difficulties or strengths, instead of supporting the development of both (Hughes, 2011). Furthermore, little is currently known about the outcomes for twice-exceptional students, although, these studies do provide some preliminary evidence for what these students may need during primary and secondary school, as well as what their post-secondary experiences might be like if they are not identified and do not receive appropriate services.

While in school, it is essential to provide these students with opportunities to develop their gifts; such opportunities can positively influence the child's self-concept and attitude toward school (Nielsen & Mortorff-Albert, 1989). Educational programming

that focuses on the child's strengths and passions might include: mentoring, authentic learning experiences based on that child's specific interests, and strength-based accommodations (Bianco, Carothers, & Smiley, 2009). Without proper identification or educational programming for a child's giftedness, that child may not get the opportunity to be challenged, work independently in specific areas of interest, or obtain accelerated instruction with similar peers. Furthermore, while there are few intervention studies related to twice-exceptionality, it has been shown that individualized enrichment programs and counseling that targets productive thinking, communication, forecasting, decision-making, and planning can positively influence school attitudes and self-concept among twice-exceptional students (Olenchak, 1995, 2009). In addition, if twice-exceptional students are not given the opportunity to expand and develop their skills, they may have difficulty applying their skills in practical or useful situations (Donnelly & Altman, 1994; Little, 2001). In fact, a passion or specialized interest might some day become a career (Little, 2002). If a student's specialized interest is not bolstered and encouraged, this might negatively impact the student's future educational and vocational successes.

Unfortunately, many students may be denied access to enrichment or gifted and talented programs due to problem behaviors. Furthermore, these behaviors might increase if they lack the appropriate supports (Donnelly & Altman, 1994; Ruban & Reis, 2005). Rather, they may be more likely to receive specialized instruction for their disability, which can be detrimental (Woodrum & Savage, 1994). An exclusive focus on remediation can increase the child's risk for depression and academic failure (Bianco et

al., 2009). These students can have negative schooling experiences if they are placed in the wrong classroom or have teachers who do not understand their needs.

This highlights the importance of understanding the unique characteristics of twice-exceptional students and how they might be served in school. In a review of individualized education program (IEP) modifications for students with SLDs, Crim et al. (2008) found that students in grades three to five who also had above average IQs received fewer modifications than students with average and below average IQs. While this might be expected in that those with higher IQs may not need as many modifications or supports in the classroom, it might also indicate a bias in that these students do not need as many supports and can be successful on their own (Crim et al., 2008). However, it is important to note that the high IQ group consisted of students with a score of 116 or higher, which is lower than other study criteria for this population. Perhaps the most important finding from this study was that from this large sample, not one IEP mentioned potential giftedness or any previous testing for gifted programming.

Clearly, there is a challenge to provide the appropriate supports in school to help these children have more successful educational experiences and post-secondary outcomes. In an archival study through the Division of Vocational Rehabilitation, 80 participants (ages 18 to 48) who were intellectually gifted with an SLD were identified to examine their post-high school outcomes. It was found that on average, individuals were identified for their SLD later in life at age 14.2 years or approximately 8th grade, indicating a possible masking effect (Holliday et al., 1999). Even more striking is that only six participants (7.5%) were notified they were intellectually gifted, and the majority of the IEPs reviewed indicated no intellectual strengths. Holliday et al. (1999) also found

that vocational rehabilitation counselors were more likely to mention the individual's SLD than their giftedness. In regard to post-secondary goals and schooling, 48% of the sample indicated a desire to complete either a 2-year or 4-year program; however, only 18% actually completed a post-secondary educational or training program (Holliday et al., 1999). Furthermore, the researchers found that 76% of the sample earned less than $6 per hour, and 30% of the sample had a comorbid psychiatric condition, including mood and anxiety disorders.

Several studies focused on gifted college students with SLDs. Ferri et al. (1997) also found that twice-exceptional students were identified with an SLD later in life in comparison to students with an SLD. Specifically, 54% of the students with an SLD were identified in elementary school, whereas only 35% of the twice-exceptional students were identified for their SLD while in elementary school (Ferri et al., 1997). Furthermore, 34% of the group with SLDs and 41% of the twice-exceptional group were not identified for their SLD until college; even more troubling was that only four participants in the twice-exceptional group were identified for gifted placement prior to college (Ferri et al., 1997). However, background information was not described for these participants, so it is possible that there are alternative explanations for the later identification of these students.

Reis et al. (1997) reported similar findings. Qualitative analysis revealed that students reported negative school experiences, including social problems, difficulty with teachers, and frustration in specific academic areas. Participants were identified as having a high IQ in either elementary or secondary school, but were frequently not included in gifted programming. In particular, Reis et al. noted that it was the combination of

giftedness and a disability that seemed to increase their difficulties in school, as well as their relationships with teachers and parents. Some teachers described these students as lazy or inattentive, which, in turn, made some participants question their academic skills and have doubts about their abilities. Some required counseling later in life to reconcile negative schooling experiences. In a more positive light, many participants noted the importance of mentor figures, including teachers and counselors who helped them be more successful in school. While some parents had difficulty understanding their child's needs and abilities, parental support was deemed essential for skill and talent development, as well as for personal support (Reis et al., 1997).

In a third study on gifted college students with SLDs, Lovett and Sparks (2010) found that twice-exceptional students had higher achievement, as measured by standardized academic achievement measures and the ACT, in comparison to those with SLDs. These students also had significantly higher GPAs (Lovett & Sparks, 2010), although, the mean difference between the groups was 0.1, which might not be considered a meaningful difference. While the twice-exceptional students in this case seemed to fare better in college than those with SLDs, there are some limitations to consider. Namely, a comparison group of typical college students was not used, which would have provided a better understanding of how these students compared to typical peers.

Dole (2001) specifically focused on the identity formation of four college students with SLDs, who were gifted in various areas. Through narrative inquiry and qualitative analysis, Dole (2001) found that knowledge of the self, including their strengths and weaknesses, helped lead to self-acceptance and later self-advocacy and self-

determination. Support networks were essential for identity formation and included parents, teachers, tutors, and friends who served as mentors, emotional supports, and additional educational supports. Even though frustration and poor self-efficacy were common descriptors for their schooling experiences, extracurricular activities were deemed important to help give the participants time to develop their talents, interests, and self-esteem (Dole, 2001).

For those who are successful in college, many compensatory strategies might be employed. In a study of 12 twice-exceptional students, whose gifts varied but all had an SLD, participants reported that study and performance strategies (e.g., note taking, time management, using organizers), cognitive and learning strategies (e.g., mnemonics, chunking), and compensation strategies (e.g., use of computers, books on tape) were essential for their college success (Reis et al., 2000). All participants learned these strategies through a university program for students with SLDs; however, a lack of information regarding the various areas of giftedness and how each was determined was not included in the study. It seems that in order to be successful in college, these students developed their own repertoire of strategies; they committed considerable time and effort toward their studies, and many chose majors that capitalized on their strengths (Reis et al., 2000).

In conclusion, twice-exceptional students are at risk for being identified later in life or not at all. They are also more likely to be identified for their disability instead of their giftedness, which can impact their self-efficacy, self-esteem, and even life goals and opportunities. Many also remain unaware of their strengths and talents, although, it is promising that some attend post-secondary educational institutions and are able to utilize

disability resource centers on college campuses to receive accommodations or be taught specific strategies to be more successful in college. More studies are needed in this area to investigate the vocational outcomes for students who do not go to college, as well as other areas of twice-exceptionality besides high intellectual aptitude and a concomitant SLD.

Summary

In summary, there is limited empirical evidence to describe the characteristics and needs of twice-exceptional individuals or to explain the unique challenges they face. Furthermore, accurate identification of these students seems to be influenced by numerous factors. Most notably, state and district eligibility criteria and definitions of giftedness seem to influence identification, as well as the provision of services, for twice-exceptional students. In addition, the majority of teachers and school psychologists, who might serve as potential initiators for referrals, seem to know little or none about this population.

Bias and the clinical judgment process further complicate identification. The use of heuristics and the influence of bias, clinician characteristics, and previous experiences, among others, can influence the referral and identification process. Through the use of analogue studies, several disability labels and case descriptions have been shown to elicit bias responses in diagnostic decisions and referral recommendations. A variety of professionals have demonstrated the diagnostic overshadowing bias, labeling bias, bias in referral decisions, and the use of heuristics. In all, children with disability labels and associated descriptors seem to be less likely to be considered for gifted education services

and more likely to be recommended for special education services. Other variables can influence this process as well, such as gender, SES, IQ, and ethnicity, to name a few.

Thus, identifying the unique characteristics of these individuals remains a challenge. The literature is also concentrated on those who are intellectually gifted, and much less is known about gifted individuals with ASD in comparison to gifted individuals with SLD. However, in all, these students do seem to be at risk for more negative schooling experiences, and many do not seem to have the academic, social, and emotional supports they need. They remain misunderstood and underserved.

Twice-exceptional students are at risk for being identified later in life or not at all. Understanding the bias and judgment rationale associated with different types of potential initiators of referrals for identification and services might provide some understanding as to the variables that could impede this process. Awareness of these factors might inform future policy decisions and educational programming and training, which might, in turn, help identify these students earlier in school. Doing so might then provide twice-exceptional students with the services and supports they need to have more positive schooling experiences and outcomes.

Purpose

The purpose of this study is to investigate the recommended referral decisions of teachers (i.e., gifted education, general education, special education) and school psychologists for twice-exceptional students. It will attempt to expand the literature on gifted individuals with either SLD or ASD in regard to special education and gifted education referral decisions. It will not only identify and describe the referral recommendations for these students, but also the explanations for these referral decisions.

This, in turn, can elucidate what factors might influence the referral decisions for twice-exceptional students. Specific research aims, questions, and hypotheses are described below.

Aims, Research Questions, and Hypotheses

Aim 1: To determine who is more likely to recommend a referral for a special education evaluation across vignette conditions, as well as for specific vignette conditions.

1a. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation?

1b. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation for the student with an SLD label?

1c. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation for the student with an ASD label?

1d. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation for the student with no diagnostic label?

Since these four types of participants have yet to be compared in a single study on referral decisions for twice-exceptional students, it is difficult to formulate a specific hypothesis. However, given that special education teachers are less likely to refer students for gifted education when compared to other types of teachers (Bianco & Leech,

2010), it is anticipated that special education teachers will be more likely than other participants to refer any type of student for a special education evaluation.

Aim 2: To determine who is more likely to recommend a referral for a gifted programming evaluation across vignette conditions, as well as for specific vignette conditions.

2a. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming?

2b. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming for the student with an SLD label?

2c. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming for the student with an ASD label?

2d. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming for the student with no diagnostic label?

Similar to research question 1, it is difficult to formulate a specific hypothesis for this research question since these four groups have yet to be compared in a single study on the referral decisions for twice-exceptional students. However, given that gifted

education teachers were more likely than other types of teachers to refer students with disability labels for gifted programming (Bianco & Leech, 2010) and that gifted education teachers report more knowledge of and experience with twice-exceptional students when compared to other types of teachers and school psychologists (Foley Nicpon et al., 2013), it is anticipated that gifted education teachers will be more likely than other participants to refer any type of student for a gifted programming evaluation.

Aim 3: To determine what type of student is more likely to be recommended for a referral for a special education evaluation and to describe the reasons or rationale for this referral decision.

3. What type of student (i.e., SLD, ASD, or no diagnostic label) is more likely to be recommended for a referral for a special education evaluation? And, what are the reasons or rationale for this recommended referral?

A specific hypothesis is difficult to formulate since no studies have yet to investigate the referral decisions of gifted individuals with ASD. Although, given that the presence of specific diagnostic labels can elicit more special education referrals (Della Toffalo & Pedersen, 2005) and more reported academic difficulties and problem behaviors when students had a label (Allday et al., 2011; Foster et al., 1976; Ohan et al., 2011), it is anticipated that the students with either an SLD or ASD label will be more likely to be referred for a special education evaluation than the student with no diagnostic label.

Aim 4: To determine what type of student is more likely to be recommended for a referral for an evaluation for potential gifted programming and to describe the reasons or rationale for this referral decision.

4. What type of student (i.e., SLD, ASD, or no diagnostic label) is more likely to be recommended for a referral for an evaluation for potential gifted programming? And, what are the reasons or rationale for this recommended referral?

Given the prior literature investigating diagnostic labels, in which students with specific diagnostic labels were less likely to be referred for gifted education, it is hypothesized that the student with no diagnostic label will be more likely to be recommended for a referral for an evaluation for gifted programming (Bianco, 2005; Bianco & Leech, 2010; Minner 1990; Minner et al., 1987).

Aim 5: To determine whether a student with an SLD label, ASD label, or no diagnostic label is more likely to be referred for special education or gifted programming services and to explore the reasons and rationales for these decisions.

5a. Is a student with SLD more likely to be recommended for special education or gifted programming services? If a student with SLD is more likely to be recommended for special education or gifted programming, why is this the case?

5b. Is a student with ASD more likely to be recommended for special education or gifted programming services? If a student with ASD is more likely to be recommended for special education or gifted programming, why is this the case?

5c. Is a student with no diagnostic label more likely to be recommended for special education or gifted programming services? If a student with no diagnostic label is more likely to be recommended for special education or gifted programming, why is this the case?

No study has yet to compare the referral decisions for both special education and gifted programming services within a single study; therefore, it is difficult to anticipate how these diagnostic groups of students will compare. However, given that students with specific diagnostic labels are less likely to be referred for gifted education (Bianco & Leech, 2010; Minner, 1990; Minner et al., 1987) and that the presence of a diagnostic label does seem to influence overall reported difficulties, weaknesses, or negative behaviors or expectations (Allday et al., 2011; Foster et al., 1976; Ohan et al., 2011), it is anticipated that the students with SLD and ASD labels will be more likely to be referred for special education than gifted programming. It is also anticipated that the student with no diagnostic label will be more likely to be referred for special education than gifted education due to the descriptors in the vignette. Even though there are descriptions of both strengths and weaknesses, it is anticipated that participants as a whole will respond more strongly to the weaknesses or difficulties described, therefore indicating a need for a special education evaluation.

Chapter Two: Methodology

The purpose of this study was to investigate the recommended referral decisions of teachers (i.e., gifted education, general education, special education) and school psychologists for twice-exceptional students. The participants, research design, instrumentation, and procedures are described below.

Participants

Participants included teachers and schools psychologists ($N = 509$) who were teaching or practicing at a public school in the state of Kentucky during the 2013-2014 school year. All participants were over the age of 18, as required by the University of Kentucky Institutional Review Board. Teachers were also required to instruct students in one or more grades at the kindergarten to 5th grade level. Primary grades were specifically targeted since this is when students are first eligible for gifted identification and placement. There were no other exclusionary factors.

