

Running Head: AUTISM SPECTRUM DISORDER TOOLS AND ASSESSMENTS

AUTISM SPECTRUM DISORDER:
EXAMINING CURRENT DIAGNOSIS STRATEGIES AND ASSESSMENT TOOLS

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ASD TOOLS AND ASSESSMENTS

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School of Arts and Sciences

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In Partial Fulfillment

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By

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ABSTRACT

Recent literature notes a significant increase in students being diagnosed with Autism Spectrum Disorder (ASD). Yet, no uniform testing protocol exists. It is vital for students and educators that a unified testing process be created and established. This study investigated which ASD testing instruments were currently used in Southern California public schools. Both survey questions and interview questions allowed the participants of this study to indicate which test was their preferred test based on ease of use and accuracy. The study found that the CARS test was the preferred assessment tool.

Based on the results of this study, recommendations were made for private schools that do not currently test students thought to have ASD characteristics. It is vital that private schools emulate their public counterparts in the realm of special needs. Thus, the implications of this study can be helpful in establishing a solid testing process that will benefit all parties involved.

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Chapter One: Beyond Typical Students

In the past, all students were taught in a similar fashion. Teachers did not teach to each student's strength. Little research was done on gifted students, special needs, and differentiated learning. Students who were found to be intellectually or developmentally different were often sent to separate schools or institutions. Mainstream classrooms were only for the typical student (Muller, 1998). Students in these classes could adapt to a school setting easily and were socially adept. In contrast, students sent to be institutionalized or sent to special education schools were often isolated. An implicit faulty message was sent to the public that people who are different do not belong among us because they are incompetent and lack an ability to contribute to society. Thus, these institutions were demeaning for the students and families who were sent there. These segregated students understood the setting they were in and sank to those expectations. While educators may have possessed good intentions, institutionalizing students was not a positive maneuver (Muller, 1998).

Fortunately, educators today readily recognize the different learning modalities of students. With the onset of No Child Left Behind (NCLB) and Individuals with Disabilities Education Act (IDEA), laws stating that students ought to be in the least restrictive environment, classrooms today hold a mixture of all types of students. Public schools have a mandate to assist students with special needs. For many students this means inclusion, which means that all students, including those with identified special needs are within the classroom and school community (Puldas, 2004). However, even students with special needs who are within a mainstream classroom receive academic support in the form of a pullout or other service (Taylor, 2005).

In addition, within public schools, Education Specialists and Special Day Classes exist in order to help students who need extra attention. These classrooms are generally on the same campus as the general education classrooms and offer a positive environment for students who need additional help. Special education teachers are experts in their field and are well equipped to provide the necessary support to students who qualify.

Since general education teachers now have extremely diverse students, they are learning how to meet the needs of students in a differentiated classroom. From attention disorders (ADHD & ADD) to autism, teachers have no cookie-cutter child anymore. Today, labels abound in the public school setting. These diagnoses are present in order to focus on the area of need for a particular student. A student is referred, tested, and is given a diagnosis in order to receive resources, accommodations and adaptations to further his or her education in a more specific path. While somewhat controversial, these categories, or labels, are in existence to assist educators with helping students in the most specific way possible.

Many positive strides have been made in the area of special needs within public schools to include all students in a positive learning environment. Students who are found to be exceptional are treated as such. The stigma of labels is disappearing, and educators are working together to ensure that all students are given the best public education possible.

One such group of students that is present in today's classroom is students with autism. Many of these children learn in a general education classroom, or in a special day class and are finally getting the help they deserve. But are they getting this help

everywhere? How do they qualify for extra accommodations and adaptations? Is every school consistent in the way they determine eligibility for special education services?

Background of the Problem

Private schools aim to be elite and offer a type of education that public schools cannot. With private funding, and small class sizes, many times these schools succeed in fostering a loving environment with strong academics. However, private schools are significantly behind their public school counterparts in the realm of special needs (Taylor, 2005). Many experts agree that greater efforts ought to be taken to ensure that all students are educated well in private schools (Pudlas, 2004). Private schools are not required to adhere to the same mandate that public schools are (Taylor, 2005). However, placing students in a general education classroom with little or no support is not a responsible, healthy choice for private schools to make. Most recent literature shows that many private schools lack teachers trained to educate students with special needs (Taylor, 2005). Additionally, many private schools in recent studies lacked funding and other requirements for implementing a healthy special needs program. Since private school students lack federal funding, they ought to be given the same access to services through public schools as public school students. The latest IDEA act does not fully include private school students in this open access to services.