Eighty-eight school psychologists participated. According to the Kentucky Department of Education (KDE), during the 2014 fiscal year there were 120 school psychologists practicing in Kentucky schools, which means that 73.33% of school psychologists participated. Teachers were classified as general education teachers (Gen. teachers, $n = 313$), special education teachers (SpEd Teachers, $n = 95$), or gifted education teachers (G/T teachers, $n = 13$), based on the majority of students they reported teaching during a typical day. During the 2014 fiscal year, KDE reported there were 21,025 elementary school teachers. Specifically, there were 17,653 general education teachers, 2,868 special education teachers, and 110 gifted education teachers, although, it is unknown what criteria KDE used to classify these school psychologists and teachers.

According to this data, approximately 1.77% of Gen. teachers, 3.31% of SpEd teachers, and 11.82% of G/T teachers participated in the study. Teachers also had the option to type in a response for this question; several were reclassified into the three above categories based on these responses. For example, several participants were reclassified as Gen. teachers based on responses describing students in RtI or who were performing below grade level (e.g., "students at risk in reading; developing readers in RtI groups; struggling readers, students that score below 50% on standardized tests in reading"). Three teachers reported teaching all English Language Learners (ELL) and were reclassified as Gen. teachers. Three other participants were reclassified based on other responses provided, such as types of students taught during a typical day and current teaching certifications.

Teachers also reported all types of students they instructed during a typical day, since many teachers instruct students with varying needs. The majority of Gen. teachers (n = 181, 57.8%) reported teaching students with general education, special education, or gifted education needs, followed by 21.7% who only taught general education students (n = 68) and 16.6% who taught students with general education or special education needs (n = 52). The majority of SpEd teachers instructed students with special education needs (n = 69, 72.6%), followed by 18.9% who reported teaching students with general education or special education needs. The majority of G/T teachers taught students with general education, special education, or gifted education needs (n = 7, 53.8%), followed by 38.5% who only taught gifted students (n = 5) and 7.7% who taught students with general education or gifted education needs (n = 1).

Participants were primarily female; the gender of participants is presented in Table 1. Seven participants across categories chose not to answer or were missing data.

Table 1

Gender of Participants

Participants	Female		Male		Chose not to answer/Missing	
	n	%	*n*	%	*n*	%
Gen. Teachers	296	94.6	13	4.2	4	1.3
SpEd Teachers	90	94.7	5	5.3	0	0.0
G/T Teachers	11	84.6	2	15.4	0	0.0
School Psychologists	73	83.0	12	13.6	3	3.4

In regard to race and ethnicity, participants primarily identified as white alone, not Hispanic or Latino (*n* = 484, 95.1%). In all, the races and ethnicities of the participants were similar among participant groups (see Table 2).

Table 2

Races and Ethnicities of Participants

Participants	Black or African American alone, not Hispanic or Latino		Hispanic or Latino, regardless of race		White alone, not Hispanic or Latino		White alone, includes Hispanic or Latino		Two or more races/ethnicities		Chose not to answer	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	2	0.6	1	0.3	299	95.5	6	1.9	1	0.3	4	1.3
SpEd Teachers	1	1.1	0	0.0	91	95.8	2	2.1	0	0.0	1	1.1
G/T Teachers	0	0.0	0	0.0	12	92.3	1	7.7	0	0.0	0	0.0
School Psychologists	2	2.3	0	0.0	82	93.2	0	0.0	0	0.0	4	4.5

While the majority of teachers had a master's degree, the majority of school psychologists had a specialist degree. This is not atypical due to differences in entry-level job requirements (see www.nasponline.org/certification/state_info_list.aspx and https://www.teach.org/teaching-certification). The highest educational degree obtained across participant categories is displayed in Table 3.

Table 3

Highest Educational Degree Obtained Across Participant Groups

Participants	Bachelor's		Master's		Specialist		Professional		Doctoral		Chose not to Answer/ Missing	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	32	10.2	212	67.7	34	10.9	31	9.9	2	0.6	2	0.6
SpEd Teachers	7	7.4	67	70.5	17	17.9	4	4.2	0	0.0	0	0.0
G/T Teachers	0	0.0	8	61.5	4	30.8	0	0.0	1	7.7	0	0.0
School Psychologists	0	0.0	15	17.0	57	64.8	1	1.1	12	13.6	3	3.4

Many teachers across participant categories also held more than one certification. The majority of Gen. teachers (*n* = 282) were certified in Elementary School (Primary through grade 5), followed by 35 who were certified in Middle School (grades 5 through 9) and 20 who were certified in Interdisciplinary Early Childhood Education. Some also had certification in teaching Exceptional children (*n* = 28), and 14 had a Gifted Education endorsement. A large group (*n* = 53) held other certifications, including: educational leadership, counseling, English as a second language, literacy specialists/reading, library media specialists, and instructional technology, among others.

Many SpEd teachers also had multiple certifications, the majority (*n* = 81) of which were certified to teach exceptional children, followed by 50 who were certified to

teach Elementary School grades. Twelve were certified in Elementary/Middle/Secondary School. Specializations for teaching exceptional children included: learning and behavior disorders, communication disorders, moderate and severe disabilities, hearing impaired, and visually impaired.

The majority of G/T teachers (n = 10) were certified to teach Elementary School grades. Again, several G/T teachers had multiple certifications, including four who were certified in middle school grades. Six G/T teachers also had a gifted education endorsement to their certification.

Furthermore, Gen. teachers reported an average of 14.2 years of experience teaching with a range of 1 to 44 years. SpEd teachers reported an average of 13.1 years of experience teaching with a range of 1 to 40 years, and G/T teachers reported an average of 14.4 years of experience teaching with a range of 5 to 28 years. The school psychologists reported an average of 12.3 years in practice with a range of 1 to 42 years. In all, the teachers and school psychologists reported similar overall mean years of experience teaching or in practice. Six school psychologists (6.8%) also reported practicing in another setting, the majority of whom worked in a private practice setting (n = 4).

Research Design

This study was explanatory in nature. Even though there is limited research in the area of twice-exceptionality as a whole, an important part of this study was that it not only targeted referral recommendations for these students, but also the explanations provided by school personnel for these decisions. This, in turn, can potentially clarify what factors might influence the referral decisions and recommendations for twice-

exceptional students. An analogue methodology was utilized in order to investigate the referral decisions and recommendations of different types of teachers and school psychologists for twice-exceptional students.

Instrumentation

Similar to previous studies in the area of clinical judgment and bias, vignettes (see *Appendix A)* and accompanying questions (see *Appendices B and C)* were developed as part of this study. Three vignettes were used, one of which was a control vignette. The control vignette was essential in order to make comparisons to the variable of interest—that is, the diagnostic label. The control vignette served as a baseline for comparison and interpretation of the data (Lanza & Carifio, 1990). The other two vignettes differed only in the diagnostic label used: ASD or SLD in reading. The number and type of participants in each vignette condition are presented in Table 4.

Table 4

Participant Randomization Per Vignette Condition

Participants	Control		SLD		ASD		Total	
	n	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	115	36.7	98	31.3	100	31.9	**313**	100
SpEd Teachers	35	36.8	21	22.1	39	41.1	**95**	100
G/T Teachers	2	15.4	4	30.8	7	53.8	**13**	100
School Psychologists	35	39.8	24	27.3	29	33.0	**88**	100
Total	**187**	**36.7**	**147**	**28.9**	**175**	**34.4**	**509**	100

An Internet survey was utilized and hosted by Qualtrics. To the best of the researcher's knowledge, this is the first study to investigate the referral decisions of teachers and school psychologists for twice-exceptional students via an Internet survey.

Previous studies most commonly utilized mail or in-person surveys. An Internet method for dissemination was chosen for two reasons: 1.) An electronic survey allowed for faster and less expensive dissemination and data collection and 2.) An electronic survey allowed the researcher to reach a wider and potentially more representative sample from across the state of Kentucky.

The vignette condition was randomized using Qualtrics features, which is why there were slightly different numbers of participants in each vignette condition. Participants only read one of the vignettes. Then, participants responded to questions regarding the recommended referral decisions for that student. Previous studies primarily targeted either special education or gifted education referral or placement decisions instead of both within the same study (e.g., Bianco & Leech, 2010; Della Toffalo & Pedersen, 2005; Huebner, 1990; Minner, 1990). These questions were also randomly presented in order to decrease potential order bias. Furthermore, unlike the literature in this area, which primarily used Likert-type ratings (e.g., Bianco & Leech, 2010; Della Toffalo & Pedersen, 2005; Huebner, 1990; Minner, 1990), these questions had dichotomous response options to make it more similar to real-world practice. Participants were also asked for a brief explanation for their decision. The vignette remained displayed while the participants responded to these questions. The data from the open-ended questions provided information about the most common rationales for referral decisions for these students. Last, participants responded to demographic questions and some Likert-type questions about their familiarity and experiences with twice-exceptional students.

Development of survey and vignette. The content of the vignettes was developed and based on previous research on the characteristics and needs of twice-exceptional individuals (Assouline et al., 2009; Baum, Cooper, & Neu, 2001; Baum & Owen, 1988; Cash, 1999; Hughes, 2011; Little, 2002; Neihart, 2000; Reis et al., 1997; Vespi & Yewchuk, 1992; Waldron et al., 1987). Specific variables were purposefully eliminated from the vignette in order to isolate the variable of interest. For this reason, the hypothetical child's gender, ethnicity, SES, and IQ were not included in the vignette. Doctoral committee members reviewed the vignettes to make revisions to ensure that each was representative of a twice-exceptional student with either ASD or an SLD in reading. In addition, a faculty member at University of Kentucky, whose expertise is in quantitative measurement and evaluation, reviewed the survey questions and provided feedback. The vignettes and survey questions were also piloted to obtain additional feedback on the measures.

Procedures

In order to obtain a comprehensive list of potential schools that met the inclusionary criteria, a list of all Kentucky public schools from the 2012-2013 school year with one of more grades from kindergarten to 5th grade was obtained from the KDE website (education.ky.gov). Schools across the entire state of Kentucky were targeted since every Kentucky public school uses the same definition of giftedness and is required to identify gifted students and provide appropriate services. A list of 756 schools was created based on the KDE website.

In order to recruit teachers across the state of Kentucky, the principal of record for each school was first contacted via email; the email addresses of principals are available

to the public through their representative school websites and the KDE website. A total of 736 principals were contacted; twenty were undeliverable. Principals were provided with a brief description of the study and were also invited to participate by disseminating the link to the Internet survey to their teachers (see *Appendix D*). Principals were also asked to respond to the researcher to indicate whether they chose to disseminate the survey. If the principal did not initially respond, follow-up reminder emails were sent 1-2 weeks after the initial email (see *Appendix E*). One hundred twenty three principals responded after the initial email and forwarded the survey to their teachers, and an additional 53 principals responded after a reminder email. With 176 total participating schools, this resulted in a participation rate of 23.9%. An additional 11 principals declined participation after the initial email, and 18 more principals declined participation after the follow-up email. A total of 205 principals responded, resulting in an overall response rate of 27.9%.

Similar procedures were used to recruit school psychologist participants. First, the regional representatives of the Kentucky Association for Psychology in the Schools (KAPS) were contacted and asked to disseminate the link for the survey to the school psychologists in their representative regions (see *Appendix F*). Follow-up reminder emails were sent 1-2 weeks after the initial email if the regional representative did not initially respond (see *Appendix G*). All eleven KAPS regional representatives were contacted; seven responded after the initial email, and one additional representative responded after a follow-up email to indicate that they forwarded the survey. Three representatives did not respond, although, the president of KAPS requested that all regional representatives send the invitation for the survey to the school psychologists in

their representative regions. In all, 72.7% of KAPS representatives forwarded the survey to school psychologists in their region.

In addition, special education directors for each Kentucky school district were contacted and asked to disseminate the link for the survey to the school psychologist(s) in their district (see *Appendix H*). A list of special education directors was compiled from the Special Education Service Region websites, each of which lists the district members and director contacts. If more than one contact was listed, then both were contacted. This resulted in a list of 170 districts; six districts were not members of a service region and were not contacted. Follow-up reminder emails were sent 1-2 weeks after the initial email if the special education director did not initially respond (see *Appendix I*). One hundred sixty seven special education directors were contacted, of which 54 forwarded the survey after the initial email, and 14 forwarded the survey after the follow-up email. Thirteen special education directors declined participation after the initial email, and 9 more declined after the follow-up email. A total of 77 special education directors did not reply, and five contacts were undeliverable. This resulted in an overall participation rate of 40.7% and a total response rate of 53.9%.

For all participants, the overall response rate was 33.2%, and there was an overall participation rate of 27.6%. These were slightly higher rates than other recent studies that also utilized Internet surveys related to this topic, with response rates near 15% (Foley Nicpon et al., 2013; Robertson et al., 2011).

Last, it was expected that participation in the study would take approximately 15 minutes for both teachers and school psychologists, which was based on pilot study observations. Upon completion of reading the vignette and responding to survey and

demographic questions, participants also had the option to enter into a drawing for a gift card for their participation, which served as an incentive to increase the response rate. Four gift cards worth $30 were given to random recipients.

Chapter Three: Results

Data were collected via Qualtrics and then extracted to IBM SPSS for organization, coding, and analyses. An overview of the data analyses is provided in Table 5. This displays the various analyses for each research question and how the participants, vignette conditions, and referral recommendation decisions for special education and gifted programming evaluations were compared.

Table 5

Overview of Research Questions and Data Analyses

	SLD		ASD		No Label		*Overall*	
Participants	Sp. Ed.	Gifted	Sp. Ed.	Gifted	Sp. Ed.	Gifted	Sp. Ed.	Gifted
Gen. Teachers	Q1b	Q2b	Q1c	Q2c	Q1d	Q2d	Q1a	Q2a
SpEd Teachers	Q1b	Q2b	Q1c	Q2c	Q1d	Q2d	Q1a	Q2a
G/T Teachers	Q1b	Q2b	Q1c	Q2c	Q1d	Q2d	Q1a	Q2a
School Psychologists	Q1b	Q2b	Q1c	Q2c	Q1d	Q2d	Q1a	Q2a
Overall	Q3	Q4	Q3	Q4	Q3	Q4		
	Q5a	Q5a	Q5b	Q5b	Q5c	Q5c		

While 960 teacher surveys were activated in Qualtrics, 400 were removed because even though they were activated, participants did not respond to any of the survey questions. An additional 139 participants were removed from the dataset for two primary reasons. First, in order to verify that teachers taught one or more grades at the Kindergarten to 5th grade level, teachers were asked to report which grade(s) they currently taught; if the participant did not respond to this question or if this could not be verified based on their responses to what teaching certifications they currently held, then

they were removed from the dataset. Second, participants were removed if they took the survey even though they did not meet inclusionary criteria; for example, principals, speech-language pathologists, school guidance counselors, teachers who instructed in other grades or subject areas, and librarians, to name of few, were excluded from analyses. This resulted in a final dataset of 421 teachers.

Similarly, 125 school psychologists activated the survey in Qualtrics, but forty participants were removed because they activated the survey but did not answer any questions. One additional participant was not included in analyses because the participant did not respond to any of the referral recommendation questions based on the vignette; the participant only responded to the demographic questions and questions related to familiarity and experience with twice-exceptional students. While this left 84 school psychologists in the dataset, an additional four school psychologists were transferred to this dataset for analyses due to their responses to the demographic items that fit with school psychologist qualifications. These participants responded to the teacher survey, and the majority of responses could be transferred since they were worded the same in both surveys. This resulted in a final dataset of 88 school psychologists.

Potential confounds were explored prior to analyses. The following variables were explored but were not significant predictors or did not result in significant differences pertaining to the research questions: gender; whether the school currently utilized RtI to identify students; whether the school directly provided gifted and talented services; years of experience teaching or in practice; highest educational degree obtained; familiarity with students who are gifted and also have ASD or SLD; familiarity with twice-exceptional students; experience with students who are gifted and also have ASD;

and experience with twice-exceptional students. Experience with students who are gifted and have SLD was a significant predictor, but only for one research question (2b). In addition, there were no differences noted for participants who taught third grade students in comparison to those who did not teach third grade. This variable was specifically investigated since the vignette described a third grade student.

Aim 1

1a. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation?

Since few G/T teachers (n = 13) responded to the survey, they were removed from the general analyses for all sub-questions within research question 1, but were included among descriptive data. Overall, the majority of participants across vignette conditions recommended a special education referral for an evaluation (n = 310, 60.9%), while 37.7% (n = 192) did not recommend a special education referral. Seven (1.4%) participants did not respond to this question. Participants' decisions for a special education referral for an evaluation are shown in Table 6. While participants as a whole were more likely to recommend a referral for a special education evaluation, special education teachers had the greatest percentage of participants who recommended a referral for an evaluation.

In addition, dependent means t-tests were used to determine whether each participant group was more likely to recommend or not recommend a referral for a special education evaluation. On average, Gen. teachers recommended a referral for an evaluation for special education (M = .57, SE = .03) significantly more than not

recommending a referral (M = .43, SE = .03), $t(307) = 2.65$, $p < .05$, r = .15. SpEd teachers also recommended a referral for an evaluation for special education (M = .77, SE = .04) significantly more than not recommending a referral (M = .23, SE = .04), $t(94) = 6.17$, $p < .05$, r = .54. Last, school psychologists recommended a referral for an evaluation for special education (M = .62, SE = .05) significantly more than not recommending a referral (M = .38, SE = .05), $t(85) = 2.21$, $p < .05$, r = .23. In all, Gen. teachers, SpEd teachers, and school psychologists were all significantly more likely to recommend special education referrals, regardless of diagnostic label. Significant differences were not found among G/T teachers, $t(12) = 0.27$, $p > .05$.

Table 6

Overall Special Education Evaluation Referral Decisions

Participants	No		Yes		Did not respond		Total	
	n	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	131	41.9	177	56.5	5	1.6	313	100
SpEd Teachers	22	23.2	73	76.8	0	0.0	95	100
G/T Teachers	6	46.2	7	53.8	0	0.0	13	100
School Psychologists	33	37.5	53	60.2	2	2.3	88	100
Total	192	37.7	310	60.9	7	1.4	509	100

In order to compare groups, differences were determined with a one-way independent analysis of variance (ANOVA). Significant differences were found between participant groups on the recommendation decision to make a referral for an evaluation for special education services, regardless of vignette condition, $F(2, 486) = 5.89$, $p < .05$, w = .14. Games-Howell post hoc tests were used to determine specific group differences since the sample sizes varied and because this procedure does not assume equal

population variances. Post hoc tests revealed that SpEd teachers (M = .77, SE = .04) made significantly more recommendations for a referral for an evaluation for special education than Gen. teachers (M = .57, SE = .03), regardless of vignette condition.

1b. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation for the student with an SLD label?

Overall, the majority of participants recommended a referral for a special education evaluation for the student with the SLD label. SpEd teachers had the greatest percentage of participants make this recommendation, while school psychologists had the smallest, albeit still a majority, percentage who recommended the special education referral for the student with the SLD label as shown in Table 7. Dependent means t-tests were used to determine whether each participant group were more likely to recommend or not recommend a referral for a special education evaluation for the student with an SLD. On average, Gen. teachers recommended a referral for an evaluation for special education (M = .61, SE = .05) significantly more than not recommending a referral (M = .39, SE = .05), $t(95) = 2.30$, $p < .05$, r = .23. SpEd Teachers also recommended a referral for an evaluation for special education (M = .81, SE = .09) significantly more than not recommending a referral (M = .19, SE = .09), $t(20) = 3.53$, $p < .05$, r = .62. Last, while school psychologists recommended a referral for an evaluation for special education more than not recommending a referral, this difference was not significant, $t(21) = .85$, $p > .05$. This analysis was not conducted with G/T teachers due to the small sample size.

Table 7

Special Education Evaluation Referral Decisions for the Student with SLD

Participants	No		Yes		Did not respond		Total	
	n	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	37	37.8	59	60.2	2	2.0	98	100
SpEd Teachers	4	19.0	17	81.0	0	0.0	21	100
G/T Teachers	1	25.0	3	75.0	0	0.0	4	100
School Psychologists	9	37.5	13	54.2	2	8.3	24	100
Total	51	34.7	92	62.6	4	2.7	147	100

Furthermore, an ANOVA revealed no significant differences between Gen. teachers, SpEd teachers and school psychologists in regard to referral recommendations for an evaluation for special education services for the student with the SLD label, $F(2, 136) = 1.56$, $p > .05$. The power was also limited due to a small effect size.

1c. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation for the student with an ASD label?

In all, the majority of participants recommended a referral for an evaluation for special education services for the student with the ASD label. SpEd teachers reported the largest percentage of participants who recommended a referral. While the majority of the Gen. teachers and school psychologist participants recommended a referral for an evaluation for special education services, the majority of G/T teachers did not recommend a referral for an evaluation for special education services. See Table 8 below.

Dependent means *t*-tests were used to determine whether each participant group was more likely to recommend or not recommend a referral for a special education evaluation for the student with ASD. On average, Gen. teachers recommended a referral

for an evaluation for special education (M = .63, SE = .05) significantly more than not recommending a referral (M = .37, SE = .05), $t(98) = 2.58$, $p < .05$, $r = .25$. SpEd Teachers also recommended a referral for an evaluation for special education (M = .82, SE = .06) significantly more than not recommending a referral (M = .18, SE = .06), $t(38) = 5.15$, $p < .05$, $r = .64$. In contrast, G/T teachers did not recommend a referral for special education more than recommending a referral; however, this difference was not significant, $t(6) = -.35$, $p > .05$. Last, school psychologists did make more recommendations for a referral for a special education evaluation than not recommending a referral; however, this difference was not significant, $t(28) = 1.73$, $p > .05$.

Table 8

Special Education Evaluation Referral Decisions for the Student with ASD

Participants	No		Yes		Did not respond		Total	
	n	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	37	37.0	62	62.0	1	1.0	100	100
SpEd Teachers	7	17.9	32	82.1	0	0.0	39	100
G/T Teachers	4	57.1	3	42.9	0	0.0	7	100
School Psychologists	10	34.5	19	65.5	0	0.0	29	100
Total	58	33.1	116	66.3	1	0.6	175	100

Furthermore, an ANOVA revealed no significant differences between Gen. teachers, SpEd teachers and school psychologists in regard to referral recommendations for an evaluation for special education services for the student with the ASD label, $F(2, 164) = 2.48$, $p > .05$. Furthermore, the power was limited due to a small effect size.

1d. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for a special education evaluation for the student with no diagnostic label?

While the majority of participants as a whole recommended a referral for an evaluation for special education services for the student with no diagnostic label, Gen. teachers and G/T teachers responded similarly with close to half or half of the participants either recommending or not recommending a referral for an evaluation. See Table 9 below.

In addition, dependent means *t*-tests were used to determine whether each participant group was more likely to recommend or not recommend a referral for a special education evaluation for the student with no diagnostic label. On average, SpEd teachers were the only group to recommend a referral for an evaluation for special education ($M = .69$, $SE = .08$) significantly more than not recommending a referral ($M = .31$, $SE = .08$), $t(34) = 2.33$, $p < .05$, $r = .37$. While Gen. teachers and school psychologists both made more recommendations for a referral for an evaluation for special education than not recommending a referral, these differences were not significant at $t(112) = -.09$, $p > .05$ and $t(34) = 1.19$, $p > .05$, respectively. Analysis was not conducted on G/T teachers due to a small sample size.

Table 9

Special Education Evaluation Referral Decisions for the Student with No Diagnostic Label

Participants	No		Yes		Did not respond		Total	
	n	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	57	49.6	58	50.4	2	1.7	115	100
SpEd Teachers	11	31.4	24	68.6	0	0.0	35	100
G/T Teachers	1	50.0	1	50.0	0	0.0	2	100
School Psychologists	14	40.0	21	60.0	0	0.0	35	100
Total	83	44.4	102	54.5	2	1.1	187	100

An ANOVA revealed no significant differences between Gen. teachers, SpEd teachers and school psychologists in regard to referral recommendations for an evaluation for special education services for the student with no diagnostic label, $F(2, 180) = 2.17$, $p > .05$. The power was also limited due to a small effect size.

Aim 2

2a. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming?

Since few G/T teachers ($n = 13$) responded to the survey, they were removed from the general analyses for all sub-questions within research question 2, but were included among descriptive data. Overall, participants responded similarly to either recommending a referral for a gifted programming evaluation ($n = 250$, 49.1%) or not recommending a referral for an evaluation ($n = 252$, 49.5%). Seven participants (1.4%) chose not to respond. However, some differences were noted within each participant category, as shown in Table 10. Dependent means *t*-tests were used to determine whether each

participant group was more likely to recommend or not recommend a referral for an evaluation for gifted programming services. On average, G/T teachers made significantly more recommendations for a gifted programming evaluation (M = .77, SE = .12) than not recommending a referral for an evaluation (M = .23, SE = .12), $t(12) = 2.21$, $p < .05$, r = .54. On the other hand, school psychologists made significantly fewer referrals for a gifted programming evaluation (M = .35, SE = .05) than referrals for an evaluation (M = .65, SE = .05), $t(82) = -2.86$, $p < .05$, r = .30. While Gen. teachers made more recommendations for a referral for a gifted programming evaluation, SpEd teachers made more recommendations to not refer; however, neither of these differences were significant at $t(310) = 1.08$, $p > .05$ and $t(94) = -0.31$, $p > .05$, respectively.

Table 10

Overall Gifted Programming Evaluation Referral Decisions

Participants	No		Yes		Did not respond		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Gen. Teachers	146	46.6	165	52.7	2	0.6	313	100
SpEd Teachers	49	51.6	46	48.4	0	0.0	95	100
G/T Teachers	3	23.1	10	76.9	0	0.0	13	100
School Psychologists	54	61.4	29	33.0	5	5.7	88	100
Total	252	49.5	250	49.1	7	1.4	509	100

Furthermore, an ANOVA revealed significant differences between participant groups on the recommendation decision to make a referral for an evaluation for gifted programming, regardless of vignette condition, $F(2, 486) = 4.36$, $p < .05$, w = .12. Specifically, post hoc tests revealed that Gen. teachers (M = .53, SD = .03) made significantly more recommendations for a referral for an evaluation for gifted

programming than school psychologists (M = .35, SD = .05), regardless of vignette condition.

2b. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming for the student with an SLD label?

While overall totals indicated that participants were more likely to not recommend a referral for an evaluation for gifted programming, responses varied between participant groups (see Table 11). Gen. teachers reported similar responses for either referring or not referring for a gifted programming evaluation. SpEd teachers and school psychologists responded similarly; the majority in each group did not recommend a referral for an evaluation. On the other hand, all the G/T teachers in this vignette condition recommended a referral for an evaluation for gifted programming. Dependent means t-tests were used to determine whether each participant group were more likely to recommend or not recommend a referral for a gifted programming evaluation for the student with SLD. The only group with a clear majority to recommend referrals for a gifted programming evaluation were G/T teachers; however, further analysis could not be conducted since there were few participants and they all responded in the same manner. While Gen. teachers reported a slight majority for recommending referrals for gifted programming evaluations, the difference was not significant, $t(96) = 0.10$, $p > .05$. On the other hand, school psychologists reported significantly more recommendations to not refer the student with SLD for a gifted programming evaluation (M = .78, SE = .09) compared to those who did recommend a referral for an evaluation (M = .22, SE = .09), $t(22) = -3.21$, $p < .05$, r = .57. Last, while SpEd teachers made more recommendations to

not refer the student with SLD compared to referring the student, this difference was not significant, $t(20) = -1.58$, $p > .05$.

Table 11

Gifted Programming Evaluation Referral Decisions for the Student with SLD

Participants	No		Yes		Did not respond		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Gen. Teachers	48	49.0	49	50.0	1	1.0	98	100
SpEd Teachers	14	66.7	7	33.3	0	0.0	21	100
G/T Teachers	0	0.0	4	100	0	0.0	4	100
School Psychologists	18	75.0	5	20.8	1	4.2	24	100
Total	80	54.4	65	44.2	2	1.4	147	100

It was also found that the covariate, experience working with students who are gifted and have an SLD, was significantly related to the recommendation decision to make a referral for an evaluation for gifted programming for the student with an SLD label, $F(1, 137) = 8.58$, $p < .05$, $r = .24$. There was also a significant effect of the type of participant on the recommendation decisions for an evaluation for gifted programming for the student with an SLD label after controlling for the effect of experience working with students who are gifted and have an SLD, $F(2, 137) = 4.19$, $p < .05$, *partial* $\eta^2 = .06$. Post hoc tests revealed that Gen. teachers ($M = .51$, $SE = .05$) made significantly more recommendations for a referral for an evaluation for gifted programming than school psychologists ($M = .22$, $SE = .10$) for the student with the SLD label.

2c. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a

referral for an evaluation for potential gifted programming for the student with an ASD label?

Overall, the majority of participants recommended a referral for an evaluation for gifted programming for the student with the ASD label (see Table 12). While the majority of Gen. teachers, SpEd teachers, and G/T teachers were in support of a recommendation for a referral for an evaluation, the majority of school psychologists did not recommend a referral for an evaluation for gifted programming for the student with the ASD label. Dependent means *t*-tests were used to determine whether each participant group was more likely to recommend or not recommend a referral for the student with ASD for a gifted programming evaluation. No significant differences were found for any of the participant groups. This included Gen. teachers, $t(98) = 1.52$, $p > .05$; SpEd teachers, $t(38) = 1.46$, $p > .05$; G/T teachers, $t(6) = 0.35$, $p > .05$; and school psychologists, $t(28) = -0.93$, $p > .05$.