In the Bible, Jesus says that we ought to love all people (Matthew 22:39, New International Version). The belief that all people are made in God's image is essential to the Christian worldview. The idea that God gives humans the ability to love, worship and think is often promoted in the private school (Reisen, 2002). Further, Christian private school teachers often foster the idea that God gives all people special purpose

through unique talents and abilities. Christian schools encourage students to respect each other and love each other as Christ commanded. Therefore, private schools ought to love all children by doing the best job possible in educating them. Thus, there is a significant disparity between the Christian worldview of students with special needs and the method in which these students are taught in Christian schools (Stymeist, 2008). Some experts such as Pudlas (2004) say that Christian schools should not only equal public school's efforts regarding special needs students, but should also exceed them, "...a commonly held world-view, a Biblical one in which all students are valued equally, should lead to different student perceptions than those of students in public schools where no such common world-view is held" (p. 67).

Every year one of the most significant statistics to rise within the area of special needs is autism. The amount of students who are recognized as having autistic tendencies is rising every year. Schoenstandt (2009) states, "Two to six children out of every 1,000 will have autism" (p. 1). Other experts provide a higher percentage. In a recent international study, experts now estimate that 2.64% of the population is autistic (Carey, 2011). While research statistics vary, each is consistent in that all studies indicate a significant rise in students with autism when compared to past research. With the ever-increasing number of students being diagnosed with autism or a form of autism on the Autism Spectrum Disorder (ASD) scale, schools ought to continue to work towards serving students to the best of their ability. This especially pertains to private schools that are so far behind. Private schools need to cater to those students who need extra attention to help them succeed in school, especially those dealing with the difficulties of ASD.

While it is true that public schools are far superior to private institutions in regards to special needs students, another problem exists. Even public schools, which are more advanced in this area than private schools, are not unified in regards to identifying students with autism. Research has shown that even within a particular district, the tests that are administered to see if a student has autism are not consistent. A plethora of tests exist. There needs to be unity among the schools so that a more accurate picture of the student can be developed. Additionally, ASD tests need to be further researched for reliability and validity. If schools were more unified in these ways, the student's education could be enhanced with more accurate accommodations and adaptations. In addition, many students transfer within districts, or to entirely new districts. Currently, these students need to be retested whenever they move. This process can be costly and frequently takes months or even years to complete. Creating unity between districts will vastly benefit students who transfer. Additionally, unity between districts and schools will prove to be less expensive for all parties involved.

Therefore, not only are private schools far behind the public schools in the area of special needs, but also the public schools lack consistency as to which ASD eligibility test they use. There are a variety of tests used throughout public schools; however, nobody's opinion is taken into consideration when selecting an ASD test for the district or school. Teachers, psychologists and other school educators involved in testing are not being asked which test they prefer. While a test may be accurate, it also needs to be easy to administer and read. It is vital that test creators begin to ask for real feedback on their tests. It is necessary that tests be reliable and easy to administer so that the process may be carried out swiftly for the benefit of the teachers and students. Once school districts

become more serious about switching to one unified testing system, they need to start by surveying the test administrators to see which test is working well in the field. After determining which tests teachers and school psychologists prefer, they ought to choose one test to use within the entire district or county.

Purpose and Significance of the Study

Literature Gaps. The study that follows is highly significant. While researching past studies, two literature gaps were discovered. Very little research has been done to determine which test is the “best.” Some of the assessments used for determining ASD are norm-referenced, while others have yet to be reviewed. In other words, some of the tests have been looked at individually for accuracy and validity (normed), but a study has not been done that compares all of the tests currently used in southern California. There has been some recent literature that has surfaced comparing a few ASD eligibility tests (Mayes et al., 2009; Simek & Wahlberg, 2011). These studies have been helpful. However, in order to choose one universal testing process, it is vital that all tests be cross-referenced. Furthermore, no study lists the exact tests used by each school throughout all of California. Therefore, this study intends to gather a sample of the variety of tests used throughout the southern portion of the state.

It appears that there is no qualitative research that investigates the best test according to the schools themselves. Teachers, administrators, psychologists, and speech therapists are the ones who utilize the tests on a daily basis, yet their opinions have not been elicited until now. More research must be done in order for steps to be taken to implement a universal testing system for students being tested for ASD.

Research Questions. My thesis addresses two questions. These questions were formulated in light of the two gaps that were discovered in the literature. The first question is, “Which ASD tests are currently being used in southern CA public schools?” I will seek to gather a sample of the types of tests that are in use throughout the southernmost part of California (Los Angeles to San Diego). I desire to understand public schools’ processes for testing students with ASD. Once I understand the public schools’ process, I will be able to make an informed recommendation for private schools looking to implement a program for students with ASD.