Table 12

Gifted Programming Evaluation Referral Decisions for the Student with ASD

Participants	No		Yes		Did not respond		Total	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Gen. Teachers	42	42.0	57	57.0	1	1.0	100	100
SpEd Teachers	15	38.5	24	61.5	0	0.0	39	100
G/T Teachers	3	42.9	4	57.1	0	0.0	7	100
School Psychologists	17	58.6	12	41.4	0	0.0	29	100
Total	77	44.0	97	55.4	1	0.6	175	100

An ANOVA revealed no significant differences between Gen. teachers, SpEd teachers and school psychologists in regard to referral recommendations for an evaluation

for gifted programming for the student with the ASD label, $F(2, 164) = 1.55$, $p > .05$. The power was also limited due to a small effect size.

2d. Who (i.e., general education teachers, special education teachers, gifted education teachers, or school psychologists) are more likely to recommend a referral for an evaluation for potential gifted programming for the student with no diagnostic label?

As a whole, participants responded similarly in regard to recommending or not recommending a referral for an evaluation for gifted programming for the student with no diagnostic label, although, group differences were evident (see Table 13). The majority of SpEd teachers and school psychologists did not recommend a referral, while a slight majority of Gen. teachers did recommend a referral. All G/T teachers recommended a referral for gifted programming. Dependent means *t*-tests were used to determine whether each participant group was more likely to recommend or not recommend a referral for a gifted programming evaluation for the student with no diagnostic label. No significant differences were found for any of the participant groups. This included Gen. teachers, $t(114) = 0.28$, $p > .05$; SpEd teachers, $t(34) = -.84$, $p > .05$; and school psychologists, $t(30) = -1.27$, $p > .05$. Analysis was not completed on the G/T teachers due to a small sample size.

Table 13

Gifted Programming Evaluation Referral Decisions for the Student with No Diagnostic Label

Participants	No		Yes		Did not respond		Total	
	n	%	*n*	%	*n*	%	*n*	%
Gen. Teachers	56	48.7	59	51.3	0	0.0	115	100
SpEd Teachers	20	57.1	15	42.9	0	0.0	35	100
G/T Teachers	0	0.0	2	100	0	0.0	2	100
School Psychologists	19	54.3	12	34.3	4	11.4	35	100
Total	95	50.8	88	47.1	4	2.1	187	100

In addition, an ANOVA revealed no significant differences between Gen. teachers, SpEd teachers and school psychologists in regard to referral recommendations for an evaluation for gifted programming for the student with no diagnostic label, $F(2, 178) = 0.96$, $p > .05$. The power was also limited due to a small effect size.

Aim 3

3. What type of student (i.e., SLD, ASD, or no diagnostic label) is more likely to be recommended for a referral for a special education evaluation? And, what are the reasons or rationale for this recommended referral?

An ANOVA was used to determine whether there were significant differences between the vignette conditions as to whether a student with a specific diagnostic label or no label would be referred for an evaluation for special education (see Table 14). An ANOVA revealed no significant differences between the vignette conditions, $F(2, 499) = 2.82$, $p > .05$. A small effect size also limited overall power. Since there were no significant differences, the open-ended questions were not examined for this research question.

Table 14

Special Education Evaluation Referral Decisions by Vignette Condition

Vignette Condition	*n*	*M*	*SD*
SLD	143	.64	.48
ASD	174	.67	.47
No Label	185	.55	.50
Total	502	.62	.49

Note. There were 7 missing data that were not included in the analysis.

Aim 4

4. What type of student (i.e., SLD, ASD, or no diagnostic label) is more likely to be recommended for a referral for an evaluation for potential gifted programming? And, what are the reasons or rationale for this recommended referral?

An ANOVA was used to determine whether there were significant differences between the vignette conditions as to whether a student with a specific diagnostic label or no label would be referred for an evaluation for gifted programming (see Table 15). An ANOVA revealed no significant differences between the vignette conditions, $F(2, 499) = 2.06$, $p > .05$. The power was also limited due to a small effect size. Since there were no significant differences, the open-ended questions were not examined for this research question.

Table 15

Gifted Programming Evaluation Referral Decisions by Vignette Condition

Vignette Condition	*n*	*M*	*SD*
SLD	145	.45	.50
ASD	174	.56	.50
No Label	183	.48	.50
Total	502	.50	.50

Note. There were 7 missing data that were not included in the analysis.

Aim 5

5a. Is a student with an SLD more likely to be recommended for special education or gifted programming services? If a student with SLD is more likely to be recommended for special education or gifted programming, why is this the case?

A dependent means *t*-test was used to determine whether a student with an SLD was more likely to be recommended for a special education or gifted programming evaluation. On average, participants recommended a referral for an evaluation for special education ($M = .65$, $SE = .04$) significantly more than an evaluation for gifted programming ($M = .45$, $SE = .04$) for the student with an SLD label, $t(140) = -3.42$, $p < .05$, $r = .28$.

In addition, dependent means *t*-tests were used to determine whether a student with an SLD was more likely to be recommended for a special education or gifted programming evaluation per participant group. Table 16 shows these referral decisions. Analysis was not conducted with G/T teachers since there were too few participants in this group.

Table 16

Differences Between Special Education and Gifted Programming Referral Decisions for the Student with SLD

Participants	Special Education Referral	Gifted Programming Referral		
	M	*M*	*t*	*r*
Gen. Teachers	.61	.49	-1.69	.17
SpEd Teachers	.81	.33	-3.21*	.58
G/T Teachers	.75	1.00	--	--
School Psychologists	.60	.22	-2.36*	.47

Note. $*p < .05$.

The open-ended responses for all participants who recommended a referral for a special education evaluation ($n = 92$) were explored for corresponding categories that provided explanations for this recommendation decision. An inductive approach (Creswell, 1994) was used, and similar responses were organized together. The data were subcategorized as new data were examined and integrated (Glesne, 1999). This constant comparative method was utilized until the categories were completely saturated, or identified and explained in full (Creswell, 1998). There were three phases of data categorization, resulting in eleven overall categories. Four overall categories had multiple subcategories; in all, this resulted in 18 possible categories for a specific reason or rationale for the recommendation decision. The specific categories and subcategories are displayed and ranked according to frequency in response in Table 17. In all, the majority of participants ($n = 64$, 69.6%) provided more than one category in their open-ended responses, with an overall range of 1 to 6 categories within a single response. Nine participants did not provide explanations for their decision to make a referral.

The most frequent explanation given across participant categories for a referral for a special education evaluation was general social skills (e.g., social behavior concerns, social delay or deficit, has no social skills, difficulty with friendships, difficulty working and interacting with others). Verbatim examples are provided for each category or subcategory for further explanation. The next frequently reported reason for a referral for a special education evaluation was self-regulation of emotion (e.g., hard time moving on when things aren't right, easily angered, emotional instability, difficulty calming down).

The next two frequently reported subcategories were both in the overall category of academics. General academic performance (e.g., discrepancy between reading and math comprehension, inconsistent performance on classroom assignments, experiencing learning problems) was the third most frequently reported reason, followed by reading (e.g., below grade level in reading, problems with reading, severe delays in reading). Academic related reasons were followed by restricted interests and that testing would be beneficial. Restricted interests included responses, such as: fixated on specific topics, self-centered tendencies—only performing well on tasks of interest, obsessiveness, conversation restricted to his particular interests. Testing would be beneficial (e.g., has issues that might be identified through testing, an evaluation would give more specifics to L's abilities; testing would help the teacher find the problems L is dealing with, so she or he can find the best methods of teaching her; displays behaviors that need further assessment to rule out disabilities in these areas as well).

The next two frequently reported reasons for a referral for a special education evaluation were both in the specific disability concern category and were equally reported

as reasons. These included concerns specifically related to an SLD or ASD. Examples of responses for reasons related to an SLD included: possibility of a learning disorder in reading, possible discrepancy between potential and performance, and performing below grade level in reading even though he is very intelligent). Examples of responses for reasons related to ASD include: this could indicate spectrum concerns, could have a type of autism, and there is a possibility of ASD.

The three subcategories in the category—intervention or special education suggestions—were the next frequently reported reasons for a referral decision. The subcategory, try RtI or interventions first, included responses, such as: try regular classroom interventions first; if intervention had been provided, documented, and determined unsuccessful; and, if L. also did not show adequate progress on research based interventions. The next two subcategories were equally reported. Adverse effect on learning/not accessing the general education curriculum included responses, such as: may adversely impact their educational performance; documentation appears to be provided (or could be) for an adverse impact on educational performance; and, will most likely impede her ability to learn. In a separate category, but also equally reported as the previous two subcategories, classroom/vocation skills were reported (e.g., difficulty with transitions, struggles… in the classroom).

The last six categories and subcategories were not as frequently reported. Four responses identified a specific disability concern of ADHD (e.g., possible ADD issue, may be ADHD), followed by three responses that were specifically related to attention/focus (e.g., concerns about attention span). Reasons specifically related to communication (e.g., inability to communicate with others) and to the specific disability

of communication disorders (e.g., possible language disorder) were equally reported. Last, one person reported that this student might be disrupting the learning of other students (i.e., It keeps other students from learning because of the extra time the teacher must use to keep this child on track), and one person reported this child is gifted (i.e., exhibits some of the characteristics of a gifted student) and should therefore be referred for an evaluation for special education services.

Table 17

Frequencies and Percentages of Categorized Referral Decision Reasons for the Student with SLD

Category	**Subcategory**	**Frequency of Response**	**Percentage of Participants**
Social Skills	General Social Skills	43	46.7%
Self-regulation of emotion		29	31.5%
Academic	General Academic Performance	25	27.2%
Academic	Reading	23	25.0%
Restricted interests		20	21.7%
Testing would be beneficial		14	15.2%
Specific Disability Concern	SLD	13	14.1%
Specific Disability Concern	ASD	13	14.1%
Intervention or Special Education Suggestions	Try RtI or Interventions First	10	10.9%
Intervention or Special Education Suggestions	Adverse effect on learning/not accessing the general education curriculum	8	8.7%
Intervention or Special Education Suggestions	Needs Special Education environment/instruction/services	8	8.7%
Classroom/vocational skills		8	8.7%
Specific Disability Concern	ADHD	4	4.3%
Attention/focus		3	3.3%
Social Skills	Communication	2	2.2%
Specific Disability Concern	Communication disorder	2	2.2%
Disrupting other students		1	1.1%
Gifted		1	1.1%

5b. Is a student with ASD more likely to be recommended for special education or gifted programming services? If a student with ASD is more likely to be recommended for special education or gifted programming, why is this the case?

A dependent means *t*-test was used to determine whether a student with an ASD was more likely to be recommended for a special education or gifted programming evaluation. On average, participants recommended a referral for an evaluation for special education (M = .66, SE = .04) significantly more than an evaluation for gifted programming (M = .55, SE = .04) for the student with an ASD label, $t(172) = -2.39$, $p < .05$, $r = .18$.

In addition, dependent means *t*-tests were used to determine whether a student with ASD was more likely to be recommended for a special education or gifted programming evaluation per participant group. Table 18 shows these referral decisions.

Table 18

Differences Between Special Education and Gifted Programming Referral Decisions for the Student with ASD

	Special Education Referral	Gifted Programming Referral		
Participants	*M*	*M*	*t*	*r*
Gen. Teachers	.62	.57	-.80	.08
SpEd Teachers	.82	.62	-2.73*	.41
G/T Teachers	.43	.57	1.00	.38
School Psychologists	.66	.41	-1.89	.34

Note. *$p < .05$.

The open-ended responses for all participants who recommended a referral for a special education evaluation (n = 116) were explored for corresponding categories that

provided explanations for this recommendation decision. Again, an inductive approach (Creswell, 1994) was used, and similar responses were organized together. The data were subcategorized as new data were examined and integrated (Glesne, 1999). This constant comparative method was utilized until the categories were completely saturated, or identified and explained in full (Creswell, 1998). There were three rounds of data categorization, resulting in ten overall categories. Four overall categories had multiple subcategories; in all, this is resulted in fifteen possible categories for a specific reason or rationale for the recommendation decision. The specific categories and subcategories are displayed and ranked according to frequency in response in Table 19. In all, the majority of participants (n = 92, 79.3%) provided more than one category in their open-ended responses, with an overall range of 1 to 7 categories within a single response. Eight participants did not provide explanations for their decision to make a referral.

Across participant categories, the most frequent explanation given for a referral for a special education evaluation was general social skills (e.g., difficulty with social skills, could use direct social instruction, no peer friends and does not interact well with other children, struggles to make and maintain relationships with others). Verbatim examples of the categories and subcategories are provided for further explanation. The next two frequent types of responses were self-regulation of emotion and needs special education environment/instruction/services. The self-regulation of emotion included responses, such as: outbursts or periods of becoming upset, difficulty calming down, seems to not have their own set of coping skills, to deal with anger and frustration, emotional control deficits, handles criticism poorly, and impulsive calling out in class. The same number of responses was given for the subcategory of needs special education

environment/instruction/services. These responses included words or phrases that specifically identified the need of special education to benefit the student (e.g., may need a break or time out from the regular class room and an IEP can provide this, needs accommodations and modification in place, regular classroom teacher unfortunately does not have time to work individually with L, L could benefit from special education services, student would benefit from specially designed instruction).

The next two subcategories were both in the overall category of academics. Responses that specifically noted reading as a primary concern (e.g., struggle in the area of reading, below level performance in reading, difficult time in reading) were identified. This was followed by general academic performance. These responses included more general terms related to academic performance (e.g., achievement difference between reading and math**,** performance is unequal in subject areas**,** inconsistent classroom performance**,** academic difficulties).

The next most frequently cited reason for a referral for a special education evaluation was classroom/vocational skills. This category included descriptions of skills needed to be successful in the classroom, such as adaptive skills. Examples of responses included: inability to slow down and check, difficulty transitioning from one activity to another, complete assignments/tasks, difficulty following classroom procedures, vocational skills, study skills, and adaptive skills. This was followed by restricted interests, which included how the child's restricted interests seemed to impact his or her academic performance, as well as interactions and conversations with peers. Examples of responses included: poor performance in areas he is not interested in, only interested in certain topics, and focuses on very few subjects.

The next four categories were equally cited and in no specific order include: testing would be beneficial; try RtI or interventions first; adverse effect on learning/not accessing the general education curriculum; and ASD. Testing would be beneficial included responses, such as: Testing won't hurt. It will only provide more insight; an evaluation is needed in order to better determine the student's needs; and, not enough information to determine if the deficits are significant, but that is the purpose of the evaluation. Even though these participants did recommend a referral for a special education evaluation, some reported the need to try interventions first prior to the evaluation or to utilize intervention data as a part of the evaluation. Examples from participants included: RTI data would need to be collected for at least 6 weeks before any recommendation for any referral; if proper interventions have not proven successful in addressing L's needs; and, if the current interventions are not effective supports. Also equally reported was the mention of an adverse effect on learning or not accessing the general education curriculum. Examples included: interfering with her education; seems to not be able to access the curriculum; and, negative impact on his academic progress. The same number of participants made reference to a specific disability label, that is, ASD. Examples included: may be on the spectrum; may possibly relate to ASD; and, similar to students with ASD.