The second question asks, “Which tests are favored by the school employees who administer them?” As stated, no qualitative data exists in this area. It is vital that research be done in order to ascertain what school psychologists and other school employees feel when they administer a given ASD test. In order to gain accurate, helpful results, test administrators must be able to easily understand the test and have confidence in the results. I will seek to understand which ASD test educators prefer in addition to which tests their school uses. Once I understand what tests public school educators prefer, I can make a recommendation to private schools looking to use one accurate, reliable, easy-to-implement test. Private schools could not be studied in this research since most private schools are not implementing ASD tests at this time. Therefore, a study of public schools is necessary to recommend procedures for private schools.

Overview of Methodology

The researcher sent out a survey to 100 individuals. The individuals were selected based on job position and location. A wide base of individuals was selected for rich data. Fifty-two individuals responded to this survey. The survey was online and included

twenty questions. These questions included a version of the two research questions, and aimed to gather pertinent data from the respondents (see Appendix A for actual survey). It was discovered that very few educators actually work with the testing of students for autism. Typically, only one or two educators per school are involved in the eligibility testing process for students with ASD tendencies. Therefore, while the response rate was low, the individuals who responded were very knowledgeable and helpful for the study. Additionally, since the response rate was 52% it is an adequate sample size.

In addition, thirteen individuals were interviewed. These individuals all had a solid understanding of their district's protocol for eligibility testing for students with autism. A series of five pertinent questions were asked to each individual. All interviews were recorded and coded. The coded data was used to enhance the information gathered from the online survey. These experts were able to give their opinions and facts about ASD testing.

Therefore, this study was a mixed-methods study, including both qualitative and quantitative data. More details regarding methodology will be given in chapter three.

Overview of Findings

The researcher found that twenty different ASD tests were used at the schools represented by the respondents from the study. This quantity indicates that no universal test is used in southern California public schools. No universal test poses many problems to the students and test administrators involved in ASD testing.

Additionally, the CARS test was found to be the “best” test according to educators. Both survey participants and interviewees from this study were asked to indicate their preferred ASD test. The highest percentage of them indicated that the CARS test was user-friendly and accurate.

Hypothesis

The hypotheses of this study are two-fold. First, the researcher hypothesizes that although public schools do not use a unified ASD test, and no research has been done in regards to test administrator preference, by providing an overview of the tests used throughout southern California and gathering qualitative data from educators, I can recommend feasible ways to address the problems at hand. Public schools can use the data (of which tests are used, and which are preferred) to make more informed decisions and work towards a unified testing process. Second, the researcher hypothesizes that Christian schools will be able to examine the data and recommendations from this study in order to start implementing procedures and processes for helping Christian school students with ASD.

Thus far, I have provided the problem statement and have explained the importance of this research study. In Chapter Two, current literature pertaining to ASD tests and autism in general will be examined. Within this chapter, I will demonstrate the

lack of research done in regards to a comprehensive comparison of tests currently used in California. Additionally, the lack of research done in the area of qualitative research will be shown. There are no current studies of educator preference for ASD tests, even though educators use these tests frequently. Furthermore, the literature that describes various tests and the research carried out for each will be explained.

In Chapter Three, I will explain the methods of this study. It will be explained why a mixed-methods approach was used and why individuals were selected to take the survey and the interview. Depicting the response rate and the number of individuals who qualified for the survey will also occur in chapter three. It is my intention to promote triangulation in using both a survey and an interview to produce robust, reliable data.

The data collected will be presented in Chapter Four. The data from survey questions and from interviewees will be coded and presented in a thematic narrative, displaying the most prominent themes within responders. Findings will be presented clearly using both tables and text to show responses.

Chapter Five begins with a summary of findings that support the literature. It will also present conclusions and limitations of the study. Lastly, I will provide recommendations for further study. I believe that there is great opportunity to build on what I have discovered. I believe that several ideas for further research should be carried out in relation to my topic. Additionally, the findings and conclusions will be presented in a practical manner so private schools may implement the recommendations easily.

The next chapter will outline the recent literature pertinent to this study. In Chapter Two, current literature pertaining to ASD tests and autism in general will be examined. Within this chapter, the lack of research done in regards to a comprehensive

comparison of tests currently used in California will be examined. Additionally, the lack of research done in the area of qualitative research will be shown.

Chapter Two: Literature Review

After looking at the history of special education in public school, stating the problem and explaining the purpose and significance of the study, the researcher will now examine pertinent, recent literature regarding tests used to determine ASD traits in students.

Background

ASD background. More and more students all over the world are being diagnosed with autism every year (Abebe & Hailemariam, 2008; Kogan et al., 2009; Le Couteur, 2003; Livanis & Mouzakitis, 2010; Skuse, Mandy, & Scourfield, 2005; Wilkinson, 2010). The National Autism Plan stated, “Autism spectrum disorder (ASD) affects at least 60 per 10,000 children under 8 years, of whom 10 to 30 have narrowly-defined autism” (Le Couteur, 2003, p. 9). In a recent international study, experts now estimate that 2.64% of the population is autistic (Carey, 2011). Despite the apparent discrepancy of statistics, all studies reviewed have indicated a significant rise in the diagnosis of autism in the school setting. There have been great gains in knowledge over the last few years; however, both prevention and cure of ASD remain elusive (Rutter, 2011). Despite the increase of students being diagnosed, researchers have noted that there was no uniform referral process, nor single test for eligibility used within the public school system (Le Couteur, 2003). Within the private school system, there was little to no process for identification of children with autism (Stymeist, 2008). There is a vital need to identify children with autism so that they can access all resources that are available to them. Therefore, valid screening and diagnostic instruments are needed. Although some schools have tests in place for autism spectrum disorder eligibility

assessment, schools must use one valid assessment process because teachers, parents, administrators, and students deserve clear, consistent, accurate feedback.

The school system has been identified as one of the most common, helpful sources for diagnosing a student with autism (Wilkinson, 2010). The purpose of this review is to investigate which assessment tools are currently being used in the public school system. Autism diagnostic screening assessments that are selected for review will be based on popularity, available commentary, and reliability. After investigating these tools, the researcher will make a suggested plan that can most easily be implemented in private schools based on educator recommendations and the most popular test used currently in southern California public schools. This study is critical for streamlining the eligibility process while creating a uniform, clear process for testing students with ASD traits.

Private schools and ASD services. As it has been noted, private schools often lack services for special needs students (Stymeist, 2008; Taylor, 2005). This is becoming an increasing problem as students have been diagnosed with ASD and other special needs more frequently (Livanis & Mouzakitis, 2010). There are several theories as to why private schools are not adequately servicing students with ASD and other unique needs. One theory was that many Christian schools hesitate to accept students with special needs for fear of gaining a negative reputation. These schools often focus on academic excellence and fear that accepting students with special needs would bring down their test scores as well as their reputation for high academic standing (Taylor, 2005).

Additionally, finances play a significant role in the lack of accommodations being made for students with ASD in private schools. Private schools are not receiving

government funding in the same way as their public school counterparts (Taylor, 2005). Thus, money is a significant obstacle for private schools. However, the researcher believes once private schools decide to help students with ASD, fundraising options can be discussed that will assist the school in tangibly implementing programs that will help students with ASD be successful. For example, the U.S. government may need to consider moving to a voucher system to enable private schools to more fully service students of varying academic and social abilities. Other countries, such as Australia have devised several effective methods for assisting private school financing (Caldwell, 2010). Thus, funding is not an impossible hurdle to overcome. However, private schools ought to use the public school resources that they are allowed under the new IDEA law until further remedies such as vouchers or other permanent funding options are established.

Also, private schools lack the breadth of special education resources for students with ASD due to lack of qualified personnel (Pudlas, 2004). Some private schools do not require their teachers to be credentialed. Others make a valid teaching credential a requirement, but do not employ teachers who have adequate training in serving students with special needs. Research has indicated that teachers are wary to include students with ASD in their mainstream classroom for fear that they are not adequately prepared to teach such students (Gaad & Khan, 2007). Christian schools ought to actively seek out professionals who can assist them in caring for students with ASD. It is vital that professional educators be employed to assist private schools with ASD testing and accommodations.

While private schools do have noticeable difficulties, they are not without resources. Under educational laws such as Individuals with Disabilities Education Act

(IDEA) and No Child Left Behind Act of 2001 (NCLB), students attending a private school may gain access to their district's resources. This is not to say that public schools always welcome private school students with open arms. Assuredly, there is some animosity for assisting private school students since public schools do not gain money from the private school student like they would from a special needs public school student. Yet, there are still resources in public schools for private school students in need of testing and special education services. However, research suggested that private schools were not utilizing this valuable resource. Christensen et al., (2007) stated, "The vast majority of public school districts containing at least one private school within their boundaries reported providing no services to private school students under the following...programs" (xxii). They noted that while public schools are mandated to assist private schools in both resources for students within their district, as well as education for teachers at the private school, little to no private schools use this resource.