The last four categories included social skills, attention/focus, disrupting other students, and another specific disability concern. The specific social skills concern noted was communication, which included reasons, such as: communication deficits, and difficulty carrying on a two-way conversation. The last three categories had the same number of responses and are in no particular order. Some participants mentioned

concerns related specifically to attention/focus, such as: inability to focus, executive functioning deficits, and attention problems. Participants also mentioned the concern of this student disrupting the learning of other students or the classroom, including: causing some problems in the classroom [which] is disruptive; disrupts the learning of others; and, interrupting class. The last concern noted was a specific disability concern, SLD. Examples included: discrepancy between ability and performance; may have a reading disability; and, might qualify as having a learning disability.

Table 19

Frequencies and Percentages of Categorized Referral Decision Reasons for the Student with ASD

Category	**Subcategory**	**Frequency of Response**	**Percentage of Participants**
Social Skills	General Social Skills	60	51.7%
Self-regulation of emotion		33	28.4%
Intervention or Special Education Suggestions	Needs Special Education environment/instruction/services	33	28.4%
Academic	Reading	32	27.6%
Academic	General Academic Performance	27	23.3%
Classroom/vocational skills		21	18.1%
Restricted interests		19	16.4%
Testing would be beneficial		13	11.2%
Intervention or Special Education Suggestions	Try RtI or Interventions First	13	11.2%
Intervention or Special Education Suggestions	Adverse effect on learning/not accessing the general education curriculum	13	11.2%
Specific Disability Concern	ASD	13	11.2%
Social Skills	Communication	7	6.0%
Attention/focus		5	4.3%
Disrupting other students		5	4.3%
Specific Disability Concern	SLD	5	4.3%

5c. Is a student with no diagnostic label more likely to be recommended for special education or gifted programming services? If a student with no diagnostic

label is more likely to be recommended for special education or gifted programming, why is this the case?

A dependent means *t*-test was used to determine whether a student with no diagnostic label was more likely to be recommended for a special education or gifted programming evaluation. The dependent means *t*-test revealed no significant differences for the student with no diagnostic label between the referral recommendations for either special education or gifted programming, $t(180) = -1.35$, $p > .05$. Since the special education and gifted programming referral recommendations did not significantly differ for the student with no diagnostic label, the open-ended questions were not examined for further explanation.

Dependent means *t*-tests were also used to determine whether a student with no diagnostic label was more likely to be recommended for a special education or gifted programming evaluation per participant group. Table 20 shows these referral decisions. Analysis was not conducted with G/T teachers since there were too few participants in the group.

Table 20

Differences Between Special Education and Gifted Programming Referral Decisions for the Student with No Diagnostic Label

Participants	Special Education Referral *M*	Gifted Programming Referral *M*	*t*	*r*
Gen. Teachers	.50	.51	.27	.03
SpEd Teachers	.69	.43	-2.49*	.39
G/T Teachers	.50	1.00	--	--
School Psychologists	.58	.39	-2.26*	.38

Note. $*p < .05$.

Chapter Four: Discussion

An overview of this study is presented, followed by a discussion of the results. Limitations and implications are also discussed, as well as avenues for future research.

Overview of the Study

The current study built upon and expanded the previous literature on referral decisions for twice-exceptional students. The purpose of this study was to investigate the referral decisions of Gen. teachers, SpEd teachers, G/T teachers, and school psychologists for both special education and gifted programming evaluations. An analogue methodology was used with three vignette conditions that differed only in the presence of a diagnostic label. Participants read a vignette and then responded to questions targeting the participants' referral decisions for both special education and gifted programming evaluations. The primary aims of the study were to identify whether different referral sources influence the referral decisions for students, as well as to identify whether specific diagnostic labels might influence these referral decisions. Through open-ended questions, the reasons or rationales for these referral decisions were also investigated in order to provide more information about what factors might influence these important educational decisions.

Referrals for Special Education Evaluations

In all, Gen. teachers, SpEd teachers, and school psychologists were all significantly more likely to recommend a special education evaluation than to not recommend an evaluation, unlike G/T teachers in which significant differences were not found. Furthermore, SpEd teachers made significantly more recommendations for special education evaluations than Gen. teachers, regardless of the diagnostic label. It was

anticipated that SpEd teachers would be more likely to recommend referrals for special education; therefore, this hypothesis was confirmed.

Since these four types of participants have yet to be compared in a single study, these findings will need to be investigated further. While Gen. teachers, SpEd teachers, and school psychologists all made statistically significant more recommendations for special education evaluations as a whole, SpEd teachers consistently made the most across all three vignette conditions. This might be explained by their educational training and experiences as SpEd teachers in identifying areas of need and remediation. As such, this might have helped SpEd teachers recommend referrals for special education evaluations when appropriate. On the other hand, this might be explained by bias related to their specialized professional training, so that in general, SpEd teachers might be more likely to make referrals for special education than other referral sources. These findings cannot be generalized to all special education referral decisions, since it was based off of one student description; however, this does provide some evidence as to how these stakeholders might respond in evaluation decisions that subsequently might also affect a child's educational services and supports.

Furthermore, Gen. teachers made significantly more referral recommendations for special education evaluations for the students with diagnostic labels, but not for the student without a diagnostic label. While SpEd teachers might be more likely to make special education referrals as a whole, it is possible that diagnostic labels might have a stronger biasing effect on Gen. teachers in regard to special education evaluation referral decisions. In addition, even though the majority of school psychologists recommended referrals for special education evaluations across vignette conditions, these differences

were not statistically significant within each vignette condition. Compared to the other groups, the presence or lack of a diagnostic label did not seem to have the same biasing effect on school psychologists. In all, this means that when SpEd teachers, Gen. teachers and school psychologists work together on multidisciplinary teams, school psychologists might serve well as educators to other team members and evaluators in determining appropriate special education needs. Recognizing that students might be referred for a variety of reasons among different multidisciplinary team members is important to consider in how this might influence a perceived need for services. If this awareness of potential bias is not evident among referral team members, this might lead to a primary focus on remediation (Bianco et al., 2009; Nielsen & Mortorff-Albert, 1989) or even inappropriate placement decisions that in turn could be detrimental to the child's experiences at school.

Even though significant differences were not found for G/T teachers, it is possible that larger sample sizes for this group might result in different findings. When compared to the other participant groups, G/T teachers responded with more variation. While the majority of G/T teachers recommended a referral for the student with SLD, the majority of G/T teachers did not recommend a referral for the student with ASD. Equal numbers of G/T teachers made recommendations for and against referrals for the student with no diagnostic label. As previously stated, possible explanations for this finding are speculative due to small sample sizes.

Taken together, these findings are important to consider and how each might influence referral and evaluation decisions. Gen. teachers, SpEd teachers, and school psychologists in particular often work together on multidisciplinary teams to evaluate

children for special education eligibility and potential services. Understanding how the presence of diagnostic labels might affect each of these three groups is important because it might influence critical educational decisions for twice-exceptional students who might benefit from these services. It is also important to note that these results might be explained by variables not investigated in the current study, such as self-efficacy (Podell & Soodak, 1993) or personal reactions to the vignettes (Ohan et al., 2011).

Furthermore, it was investigated whether the presence of a specific diagnostic label would influence decisions for special education evaluation referrals for that student. While it was hypothesized that students with diagnostic labels would be referred for special education evaluations more than the student with no diagnostic label, there were no statistically significant differences between the three vignette conditions. This is likely because all three students were recommended more for special education evaluations than not being recommended. Descriptively, participants all together were more likely to recommend an evaluation for special education for the two vignettes that included diagnostic labels. This difference was smaller for the student with no diagnostic label. These descriptive findings are consistent with previous research on the labeling bias for twice-exceptional students (Della Toffalo & Pedersen, 2005).

Specifically, the greatest percentages in favor of referring students for special education evaluations were reported for the student with ASD, followed by the student with SLD and then the student with no diagnostic label. While there was some variation in responses between participant groups, when grouped together this variation averaged out and resulted in similar overall referral recommendations for evaluations for special education. This demonstrates the importance of investigating the referral source. Without

investigating specific participant group responses, it would appear like the majority of participants recommended referrals for an evaluation for special education for all three students. Given that this finding was still found descriptively with this within group variation is important to consider. Furthermore, since this was the first study to investigate the referral decisions of gifted students with ASD, this provides important preliminary information regarding how the special education referral decisions for gifted students with ASD and SLD might compare.

Referrals for Gifted Programming Evaluations

In contrast to the special education evaluation referral decisions, there was more variation in responses for the gifted programming referral decisions. In all, Gen. teachers and SpEd teachers responded similarly; however, a slight majority of Gen. teachers recommended referrals for an evaluation for gifted programming, while a slight majority of SpEd teachers did not recommend referrals. Since nearly half of each group responded in favor of or against gifted programming evaluation referrals across vignette conditions, significant differences were not found. School psychologists made significantly more recommendations to not refer students for an evaluation for gifted programming. In contrast, G/T teachers made significantly more recommendations for referrals for an evaluation for gifted programming. Furthermore, when comparing Gen. teachers, SpEd teachers and school psychologists, Gen. teachers made significantly more referrals for evaluations for gifted programming than school psychologists, across vignette conditions. These results are consistent with and expand the findings of Bianco and Leech's (2010) study, even though school psychologists were not included in that study. The three groups of teachers rank similarly as they did in Bianco and Leech (2010) in their overall

gifted evaluation referrals, with G/T teachers making the most referrals, followed by Gen. teachers and then SpEd teachers. The current findings expand this previous research with the addition of school psychologists, who made the fewest referrals overall.

Just as SpEd teachers had the greatest reported percentages in favor of special education evaluation referrals, G/T teachers had the greatest reported percentages in favor of gifted programming evaluations, which is consistent with previous research (Bianco & Leech, 2010). G/T teachers are more likely to have training within their area of expertise, and G/T teachers have also reported more knowledge of and experience with twice-exceptional students (Foley Nicpon et al., 2013); therefore, they may be better able to identify possible gifted programming needs for twice-exceptional students. In contrast, school psychologists have reported little to no training in giftedness (Robertson et al., 2011), which might negatively impact referral decisions for twice-exceptional students in particular. Many are also not involved in the gifted and talented identification processes in their schools, which might be an additional factor to consider (Robertson et al., 2011).

It was also investigated whether the type of student would affect referral recommendation decisions for gifted programming evaluations. While it was hypothesized that the student with no diagnostic label would be more likely to be referred for a gifted programming evaluation, this hypothesis was not confirmed. Similar to the findings in comparing the type of student and overall special education referral decisions, significant differences were not found. As previously discussed, there was some variation in response between participant groups; when grouped together, this variation averaged out and resulted in similar overall referral recommendations for evaluations for gifted programming across vignette conditions. This is difficult to compare to previous research

since the gifted programming referral decisions for gifted students with ASD have yet to be investigated, and previous studies investigated different diagnostic labels with different vignettes (Bianco & Leech, 2010; Minner, 1990; Minner et al., 1987). Even so, these findings demonstrate the importance of considering the referral source during the gifted programming referral process. Without considering the referral source, participants as a whole seemed to be split in regard to referral decisions for gifted programming. However, descriptively, the student with the ASD label was referred more frequently for a gifted programming evaluation, followed by the student with no diagnostic label and then the student with SLD. Furthermore, it is also important to note that while a slight majority of participants as a whole recommended a referral for gifted programming for the student with ASD, slight majorities of participants did not recommend referrals for the student with an SLD or for the student with no diagnostic label.

The variation in gifted programming referral recommendations for the type of student and the referral source highlights the importance of considering these two factors and how they might influence this important decision. From a descriptive standpoint, close to half of Gen. teachers made gifted programming referrals in each of the vignette conditions; therefore, there was a similar likelihood of Gen. teachers either recommending or not recommending students for gifted programming whether a diagnostic label was present or not. With increasing numbers of inclusive classrooms in public schools, Gen. teachers may particularly benefit from additional training not only in standards and competency areas previously associated with special education training programs (Dingle, Falvey, Givner, & Haager, 2004), but in gifted education content areas as well. This may be a critical group to target for professional development and

continuing education opportunities related to twice-exceptionality, since Gen. teachers are likely to teach un-identified twice-exceptional students.

On the other hand, SpEd teachers were more likely to recommend a referral for a gifted programming evaluation for the student with ASD but not for the student with SLD or the student with no diagnostic label. As previously mentioned, this might be related to heuristics utilized for this response, or drawn from personal experiences working with students with ASD. While Bianco and Leech (2010) found that special education teachers were less likely to refer students with disability labels for gifted placement when compared to Gen. teachers or G/T teachers, the results from the current study slightly differ; however, Bianco and Leech investigated different diagnostic labels that did not include ASD. This is interesting as a comparison in that SpEd teachers might respond differently to ASD in particular, or to different diagnostic labels as a whole.

Furthermore, the current study found that school psychologists made even fewer referral recommendations for gifted programming evaluations than SpEd teachers. The majority of school psychologists did not recommend referrals for gifted programming evaluations across vignette conditions, with the greatest percentage against referrals reported for the student with SLD. As previously stated, school psychologists receive little to no training in working with gifted populations and many do not work with them at all (Robertson et al., 2011). In the same study, they also reported little to no familiarity with twice-exceptional populations. Therefore, these referral decisions might be further explained by the training received by school psychologists, which is predominately focused on working with individuals with special education needs. Robertson et al. (2011) pointed out this discrepancy not only in the reported graduate training school

psychologists receive, but also a lack of specific mention of training related to gifted assessment, intervention, or consultation in NASP or APA standards. Given the important role school psychologists play on multidisciplinary teams, this might be the group that could benefit most from additional training, particularly during graduate school, that targets gifted and twice-exceptional populations.

As hypothesized, G/T teachers made the most overall referrals for gifted programming evaluations, with nearly 77% of G/T teachers in favor of referrals. This was similar to the findings in Bianco and Leech (2010) and might be explained by more knowledge and experience these teachers have with twice-exceptional individuals when compared to other referral sources (Foley Nicpon et al., 2013). All G/T teachers in the SLD vignette condition and the no diagnostic label vignette condition recommended referrals for gifted programming evaluations, while close to half recommended the same decision for the student with ASD. In the ASD vignette condition, SpEd teachers made slightly more referrals than G/T teachers; however, with a small sample size these descriptive findings cannot be generalized. Instead, it provides some preliminary findings that need to be further investigated. Indeed, larger sample sizes might reveal different findings.

Besides differences in knowledge of and experience with twice-exceptional students, stereotypic beliefs of gifted students (Carman, 2011) and biases might have influenced these referral decisions as well (Bianco, 2005; Bianco & Leech, 2010; Minner, 1990). Twice-exceptional students have an additional potential referral barrier in that commonly held beliefs toward students with disabilities contradict those who are gifted (Nielsen, 2002). Furthermore, the use of or reliance on these beliefs during decision-

making processes might have been primary factors related to overall referral decisions for gifted programming evaluations.

Diagnostic Labels and Referral Decisions

Student with SLD. Specific vignette conditions—that is, the presence of a diagnostic label—revealed additional conclusions. In regard to the student with the SLD label, there were no significant group differences among the teachers or school psychologists; however, this is evident because all the participant groups reported more recommendations for a special education referral than not recommending one. Gen. teachers, SpEd teachers, and school psychologists responded similarly and therefore group differences were not found. Furthermore, Gen. teachers and SpEd teachers reported significantly more recommendations for special education referrals. While the majority of school psychologists also recommended a referral for an evaluation for special education for the student with the SLD label, this difference was not statistically significant. The majority of G/T teachers also recommended a referral for an evaluation for special education; however, this must be considered with caution due to the small sample size. Even though all together the majority of participants recommended a referral for a special education evaluation for the student with SLD, nearly 35% did not. This is still a considerable portion of people who might have impeded this student from being evaluated and potentially receiving services. Considering that many gifted students with an SLD remain unidentified or are identified later in life, this is concerning when considering the risks associated with later identification, including: the potential impact of a lack of educational supports throughout primary schooling; increased frustration and a negative attitude toward school; lower self-efficacy; and the potential negative impact

on self-acceptance, self-advocacy, and self-determination (Dole, 2001; Ferri et al., 1997; Holliday et al., 1999; Reis et al., 1997).

In regard to gifted programming evaluation referrals for the student with the SLD label, Gen. teachers made significantly more referrals for an evaluation for gifted programming than school psychologists. This finding was significant, even after controlling for the effect of experience working with students who are gifted and have an SLD. In addition, there was considerable variation in the group responses for this gifted programming referral decision. Gen. teachers were nearly split in half in regard to this referral decision. The majority of SpEd teachers did not refer the student with an SLD label for an evaluation for gifted programming; however, this difference was not statistically significant. In addition, school psychologists made significantly more recommendations to not refer the student with SLD. In contrast, all of the G/T teachers in this vignette condition made the recommendation to refer the student with the SLD label for an evaluation for gifted programming services; however, there was a small sample size and further analysis could not be conducted with this group. It is possible that larger sample sizes might result in different findings.

Furthermore, it is important to consider that as a whole, over 54% of participants did not recommend a referral for an evaluation for gifted programming for the student with a suspected SLD. This is particularly concerning considering the associated risk for academic, social, and emotional issues at school and at home for these twice-exceptional individuals. It is possible that with the presence of the SLD label, as well as the descriptors that might have been interpreted as problem behaviors, that this resulted in fewer referrals for gifted programming. Negatively perceived classroom behaviors can

influence teacher bias and thus gifted nominations (Crim et al., 2008). With this group of twice-exceptional students, there is additional controversy as to whether students with SLDs can also be gifted, which might have been a factor in these referral recommendations as well.

The special education and gifted programming evaluation referral decisions were also compared. It was hypothesized that student with the SLD label would be referred for a special education evaluation more than a gifted programming evaluation, which was confirmed. Additional analyses revealed that SpEd teachers and school psychologists made significantly more referrals for an evaluation for special education than for gifted programming. While the majority of Gen. teachers also made more referrals for special education than gifted programming, this difference was not statistically significant. While further analysis was not conducted with G/T teachers due to the small sample size, all of the G/T teachers in this vignette condition recommended an evaluation for gifted programming, and the majority also recommended an evaluation for special education. In all, the majority of participants recommended a referral for special education for the student with SLD, while there was more variation among participant groups for the referral decision for gifted programming.

Data from the open-ended questions revealed that participants most frequently indicated a concern for this student's social skills, followed by a concern for self-regulation of emotion as primary reasons to refer this student for an evaluation for special education. These reasons were followed by academic-related concerns, including those specific to reading, as well as restricted interests. With a total of 18 categorized reasons for referral, these were the most frequently reported.

Interestingly, participants also reported four different specific disability concerns, including SLD, ASD, ADHD, and communication disorder as reasons to refer this student for a special education evaluation. For the vignette of the student with ASD, only one other disability—SLD—was mentioned as a possible reason. For the student with SLD, and with the range and number of disability concerns pre-referral, this might highlight the general misunderstanding or difficulty identifying these twice-exceptional students in particular. Even though these responses are dependent on the specific vignette used in this study, it might also be related to the lack of consensus in regard to identifying students with SLD for gifted programming, which might result in other diagnostic recommendations or considerations. In addition, while some participants suggested trying RtI, interventions, or the need for specific special education services, these were not as frequently reported. More participants reported that testing would be beneficial to further understand the student than specifically suggesting intervention or special education services.

Student with ASD. There were similar findings for the student with the ASD label in regard to special education evaluation referrals. No significant group differences were found, since the participant groups responded similarly overall. Also similar to the differences found with the SLD vignette condition, Gen. teachers and SpEd teachers both reported significantly more recommendations for a special education evaluation. In addition, the majority of school psychologists also recommended an evaluation for special education, but this difference was not statistically significant. In contrast, a slight majority of G/T teachers recommended not referring the student with the ASD label for an evaluation for special education; however, this difference was not statistically

significant. Due to the small sample size, it is possible that results might differ with a larger sample.

Compared to the other vignette conditions, the greatest percentage of participants recommended referrals for a special education evaluation for the student with ASD. This might represent a potential bias to recommend students with ASD for a special education evaluation, more so than students with other diagnostic labels or no label at all. Since no studies have yet to investigate the referral decisions of gifted students with ASD, this is an important first step toward learning more about the referral decisions for these twice-exceptional students. This is particularly important given the rise in prevalence of ASD over recent years (CDC, 2012). Even so, about 33% of the participants did not recommend an evaluation for special education for the student with ASD, which potentially excludes a student who might benefit from special education services.

There were also no group differences evident for the decision to refer the student with ASD for an evaluation for gifted programming, as well as less variation in the group responses. While the majority of Gen. teachers, SpEd teachers, and G/T teachers recommended a referral for an evaluation for gifted programming for the student with ASD, these within group differences were not significant. On the other hand, the majority of school psychologists did not recommend a referral for the student with ASD; this difference was also not statistically significant.

As previously stated, this study was an important first step toward learning more about the referral decisions for gifted students with ASD. While the majority of teachers recommended referrals, school psychologists did not. Compared to the identically described gifted student with SLD, more participants indicated the student with ASD

should be evaluated for gifted programming. This might be due to specific biases or stereotypes related to these specific diagnostic labels. Availability heuristics associated with gifted individuals with ASD might have been utilized as well. Even though the greatest overall percentage of participants recommended the student with ASD for a gifted programming evaluation, 44% of participants did not recommend a referral.

Furthermore, when comparing these referral decisions for the student with ASD, it was hypothesized that student with the ASD label would be referred for a special education evaluation more than a gifted programming evaluation, which was confirmed. Similar to the student with the SLD label, it was also found that the student with an ASD label was recommended for a referral for a special education evaluation significantly more than for a gifted programming evaluation. Further analyses revealed that even though Gen. teachers and school psychologists made more referrals for a special education evaluation than for gifted programming, these differences were not significant. It is important to note though that the majority of Gen. teachers recommended that the student with ASD be evaluated for both special education and gifted programming. On the other hand, the majority of school psychologists referred the student with ASD for an evaluation for special education, while at the same time did not recommend a referral for an evaluation for gifted programming. The majority of SpEd teachers made referrals for evaluations for both special education and gifted programming for the student with ASD. Even though the majority of these participants made referrals in favor of both evaluations, there were significantly more referrals for an evaluation for special education than for gifted programming. Similar to the vignette condition with the student with an SLD label, G/T teachers was the only group to make more referrals for an evaluation for

gifted programming than for special education; however, this difference was not statistically significant.

Also similar to the student with SLD, the two most frequently reported concerns were the student's social skills and self-regulation of emotion as reasons for a referral for a special education evaluation. In contrast to the student with SLD, the next most frequently reported reason was a need for the special education environment, instruction, or services, which was less frequently reported for the student with SLD. This might be related to stereotypic beliefs and heuristics associated with and utilized during the decision process for students with specific diagnostic labels. These reasons were followed by academic concerns, including those specifically related to reading. Furthermore, while less frequently reported as a whole and when compared to the student with SLD, more participants reported there was an adverse effect on learning evident and that the student with ASD was not accessing the general education curriculum.

Student with No Diagnostic Label. There were fewer group differences for special education referral decisions for the student with no diagnostic label. First, there were no significant group differences found between Gen. teachers, SpEd teachers, and school psychologists. Participants made similar overall special education referral recommendations; therefore, group differences were not evident. While the majority of all three groups recommended referrals for an evaluation for special education, the difference was only statistically significant for the SpEd teachers. G/T teachers reported similarly in referring or not referring the student for an evaluation for special education; however, the sample size in this vignette condition was small. Similar to the other

vignette conditions, it is possible that more variation might be evident with a larger sample size.

One other factor to consider is that when compared to the other two vignettes, the one with no diagnostic label resulted in the largest percentage of participants who did not recommend a referral for an evaluation for special education, at nearly 45%. This means that if this student had not already been diagnosed or had a suspected diagnosis, the student with no diagnostic label was more likely to not be recommended for a referral for an evaluation for special education services. This finding might be representative of delays in potential identification for twice-exceptional students (Ferri et al., 1997; Holliday et al., 1999) or a general lack of knowledge in regard to these unique learners.

There were also no group differences in gifted programming referral decisions for the student with no diagnostic label, but there was some slight variation in responses within groups. A slight majority of Gen. teachers recommended a referral for an evaluation for gifted programming, while the majority of SpEd teachers and school psychologists did not recommend a referral for the student with no diagnostic label. All of the G/T teachers in this vignette condition recommended a referral for an evaluation for gifted programming; however, this sample size was small, and the results could potentially vary with a larger sample.

Unlike the vignettes with diagnostic labels, no difference was found between special education and gifted programming referral decisions as a whole for the student with no diagnostic label. While it was hypothesized that the student with no diagnostic label would also be referred for a special education evaluation more than a gifted programming evaluation, this hypothesis was not confirmed. In some ways, this is

promising for twice-exceptional students who are not currently identified for either special or gifted education services. On the other hand, this also demonstrated the variation in potential response among different referral sources for the student described in this vignette, which might be explained by uncertainty toward an unidentified student and result in inaction.

Similar to the vignettes with diagnostic labels, there was some variation between participant groups for the student with no diagnostic label when comparing special education and gifted programming referral decisions. Additional analyses revealed that SpEd teachers and school psychologists made significantly more referrals for evaluations for special education than for gifted programming. No significant differences were found for the Gen. teachers, since participants were essentially split in half in regard to the referral decisions for both special education and gifted programming for this student. On the other hand, G/T teachers made more referrals for an evaluation for gifted programing than for special education for the student with no diagnostic label; however, this finding is descriptive and should be considered with caution due to the small sample size.

In all, there seems to be a greater lack of consensus in regard to the student with no diagnostic label. Taken together, these results in particular illustrate the potential masking effect, which can result in twice-exceptional students remaining in the general education classroom without supports or services for bolstering their strengths or remediating their weaknesses. While a primary focus on remediation can be detrimental for twice-exceptional students (Bianco et al., 2009; Nielsen & Mortorff-Albert, 1989), a lack of intervention or supports altogether can place these students at great risk for

negative schooling experiences—impacting academic achievement, self-efficacy, and social interactions and relationships.

Limitations

There are some limitations in this study that are worth noting. First, conclusions regarding the referral decisions of G/T teachers are limited due to the number of participants. It was expected this would be the most difficult group to recruit due to fewer numbers of G/T teachers in general. According to KDE, there were 116 and 110 G/T teachers in Kentucky elementary schools during the fiscal years, 2013 and 2014, respectively. Even with the few number of G/T teachers in this study, they are an important referral source and their perspectives may prove to be essential in the evaluation process for twice-exceptional students.

As with any analogue methodology, there are also concerns with external validity. Since participants responded to a simulated situation, this might not accurately reflect actual decision making in practice. Vignettes are also brief, while real world decisions regarding referral decisions, diagnoses, or educational placement decisions involve the integration of a lot of data. Conclusions are limited since the referral decisions and reasons for those decisions are based off a specific vignette. Responses are likely to vary based on the descriptors and information provided. This also limits the comparisons made to other analogue studies that utilized different vignettes. While this is a simulated approach, it allowed the researcher to control variables of interest and exclude specific extraneous variables. Furthermore, dichotomous response options were used in order to make the referral decision and recommendation more similar to real-world practice, in that one either refers or does not refer the child. This differed from previous research,

which primarily utilized Likert-type response options. While this might have limited the variability in responses from the participants and thus overall findings of statistical significance, it might better inform decisions made in practice. The addition of open-ended questions also allowed the participants to expand on this decision.

External validity was also limited by the study sample, which included teachers at the elementary school level, as well as school psychologists, who work in Kentucky. While contacts with all special education directors and schools with grades K-5 in Kentucky were attempted, some contacts could not be reached. Thus, these findings can only be generalized to Kentucky teachers and school psychologists, while generalizations to other populations, such as a national sample, cannot be justified.

The content validity of the vignettes may also be of concern. Even though the written vignette methodology is consistent with previous research in this area (e.g., Bianco, 2005; Huebner, 1990; Minner et al., 1987; Podell & Soodak, 1993; Reiss et al., 1982), previous studies provided little information regarding the development of the vignettes. In order to address this, the vignettes used in this study were developed from descriptions in the literature on these students. The vignettes were further reviewed and edited by professors at University of Kentucky. Finally, the vignettes were piloted with similar populations of interest prior to this study in order to obtain preliminary findings and feedback.

Last, the choice to disseminate the survey via the Internet might have influenced the overall response rate. A survey via the mail, which was more typical of previous studies in this area, might have influenced the number of and who might have participated. Indeed, there were many potential participants who activated the survey, but

did not answer any questions. This might have also been due to the general format of the survey or even the order of the questions. For example, beginning the survey with the vignette might have detracted some participants from taking the time to read it. It is possible that beginning the survey with the demographic questions would have altered the response rate.

Study Implications

Given the associated risks for twice-exceptional students to be identified later in life or not at all (Ferri et al., 1997; Holliday et al., 1999), as well as the inherent difficulties in accurately identifying these students, further understanding of the possible factors that might influence these educational decisions is essential. The current study specifically investigated how the referral source and presence of a diagnostic label might influence the decision to refer a student for an evaluation for special education and gifted programming.

Overall, the majority of participants recommended referrals for special education evaluations while there was more variation in referral recommendations for gifted programming. It is clear though that the referral source is an essential factor to consider in regard to both referrals for special education and gifted programming evaluations, particularly for students with suspected disabilities.