Autism Spectrum Disorders

A debate exists regarding Autism Spectrum. Some think that it is a clearly defined disorder, while others argue that it is a spectrum of undefined and varied characteristics. Skuse and Scourfield (2005) noted, "Increasing evidence supports the hypothesis that autism is a quantitative or dimensional spectrum, with no clear qualitative distinction between traits found among individuals with the disorder and the general population" (p. 571). Internationally, most agreed that there were several primary characteristics of the disorder. The terms Persuasive Developmental Disorder (PDD) and Autism Spectrum Disorder (ASD) have frequently been used interchangeably. Underneath the umbrella of PDD or ASD are five disorders that are included in the

spectrum: (a) Asperger Disorder, (b) Autistic Disorder, (c) Rett's Disorder, (d) Pervasive Developmental Disorder Not Otherwise Specified (PDDNOS), and (e) Childhood Disintegrative Disorder. For teachers and administrators, the majority of students with ASD at any given school had either Asperger Disorder or PDDNOS (Wilkinson, 2010). Both Asperger Disorder and PDDNOS have also been known as high-functioning autism. Someone with an Autism Spectrum Disorder has been defined as a person with one or more of three classic deficits: communication, repetitiveness, and language (Livanis & Mouzakitis, 2010).

Important components and limitations of autism screening tools. Since ASD is varied and somewhat unpredictable, it has been challenging to develop a universal assessment that accurately diagnoses the various categories of Autism. Until recently, most screening tools merely diagnosed Autistic Disorder, not the other spectrum categories. It has also been noted that most eligibility tests were evaluated in terms of sensitivity and specificity. Wilkinson (2010) stated, "Sensitivity is the probability that a child with ASD will screen positive. Specificity is the probability that a child without ASD will screen negative" (p. 215).

While the tests reviewed in this paper were widely used, reliable, valid tests, all screening instruments have their limitations. First, it is important to note that because humans are running the test, there is potential for error. People can make mistakes when testing and can misdiagnose students. Therefore interrater reliability and consistency between autism tests can vary (Simek & Wahlberg, 2011). Also, it is important to mention that some students who screen positive are not diagnosed with a disorder, while some children who are not identified with ASD may have one. Educators need to

monitor all students, especially ones who screen negative on an ASD eligibility assessment. It is important to track these students so they may qualify for special educational services later on, if misdiagnosed initially.

What Does The Law Say?

Multiple laws exist for the benefit of students with special needs. The three major laws that protect students with disabilities in the United States are the following: Individuals With Disabilities Education Act (IDEA), the Americans With Disabilities Act (ADA) and Section 504 of the Rehabilitation Act of 1973 (Brady, 2004). In 2004, the government passed the Individuals With Disabilities Education Act (IDEA) law. IDEA stated, “A student must meet two criteria for eligibility: (a) one or more of the classifications specifically recognized and defined in the IDEA, such as specific learning disability, autism, or other health impairment; and, (b) by reason thereof, the need for special education” (Zirkel, 2009, p.68). The Americans With Disabilities Act (ADA) instituted in 2009, works in conjunction with the IDEA law (Christensen et al., 2007). Even though Section 504 of the Rehabilitation Act of 1973 has been around for years, in light of the new ADA law, there were recent changes made that affected students and teachers. Since a lack of federal funding to educate teachers about 504’s implications exists, teachers and administrators are still trying to comprehend what changes affected them and their student populations (Brady, 2004). Indeed, “Many school leaders are belatedly learning about the direct effects of this new law, which include expanding eligibility for individual student Section 504 Plans and reinforcing regulatory overlap for students who have IEPs” (Zirkel, 2009, p. 68). It is necessary that administrators closely read and learn about the broader eligibility laws when looking at their special needs

programs.

The legal overhaul was generally good and helpful for teachers, students and parents, since it was broader and considered more students eligible for special needs services than IDEA did (Brady, 2004; Zirkel, 2009). The law specified not only eligibility requirements, but also requirements for exiting an IEP. Due to a lack of 504 training, special education teachers need to take it upon themselves to research the new laws to avoid breaking them and to properly support their students in the best way possible (Zirkel, 2009).