Recognizing the unique role and perspective that each member of a multidisciplinary team might bring to the referral process is important. While this might include how the professional's education and experience might influence these decisions, it also includes potential bias. Based on the results of this study, school psychologists might be a less biased group to rely on for appropriate special education referrals, but not

for gifted programming referrals. When presented with a child with varying strengths and weaknesses, consulting with G/T teachers might prove to be beneficial for understanding the student's needs. Being aware of how these factors, as well as many others not investigated in the current study, might influence the educational referral decisions for twice-exceptional students is imperative.

The differences in referral decisions within the different participant groups also highlight the need for additional educational training or professional development opportunities. A primary focus for both teachers and school psychologists might target the belief that having a disability and being gifted are mutually exclusive and that a dually-differentiated curriculum might be needed for some students. School psychologists could furthermore benefit from in-depth training in characteristics of gifted students, difficulties they might face in school, and the unique challenges of students who are gifted and also have a disability. While it could be argued that school psychologists might not be involved in the identification or referral processes for gifted students, if they are primarily involved with students with suspected or identified disabilities, this knowledge is essential in order to appropriately determine the services for twice-exceptional students who have yet to be evaluated for gifted programming.

Future Research

There are several areas for future research and analyses. First, with the few number of studies that have addressed the referral decisions for twice-exceptional students, this must continue to be investigated in order to further understand what factors might influence these decisions, including the referral source and biases, among others. While this study included four different potential referral sources, which has not been

done in previous research, other potential referral sources or stakeholders should be considered, such as school guidance counselors and other service providers. Gaining a parent perspective would be informative as well, although, the recruitment and methodology would likely differ from the current study in order to target parents who have twice-exceptional children or children who might need to be evaluated based off of school records.

Since conclusions are limited to the specific vignette utilized, it might be beneficial to use this same vignette in future studies. In addition, the same vignette could be utilized with slight variations in descriptors to investigate other unidentified factors that might influence the referral decisions for twice-exceptional students. This could be guided by the current data collected through the open-ended questions as to what factors were the most frequently reported as reasons for specific referral decisions. While this was the first study to investigate the referral decisions of gifted students who also have ASD, this must continue to be investigated, as well as other diagnostic labels, in order to obtain a greater understanding of how diagnostic labels and even suspected diagnoses might influence the referral decisions for twice-exceptional students.

Comparisons to people who work in other states might be beneficial as well in order to understand how gifted education and special education policy might also contribute as a factor in this process. This would also allow greater generalization among these different participant groups. Findings from such studies might better inform overall training and educational needs for teachers and school psychologists.

Appendix A

Vignettes

L.S. is in the third grade and may have autism spectrum disorder. L.'s teachers describe L. as very bright and curious; however, L. does not perform consistently on classroom assignments and achievement testing. While L. typically performs at above-grade level in math, L. performs below grade level in reading.

L. likes to work independently and sometimes has difficulty working and interacting with others. L. prefers to work on self-selected tasks and may get upset if told to change tasks, especially to a non-preferred task. L. receives excellent grades on tasks that engage and interest L., although L. has poorer performance on tasks that do not interest L.

L. is quite competitive in the classroom and in other activities, such as games during gym or on the playground. L. often works quickly to finish tasks, calls out answers in class rather than waiting to be called upon, and strives to "win" at most things. L. also has difficulty checking over assignments, even when prompted or reminded. If a mistake is pointed out to L., L. may become upset and have difficulty calming down.

L. does not have many friends and prefers to be alone. If a child starts a conversation with L., L. has difficulty talking about other topics than L.'s interests and may get easily excited and dominate the conversation. L. is interested in specific topics, including horses and horse racing. L. knows many facts about different breeds of horses and can recite specific details about horse races, much to the amazement of some of L.'s peers. On the weekend, L. does not invite children over to play at L.'s house. L. typically spends the weekend alone and engaged in activities related to horses.

L.S. is in the third grade and may have a specific learning disorder in reading. L.'s teachers describe L. as very bright and curious; however, L. does not perform consistently on classroom assignments and achievement testing. While L. typically performs at above-grade level in math, L. performs below grade level in reading.

L. likes to work independently and sometimes has difficulty working and interacting with others. L. prefers to work on self-selected tasks and may get upset if told to change tasks, especially to a non-preferred task. L. receives excellent grades on tasks that engage and interest L., although L. has poorer performance on tasks that do not interest L.

L. is quite competitive in the classroom and in other activities, such as games during gym or on the playground. L. often works quickly to finish tasks, calls out answers in class rather than waiting to be called upon, and strives to "win" at most things. L. also has difficulty checking over assignments, even when prompted or reminded. If a mistake is pointed out to L., L. may become upset and have difficulty calming down.

L. does not have many friends and prefers to be alone. If a child starts a conversation with L., L. has difficulty talking about other topics than L.'s interests and may get easily excited and dominate the conversation. L. is interested in specific topics, including horses and horse racing. L. knows many facts about different breeds of horses and can recite specific details about horse races, much to the amazement of some of L.'s peers. On the weekend, L. does not invite children over to play at L.'s house. L. typically spends the weekend alone and engaged in activities related to horses.

L.S. is in the third grade. L.'s teachers describe L. as very bright and curious; however, L. does not perform consistently on classroom assignments and achievement testing. While L. typically performs at above-grade level in math, L. performs below grade level in reading.

L. likes to work independently and sometimes has difficulty working and interacting with others. L. prefers to work on self-selected tasks and may get upset if told to change tasks, especially to a non-preferred task. L. receives excellent grades on tasks that engage and interest L., although L. has poorer performance on tasks that do not interest L.

L. is quite competitive in the classroom and in other activities, such as games during gym or on the playground. L. often works quickly to finish tasks, calls out answers in class rather than waiting to be called upon, and strives to "win" at most things. L. also has difficulty checking over assignments, even when prompted or reminded. If a mistake is pointed out to L., L. may become upset and have difficulty calming down.

L. does not have many friends and prefers to be alone. If a child starts a conversation with L., L. has difficulty talking about other topics than L.'s interests and may get easily excited and dominate the conversation. L. is interested in specific topics, including horses and horse racing. L. knows many facts about different breeds of horses and can recite specific details about horse races, much to the amazement of some of L.'s peers. On the weekend, L. does not invite children over to play at L.'s house. L. typically spends the weekend alone and engaged in activities related to horses.

Appendix B

Teacher Survey

Thank you for choosing to participate in this research study! It is possible that you will receive an invitation for this survey from different people. If you have already participated, thank you! **Please do not complete this survey more than once.**

By beginning the survey, you acknowledge that you have read the information in the accompanying email and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

To begin the survey, click the Next button below. You cannot return to previously answered questions, so answer each question fully before moving forward in the survey. Thank you!

Please read the brief vignette below and respond to the statements and questions that follow.

[Randomly Selected Vignette]

Please indicate whether you agree or disagree with the following statement.

I would recommend that this student be referred for ***an evaluation for gifted programming services.***

- Yes, I would recommend a referral for an evaluation.
- No, I would not recommend a referral for an evaluation.

Briefly, what were the main reasons that brought you to this decision?

Please indicate whether you agree or disagree with the following statement.

I would recommend that this student be referred for ***an evaluation for special education services.***

- Yes, I would recommend a referral for an evaluation.
- No, I would not recommend a referral for an evaluation.

Briefly, what were the main reasons that brought you to this decision?

Please respond to the questions below.

What is the highest educational degree you completed?

- Bachelor's degree
- Master's degree
- Specialist degree
- Professional degree
- Doctoral degree

I am certified by the Kentucky Education Professional Standards Board in the following (Check all that apply):

- Interdisciplinary Early Childhood Education
- Elementary School (Primary through Grade 5)
- Middle School (Grades 5 though 9)
- Secondary School (Grades 8 through 12) - Include your Specialization (if applicable) below:
- Middle/Secondary School (Grades 5 through 12) - Include your Specialization (if applicable) below:
- Elementary/Middle/Secondary School (Primary through Grade 12) - Include your Specialization (if applicable) below:
- Exceptional Children - Include your Specialization (if applicable) below:
- Gifted Education, Endorsement to Certification (Primary through Grade 12)
- Other:

How many school years have you taught in a public school, including the current school year?

Please respond to the questions below.

What grades do you currently teach? Check all that apply.

- Kindergarden
- 1st Grade
- 2nd grade
- 3rd grade
- 4th grade
- 5th grade
- Other:

Please indicate what type(s) of students you *currently* teach in your classroom. Check all that apply.

- [ ] Students in general education
- [ ] Students with special education needs
- [ ] Students with gifted education needs
- [ ] Other:

The *majority* of the students I teach in a typical day are (check only one):

- Students in general education
- Students with special education needs
- Students with gifted education needs
- Other:

Does your school directly provide gifted and talented services?

- Yes
- No
- I do not know.

Does your school currently utilize Response to Intervention (RtI) for the identification of students with special needs?

- Yes
- No
- I do not know.

What types of students are identified through RtI at your school? Check all that apply.

- [ ] Students with specific learning disabilities, only
- [ ] All students in need of special education
- [ ] Students who are gifted and talented
- [ ] I do not know.
- [ ] Other:

Please respond to the questions below.

Please indicate your gender:

- Female
- Male
- Other (please specify):

Please indicate your race/ethnicity:

- American Indian and Alaska Native
- Asian alone, not Hispanic or Latino
- Asian alone, includes Hispanic or Latino
- Black or African American alone, not Hispanic or Latino
- Black or African American alone, includes Hispanic or Latino
- Hispanic or Latino, regardless of race
- Native Hawaiian or Other Pacific Islander
- White alone, not Hispanic or Latino
- White alone, includes Hispanic or Latino
- Two or more races/ethnicities:

Please respond to the following questions regarding your familiarity and experience with different types of students.

Please rate your ***familiarity*** with students who are **gifted and have autism spectrum disorder.**

No familiarity | Some familiarity | Moderate familiarity | Extensive familiarity

Please rate your ***experience*** in working with students who are **gifted and have autism spectrum disorder.**

None | Some | Moderate | Extensive

Please rate your ***familiarity*** with students who are **gifted and have a specific learning disability.**

No familiarity | Some familiarity | Moderate familiarity | Extensive familiarity

Please rate your ***experience*** in working with students who are **gifted and have a specific learning disability.**

None | Some | Moderate | Extensive

Please respond to the following questions regarding your familiarity and experience with students who are twice-exceptional.

Please rate your ***familiarity*** with students who are **twice-exceptional.**

No familiarity | Some familiarity | Moderate familiarity | Extensive familiarity

Please rate your ***experience*** in working with students who are **twice-exceptional.**

None | Some | Moderate | Extensive

In your own words, define "twice-exceptional."

Thank you for participating in this study! If you would like to be entered into a random drawing for a $30 gift card to either iTunes or Amazon.com, click the link below to enter your email address. Your email address will only be used to contact you if you win the random drawing, and it is not connected to any of your survey responses. ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.*** After you enter your email address, click 'Finish Survey' below. Thank you!

If you do not wish to be entered into the random drawing for a gift card, click 'Finish Survey' below. Thank you!

https://docs.google.com/forms/d/1BDc28sEp5DTm7sl-qNwDHzGhzlSSC6UX9YDr6kLig3w/viewform

Appendix C

School Psychologist Survey

Thank you for choosing to participate in this research study! It is possible that you will receive an invitation for this survey from different people. If you have already participated, thank you! **Please do not complete this survey more than once.**

By beginning the survey, you acknowledge that you have read the information in the accompanying email and agree to participate in this research, with the knowledge that you are free to withdraw your participation at any time without penalty.

To begin the survey, click the Next button below. You cannot return to previously answered questions, so answer each question fully before moving forward in the survey. Thank you!

Please read the brief vignette below and respond to the statements and questions that follow.

[Randomly Selected Vignette]

Please indicate whether you agree or disagree with the following statement.

I would recommend that this student be referred for ***an evaluation for gifted programming services.***

- Yes, I would recommend a referral for an evaluation.
- No, I would not recommend a referral for an evaluation.

Briefly, what were the main reasons that brought you to this decision?

Please indicate whether you agree or disagree with the following statement.

I would recommend that this student be referred for ***an evaluation for special education services.***

- Yes, I would recommend a referral for an evaluation.
- No, I would not recommend a referral for an evaluation.

Briefly, what were the main reasons that brought you to this decision?

Please respond to the questions below.

What is the highest educational degree you completed?

- Master's degree
- Specialist degree
- Professional degree
- Doctoral degree

How many school years have you practiced as a school psychologist in a public school, including the current school year?

Do you ***currently*** practice in any other settings?

- Yes
- No

Please indicate below where you also ***currently*** practice. Check all that apply.

- University instructor/ professor
- Mental health clinic
- Private practice
- Community-based day-treatment facility
- Residential facility
- Hospital
- Juvenile justice center
- Other:

Please respond to the questions below.

Do any of the schools in which you currently work directly provide gifted and talented services?

- Yes
- No
- I do not know.

Do any of the schools in which you currently work utilize Response to Intervention (RtI) for the identification of students with special needs?

- Yes
- No
- I do not know.

What types of students are identified through RtI at your school(s)? Check all that apply.

- Students with specific learning disabilities, only
- All students in need of special education
- Students who are gifted and talented
- I do not know.
- Other:

Please respond to the questions below.

Please indicate your gender:

- Female
- Male
- Other (please specify):

Please indicate your race/ethnicity:

- American Indian and Alaska Native
- Asian alone, not Hispanic or Latino
- Asian alone, includes Hispanic or Latino
- Black or African American alone, not Hispanic or Latino
- Black or African American alone, includes Hispanic or Latino
- Hispanic or Latino, regardless of race
- Native Hawaiian or Other Pacific Islander
- White alone, not Hispanic or Latino
- White alone, includes Hispanic or Latino
- Two or more races/ethnicities:

Please respond to the following questions regarding your familiarity and experience with different types of students.

Please rate your ***familiarity*** with students who are **gifted and have autism spectrum disorder.**

No familiarity | Some familiarity | Moderate familiarity | Extensive familiarity

Please rate your ***experience*** in working with students who are **gifted and have autism spectrum disorder.**

None | Some | Moderate | Extensive

Please rate your ***familiarity*** with students who are **gifted and have a specific learning disability.**

No familiarity | Some familiarity | Moderate familiarity | Extensive familiarity

Please rate your ***experience*** in working with students who are **gifted and have a specific learning disability.**

None | Some | Moderate | Extensive

Please respond to the following questions regarding your familiarity and experience with students who are twice-exceptional.

Please rate your ***familiarity*** with students who are **twice-exceptional.**

No familiarity	Some familiarity	Moderate familiarity	Extensive familiarity

Please rate your ***experience*** in working with students who are **twice-exceptional.**

None	Some	Moderate	Extensive

In your own words, define "twice-exceptional."

Thank you for participating in this study! If you would like to be entered into a random drawing for a $30 gift card to either iTunes or Amazon.com, click the link below to enter your email address. Your email address will only be used to contact you if you win the random drawing, and it is not connected to any of your survey responses. ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.*** After you enter your email address, click 'Finish Survey' below. Thank you!