IDEA has many implications for private schools, as it grants permission for students to gain access to public school resources. Students with ASD and other special needs may go through testing, and other resources through their local district. The U.S. Department of Education (2008) stated, “Therefore, it (IDEA) provides benefits and services to children with disabilities in public schools and requires school districts to make services and benefits available to children with disabilities enrolled by their parents in nonpublic (private) schools” (p.1). Thus, private schools that lack the resources to adequately service students with ASD may collaborate with the local public school to gain additional testing and resources for the student (Christensen et al., 2007). However, private schools lack collaboration with their public allies. In order to more fully service students with ASD, private school administrators and teachers ought to educate themselves as to the guidelines for collaborating with public schools (Zirkel, 2009).

Special Education (SPED) Referral Process

Researchers have noted that a consistent referral process for autism eligibility testing is lacking within the public school system (Abebe & Hailemariam, 2008).

However, there were some trends within the process. For example, there were typically several key individuals responsible for the referral process. These individuals included the following: teachers, administrators, school counselors, caregivers and parents (DeBildt, A. et. al., 2009; Schopler, Reichler & Renner, 1986; Simek, 2011). Abebe & Hailemariam's (2008) recent study concluded that there were several factors such as misbehavior and trouble with homework influencing teachers and parents' decisions to refer a child for special needs testing. It is important to look at the referral process since 73% of students referred for testing ended up qualifying for special needs services (Abebe & Hailemariam, 2008).

Overall, researchers noted that poor academic achievement and misbehavior seemed to be the primary reason for referral (Abebe & Hailemariam, 2008). While research has shown that there are a variety of factors for referral (including height, weight, gender, etc.), it is important to look at the overall process from teacher referral to implementation of an Individualized Education Plan (IEP). According to the research that has been conducted, some changes such as clarity need to be made within the referral process. Abebe and Hailemariam (2008) state, "The criteria regular education teachers use to determine which students to refer for evaluation not only vary, but are also unclear. In the best interest of children, it is important to understand what leads to a teacher referral of certain students and not others" (p.2). Part of the authors' study indicates that clarity and further research ought to be carried out to determine why students sometimes get referred and sometimes do not. These authors indicate that gender, teacher competency, and geographic location of the school may have something to do with the referral process. Thus, referral steps needed to be made more clear and consistent (Abebe

& Hailemariam, 2008).

While public schools have a varied approach to the referral process (as noted in Abebe and Hailemariam study), private schools are just as diverse. Because private schools often lack the organization of a district, there seems to be even less consistency in the referral process (if a process exists). In a recent study by Taylor (2005) that researched the role of the principal in the private school special education process, the author noted that some schools have differing opinions and do not come to an agreement as to what action should be taken, whereas some schools do reach valuable conclusions in regards to students who potentially have ASD. Taylor (2005) states, "Occasionally there are differing opinions as to what the child's problems are and what action should be taken. Usually, this is worked out after much discussion" (p. 290). Taylor's study indicated that just as in public school, various schools and teachers recommend students for special education eligibility for a variety of reasons.

Which Screening Tests for Students with ASD Traits are Currently Being Widely Used in Public Schools?

Checklist for Autism Spectrum Disorder assessment. A psychologist or physician specialist who has experience with autism administers the Checklist For Autism Spectrum Disorder assessment. In the past, test administrators have used a teacher report, a parent interview, clinical observations of the child, and early history of autistic symptoms (Mayes et al., 2009). Test administrators typically have conducted a 15-20 minute interview with the student's teacher and then later with the student's parent(s). During the parent interview, the psychologist marked symptoms that were present. These symptoms may have occurred either in the past or presently. This is an

important distinction to make because research indicated that counting symptoms that were present at some point yielded more accurate results than merely counting those that appeared at the time of testing (Mayes et al., 2009). The checklist was created to provide a complete list of all symptoms of autism in order to educate families and professionals. Results seemed to be consistent and accurate for this test. Indeed, some studies indicated that 100% of children with autism that were tested with this assessment tool had 15 or more of the 30 Checklist symptoms (Mayes et al., 2009). This staggering statistic was significant and boded well for the assessment.

Some of the positive features of this test included the following: reliability, validity of results, and accuracy. Additionally, the teacher’s input was desired. Some of the drawbacks of this test included: (a) the administrator must be a psychologist or physician specialist and (b) the parents must be willing and honest in their interview. Based on one research group’s data, they deemed the Checklist for Autism Spectrum Disorder to be the most reliable test overall (see Table 2 from Mayes et al., 2009, p. 1686). Table 2 from Mayes et al. (2009) compares the Checklist, CARS and GADS tests. This table indicates what percentage of children who took the tests “tested positive” for forms of ASD. The table indicates which students were said to have Low Functioning Autism (LFA) and High Functioning Autism (HFA). Recall that HFA would be a form of ASD such as Asperger’s Syndrome.

Table 2

Percent of children scoring at or above the autism cutoff on the Checklist for Autism Spectrum Disorder, Childhood Autism Rating Scale (CARS), and Gilliam Asperger’s Disorder Scale (GADS)

| | Checklist | CARS | GADS |
|------------------|-----------|------|------|
| Clinician Scores | | | |

| | | | |
|----------------|-----|----|----|
| LFA (n=190) | 100 | 97 | 88 |
| HFA (n=190) | 99 | 75 | 92 |
| ADHD (n=76) | 0 | 0 | 4 |
| Parent Scores | | | |
| LFA (n=36) | 94 | 89 | 72 |
| HFA (n=55) | 87 | 46 | 74 |
| ADHD (n=74) | 11 | 6 | 19 |
| Typical (n=64) | 0 | 0 | 0 |

Note. LFA= Low Functioning Autism; HFA= High Functioning Autism

Childhood Autism Rating Scale (CARS). Physicians, special educators, school psychologists, speech pathologists, and audiologists can administer the Childhood Autism Rating Scale (CARS). These individuals undergo training before administering the CARS test. The training level varies based on the school district. However, most of the training for test administrators is extensive. The test administrators base their ratings on parent reports, medical records, and observations (Schopler et al., 1986). Some researchers stated that CARS had better diagnostic validity than other autism rating scales (Mayes et al., 2009). According to Mayes et al., (2009), another benefit of this test was that the CARS, "...is appropriate for children of all ages, including preschoolers" (p. 1684). The key purpose of this test was to show the difference between students with autism and children with mental retardation and no autism. Research indicated that the test did consistently differentiate between the two (Mayes et al., 2009). Therefore, the wide age group that could be tested with CARS was helpful for schools with a multitude of grades. For example, many private schools have a wide range of grades. Some begin at preschool and go through eighth grade. Thus, this test was appropriate for all grade levels, which is a highly positive feature of the assessment. It may be the most helpful feature for private schools looking to implement one test that can accurately help students

of varying ages. Indeed Mayes et al. conclude, “Our study findings are consistent with previous research demonstrating strong psychometric support for the CARS” (p. 12).

While CARS is a popular test, Gilliam Asperger’s Disorder Scale is also a common testing instrument used to determine autistic tendencies, particularly those who are indicated to have Asperger’s Disorder.

Gilliam Asperger’s Disorder Scale (GADS). The Gilliam Asperger’s Disorder Scale (GADS) is a 32-item instrument rated on a four-point scale (from never to frequently observed) for individuals three through 22 years of age (Mayes et al., 2009). The test asked the test administrator to indicate behaviors of Asperger’s Disorder across four subscales: (a) social interaction, (b) restricted patterns of behavior, (c) cognitive patterns, and (d) pragmatic skills (Campbell, 2005). The test administrator could be a parent, classroom teacher, educational diagnostician, psychological associate, psychologist or another who is familiar with the instrument. This test is extremely brief. On average, it took about five-ten minutes for a rater to complete the scale (Campbell, 2005). Because a teacher or parent may run the GADS test, it was extremely beneficial to schools that did not have a psychologist or counselor on staff. This asset would be extremely helpful for private schools that lack a qualified psychologist or counselor.

While it was beneficial that teachers could administer the GADS test, the instrument did have several drawbacks. In a recent study, a variety of test administrators (parents, teachers etc.) were asked to use the GADS on individuals that they knew already had Asperger’s disorder. The results were as follows, “Using the Asperger’s disorder quotient and the four subscale scores, discriminate analysis classified individuals with and without Asperger’s disorder with 83% accuracy” (Mayes et al., 2009, p. 1684).

Therefore, it seemed that the test was not always accurate in determining ASD traits. Additionally, Campbell (2005) notes that the GADS test has significant psychometric weaknesses. This is partially due to the fact that Asperger's disorder is still slightly undefined. Some individuals have a hard time telling the difference between a child with Autism and a child with Asperger's disorder. Since the primary difficulty found was distinguishing between autism and Asperger's syndrome, it would be best to use something simple to conduct an early screening for possible ASD and use other tests to define at what point a child was on the spectrum at a later time. Therefore, even though this test was easy to administer, it may not be a good selection for a private school to use in an eligibility process due to its difficulty in determining ASD traits.