If you do not wish to be entered into the random drawing for a gift card, click 'Finish Survey' below. Thank you!

https://docs.google.com/forms/d/1BDc28sEp5DTm7sl-qNwDHzGhzlSSC6UX9YDr6kLig3w/viewform

Appendix D

Initial Email Invitation to Principals

Dear _____:

My name is Jennifer Hoffman and I am a doctoral candidate in the school psychology program at the University of Kentucky. I am currently working on my dissertation research project under the supervision of doctoral co-chairs, Dr. H. Tom Prout and Dr. Alicia Fedewa. I wanted to share a research opportunity for teachers in your school. I am hoping that you can ask your teachers to participate in this study, which is investigating referral decisions about students with different needs. **I would greatly appreciate it if you could forward this email to the teachers in your school. The message to be sent is found below, along with the link to the study.**

I realize you and your teachers are incredibly busy and therefore appreciate you taking the time to disseminate this request. **Please also take a moment to respond to this email and indicate whether or not you are willing to pass this information along to your teachers.**

Thank you for your consideration,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Hello Teachers!

I am inviting you to participate in a research study investigating referral decisions about students with different needs. Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about professional decisions regarding students with different needs. You will be asked to read a brief vignette about a student and then answer some questions.

We hope to receive completed questionnaires from about 1,000 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time. **The survey will take about 10-15 minutes to complete. If you choose to take part in the study, you will also be given the opportunity to become entered into a random drawing for one of four iTunes or Amazon.com gift cards valued at $30**

each. ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.***

There are no known risks to participating in this study. Also, your response to the survey is anonymous, which means no names will appear or be used on research documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to contact me; my contact information is below. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

Thank you for your consideration to participate in this important project! Please complete the online survey by _____.

Survey Link: _____

Sincerely,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Appendix E

Follow-up Email to Principals

Dear _____:

About two weeks ago, you should have received a survey invitation that I sent to you via email along with a request to forward this survey to teachers at your school. The survey was about the referral decisions for students with different needs. This is a reminder that if you have not had the opportunity to send this message to teachers at your school, I would still appreciate hearing from them.

If you have not already done so, would you please take a moment to forward this email to teachers at your school? Please also respond to this email to tell me whether or not you are willing to send this to your teachers.

Thank you!

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Hello Teachers!

I am inviting you to participate in a research study investigating referral decisions about students with different needs. Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about professional decisions regarding students with different needs. You will be asked to read a brief vignette about a student and then answer some questions.

We hope to receive completed questionnaires from about 1,000 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time. **The survey will take about 10-15 minutes to complete. If you choose to take part in the study, you will also be given the opportunity to become entered into a random drawing for one of four iTunes or Amazon.com gift cards valued at $30 each.** ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.***

There are no known risks to participating in this study. Also, your response to the survey is anonymous, which means no names will appear or be used on research

documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to contact me; my contact information is below. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

Thank you for your consideration to participate in this important project! Please complete the online survey by _____.

Survey Link: _____

Sincerely,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Appendix F

Initial Email Invitation to KAPS Representatives

Dear _____:

My name is Jennifer Hoffman and I am a doctoral candidate in the school psychology program at the University of Kentucky. I am currently working on my dissertation research project under the supervision of doctoral co-chairs, Dr. H. Tom Prout and Dr. Alicia Fedewa. I wanted to share a research opportunity for school psychologists in your representative KAPS region. I am hoping that you can ask school psychologists in your region to participate in this study, which is investigating referral decisions about students with different needs. **I would greatly appreciate it if you could forward this email to the school psychologists in your region. The message to be sent is found below, along with the link to the study.**

I appreciate you taking the time to disseminate this request. **Please also take a moment to respond to this email and indicate whether or not you are willing to pass this information along to the school psychologists in your region.**

Thank you for your consideration,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Hello School Psychologists!

I am inviting you to participate in a research study investigating referral decisions about students with different needs. Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about professional decisions regarding students with different needs. You will be asked to read a brief vignette about a student and then answer some questions.

We hope to receive completed questionnaires from about 1,000 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time. **The survey will take about 10-15 minutes to complete. If you choose to take part in the study, you will also be given the opportunity to become entered into a random drawing for one of four iTunes or Amazon.com gift cards valued at $30 each.**

There are no known risks to participating in this study. Also, your response to the survey is anonymous, which means no names will appear or be used on research documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to contact me; my contact information is below. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

Thank you for your consideration to participate in this important project! Please complete the online survey by _____.

Survey Link: _____

Sincerely,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Appendix G

Follow-up Email to KAPS Representatives

Dear _____:

About three weeks ago, you should have received a survey invitation that I sent to you via email along with a request to forward this survey to the school psychologists in your representative KAPS region. The survey was about the referral decisions for students with different needs. This is a reminder that if you have not had the opportunity to send this message to the school psychologists in your KAPS region, I would still appreciate hearing from them.

If you have not already done so, would you please take a moment to forward this email to the school psychologists in your KAPS region? Please also respond to this email to tell me whether or not you are willing to send this research invitation.

Thank you!

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Hello!

I am inviting you to participate in a research study investigating referral decisions about students with different needs. Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about professional decisions regarding students with different needs. You will be asked to read a brief vignette about a student and then answer some questions.

We hope to receive completed questionnaires from about 1,000 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time. **The survey will take about 10-15 minutes to complete. If you choose to take part in the study, you will also be given the opportunity to become entered into a random drawing for one of four iTunes or Amazon.com gift cards valued at $30 each.** ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.***

There are no known risks to participating in this study. Also, your response to the survey is anonymous, which means no names will appear or be used on research documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to contact me; my contact information is below. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

Thank you for your consideration to participate in this important project! Please complete the online survey by _____.

Survey Link: _____

Sincerely,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Appendix H

Initial Email Invitation to Special Education Directors

Dear _____:

My name is Jennifer Hoffman and I am a doctoral candidate in the school psychology program at the University of Kentucky. I am currently working on my dissertation research project under the supervision of doctoral co-chairs, Dr. H. Tom Prout and Dr. Alicia Fedewa. I wanted to share a research opportunity for the school psychologist(s) in your district. I am hoping that you can ask the school psychologist(s) in your district to participate in this study, which is investigating referral decisions about students with different needs. **I would greatly appreciate it if you could forward this email to the school psychologist(s) in your district. The message to be sent is found below, along with the link to the study.**

I appreciate you taking the time to disseminate this request. **Please also take a moment to respond to this email and indicate whether or not you are willing to pass this information along to the school psychologist(s) in your district.**

Thank you for your consideration,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Hello!

I am inviting you to participate in a research study investigating referral decisions about students with different needs. Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about professional decisions regarding students with different needs. You will be asked to read a brief vignette about a student and then answer some questions.

We hope to receive completed questionnaires from about 1,000 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time. **The survey will take about 10-15 minutes to complete. If you choose to take part in the study, you will also be given the opportunity to become entered into a random drawing for one of four iTunes or Amazon.com gift cards valued at $30**

each. ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.***

There are no known risks to participating in this study. Also, your response to the survey is anonymous, which means no names will appear or be used on research documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to contact me; my contact information is below. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

Thank you for your consideration to participate in this important project! Please complete the online survey by _____.

Survey Link: _____

Sincerely,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Appendix I

Follow-up Email to Special Education Directors

Dear _____:

About two weeks ago, you should have received a survey invitation that I sent to you via email along with a request to forward this survey to the school psychologist(s) in your district. The survey was about the referral decisions for students with different needs. This is a reminder that if you have not had the opportunity to send this message to the school psychologist(s) in your district, I would still appreciate you doing so.

If you have not already done so, would you please take a moment to forward this email to the school psychologist(s) in your district? Please also respond to this email to tell me whether or not you are willing to send this research invitation.

Thank you!

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

Hello!

I am inviting you to participate in a research study investigating referral decisions about students with different needs. Although you will not get personal benefit from taking part in this research study, your responses may help us understand more about professional decisions regarding students with different needs. You will be asked to read a brief vignette about a student and then answer some questions.

We hope to receive completed questionnaires from about 1,000 people, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do participate, you are free to skip any questions or discontinue at any time. **The survey will take about 10-15 minutes to complete. If you choose to take part in the study, you will also be given the opportunity to become entered into a random drawing for one of four iTunes or Amazon.com gift cards valued at $30 each.** ***Please note: Some school districts do not allow their employees to receive individual compensation or incentives for research participation.***

There are no known risks to participating in this study. Also, your response to the survey is anonymous, which means no names will appear or be used on research

documents, or be used in presentations or publications. The research team will not know that any information you provided came from you, nor even whether you participated in the study.

Please be aware, while we make every effort to safeguard your data once received from the online survey/data gathering company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey/data gathering company's servers, or while en route to either them or us. It is also possible the raw data collected for research purposes may be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company's Terms of Service and Privacy policies.

If you have questions about the study, please feel free to contact me; my contact information is below. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428.

Thank you for your consideration to participate in this important project! Please complete the online survey by _____.

Survey Link: _____

Sincerely,

Jennifer Hoffman, M.S.
Doctoral Candidate
Department of Educational, School, and Counseling Psychology
University of Kentucky
PHONE:
EMAIL:

References

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Vita

Jennifer Hoffman

EDUCATION

08/2010 – 12/2011	University of Kentucky, Lexington, KY Master of Science in Education Educational and Counseling Psychology
08/2004 – 05/2008	University of Evansville, Evansville, IN Bachelor of Science, *magna cum laude* Psychology; Minor in Studio Art
08/2005 - 12/2005	Harlaxton College, Grantham, England Study Abroad Program

HONORS/AWARDS

2014-2015	Helen Thacker Graduate Fellowship in Educational and Counseling Psychology
2013-2014	Doris Nowak and William Earle Stilwell, Endowed Graduate Fellowship
2008	Best Senior Thesis Award Schmedes, J. M. (2008). *Childhood cancer: Psychological factors and family relationships*. (Senior thesis). University of Evansville, Evansville, IN.
2008	Pund Art Therapy Award
2006, 2008	Art Achievement Award
2005-2008	Academic Achievement Award
2005	Phi Eta Sigma Essay Scholarship
2004-2008	University of Evansville Academic Scholarship

RESEARCH EXPERIENCE

08/2010 – 08/2011	University of Kentucky, Lexington, KY, Autism Services Research Group. Graduate Research Assistant. Supervisor: Lisa Ruble, Ph.D., Licensed Psychologist
12/2009 – 06/2010	University of Kentucky, Lexington, KY, Autism Services Research Group. Research Assistant. Supervisor: Lisa Ruble, Ph.D., Licensed Psychologist
06/2008 - 12/2009	University of Kentucky, Lexington, KY, Laboratory of Human Behavioral Pharmacology. Research Assistant. Supervisors: Craig Rush, Ph.D. and William Stoops, Ph.D.

01/2008 - 05/2008	University of Evansville, Evansville, IN. Research Assistant. Supervisor: Valerie Milholland, M.A.

CLINICAL EXPERIENCE

08/2014 – Present	Prince George's County Public Schools, Upper Marlboro, MD. Pre-doctoral Intern. Supervisors: David Medoff, Ph.D., Licensed Psychologist and Sarah Regnell, M.A., NCSP
08/2012 – 05/2013	University of Kentucky Center for Autism Spectrum Evaluation, Service and Research, Lexington, KY. Advanced Practicum Student. Supervisor: Lisa Ruble, Ph.D., Licensed Psychologist
08/2011 – 05/2012	Fayette County Public Schools, Lexington, KY. Practicum Student. Supervisor: Amy Oates, Psy.S., NCSP
08/2010 – 12/2010	Fayette County Public Schools, Lexington, KY. Practicum Student. Supervisor: Melisa Morris, Ed.S., NCSP
01/2008 - 05/2008	St. Mary's Hospital, Evansville, IN. Undergraduate Intern. Supervisor: Stacy Carmichael, Ph.D., Licensed Psychologist
05/2007 - 08/2007	Evansville Psychiatric Children's Center, Evansville, IN. Undergraduate Intern. Supervisor: Valerie Milholland, M.A.

TEACHING EXPERIENCE

08/2012 – 05/2014	University of Kentucky, Department of Educational, School, and Counseling Psychology, Lexington, KY. Graduate Assistant/Teaching Assistant. Supervisors: H. Tom Prout, Ph.D., Jonathan Campbell, Ph.D., and Rachel Hammond, Ph.D.
08/2011 – 05/2012	University of Kentucky, Department of Psychology, Lexington, KY. Graduate Teaching Assistant. Supervisors: Jonathan Golding, Ph.D. and Andrea Friedrich, Ph.D.
08/2007 - 05/2008	University of Evansville, Department of Psychology, Evansville, IN. Undergraduate Teaching Assistant. Supervisor: Elizabeth Hennon, Ph.D.

PUBLICATIONS

Hammond, R. K., & Hoffman, J. M. (2014). Adolescents with high functioning autism: An investigation of co-morbid anxiety and depression. *Journal for Mental Health Research in Intellectual Disabilities, 7,* 246-263.

Fedewa, A., & Hoffman, J. M. (2013). Nutrition and physical activity as protective factors in eliminating the achievement gap. *School Psychology Communique: Pediatric Edition, August/September.*

PAPER PRESENTATIONS

Hoffman, J. M., & Fedewa, A. L. (2013, February). *Serving the underserved: Strategies for Supporting Twice-exceptional students.* Paper presented at the annual convention of the National Association of School Psychologists, Seattle, WA.

Fedewa, A. L., Hirsch, A. J., & Hoffman, J. M. (2011, February). *A spectrum of identity: Gender variant children and schools.* Paper presented at the annual convention of the National Association of School Psychologists, San Francisco, CA.

POSTER PRESENTATIONS

Hoffman, J. M., Hinchey, M. C., Sigler, A., & Ruble, L. A. (2014, February). *Individualized Social Skills Assessment and Intervention for Children with Autism*. Poster to be presented at the annual convention of the National Association of School Psychologists, Washington, D.C.

Aiello, R. E., Hoffman, J. M., & Ruble, L. A. (2011, September). *Influence of the ADOS on Autism knowledge, experiences, and services in Kentucky.* Poster presented at the annual conference of the Kentucky Association for Psychology in the Schools, Lexington, KY.

Hoffman, J. M., & Ruble, L. A. (2011, April). *Parent-teacher consultation and caregiver stress.* Poster presented at the first annual Interdisciplinary Graduate Student Conference for Research on Children at Risk, Lexington, KY.

Hoffman, J. M., & Ruble, L. A. (2011, February). *Parent-teacher consultation and caregiver stress levels.* Poster presented at the annual convention of the National Association of School Psychologists, San Francisco, CA.

Schmedes, J., Bever, T., & Fleming, M. (April, 2008). *Stress and College Students.* Poster presented at the 20th Annual Butler University Undergraduate Research Conference, Indianapolis, IN.