In addition to the GADS test the Childhood Autism Spectrum Test is designed for testing students who may display difficulties or deficiencies in several areas.

The Childhood Autism Spectrum Test (CAST). The Childhood Autism Spectrum Test (CAST) was designed specifically for school-aged students. Williams et al., (2008) stated,

The CAST measures difficulties and preferences in social and communication skills covering: initiation and maintenance of conversation and specific language difficulties; social interaction with adults and peers, including eye contact; choice of play activities; presence of rigid or repetitive behaviours; choice of interests and sharing interests with others (p. 1).

The CAST has 37 items and was constructed for use as a parent-rating scale. Of the total items, 31 were key components while six were control questions (Wilkinson, 2010). This test is very popular, yet no reliability testing has been published to date. The CAST has

not been normed. Because of this, there was a lack of information about floor, ceiling, and item gradient information. Campbell (2005) offered a critique of the test, “The CAST shows strong sensitivity and specificity in discriminating between AD and non-AD; however, the CAST holds poor positive predictive validity” (p. 31). Campbell offered this critique because the test seemed to be able to differentiate between Asperger’s Disorder (AD) and non-Asperger’s Disorder (non-AD) but did not have positive validity. Still, it was recommended as a gold standard instrument for the assessment of autism screening and diagnosis (Wilkinson, 2010).

In a recent study, researchers set out to determine if the CAST yielded results with boys or girls scoring higher. The researchers of this particular study chose the CAST due to its widespread use. They found, “In a large population sample, boys scored higher than girls on measures of autistic traits” (Williams et al., 2008, p. 1738). Based on the evidence, the researchers suggested a higher prevalence of difficulties in social and communication skills in boys. In fact, the odds for boys having ASD have been four times higher than the odds for girls (Kogan et al., 2009). One interesting component of this article was their suggestion to alter autism screening tests. The researchers stated that test creators should consider having a higher cut-point for boys than girls, considering the results of the sample study. The sample used for the study was large and included a positive sample size. Test authors may want to take the cut-off point into consideration in the future and create adaptations based on sex.

Due to its pervasive use and recommendation in the public school system, this test has proven results in distinguishing children with ASD traits.

In addition to the CAST test, the Social Responsiveness Scale is appropriate for

school age children. This test is used in schools to identify the presences of autistic impairment.

Social Responsiveness Scale (SRS). The Social Responsiveness Scale is appropriate for age four-eighteen years old. It has taken approximately 10-20 minutes to complete (Wilkinson, 2010). This is a sixty-five item rating scale that teachers or parents have used to determine if autism spectrum conditions are present in a child. This test also aimed to identify the presence and extent of autistic social impairment. This is a norm-based test. Several studies have been done on samples of 1,600 children or more. The assessment consisted of five subtests: (a) Receptive, (b) Cognitive, (c) Expressive, (d) Motivational Aspects of Social Behavior, and (e) Autistic preoccupations. Because this was a quantitative test, it was easy to use in a school setting. This test would be ideal for elementary through high schools.

Even though this was an accurate assessment in many ways, its validity on toddlers and other young children has not yet been established. In a recent study, very few parents of children with autism stated that their State used the SRS as an assessment tool for toddlers (Shaw & Hatton, 2009). The SRS had a sensitivity value of 0.85 and a specificity value of 0.75 for an ASD. These scores showed that it is highly reliable. This test also had the possibility to accurately measure the severity of social impairment in all five categories of the ASD (Wilkinson, 2010). This test has generally been used as a first-level screening instrument. However, schools with preschools should avoid use of this test due to its non-established results on young children and toddlers.

Furthermore, the ASSQ test is another popular assessment and has been designed to indicate a student's conduct in relation to his or her peers.

Autism Spectrum Screening Questionnaire (ASSQ). The Autism Spectrum Screening Questionnaire (ASSQ), formally known as the Asperger Syndrome and High-Functioning Autism Questionnaire, was created to indicate a child's conduct compared to other peers (Wilkinson, 2010). This test has sometimes been called the Social Communication Questionnaire (SCQ) (Skuse et al., 2005). Additionally, it has been a screening instrument used to identify children who have High Functioning Autism (HFA). This assessment addressed problems in communication, motor clumsiness, social interaction and repetitive behavior. One of the positive features of this test was its brevity. On average, the test took about 10 minutes to complete. The rater was typically a teacher or psychologist. The rater used a three-point scale: (0- indicating symptoms are not present; 1-indicating somewhat present, and 2-indicating definitely present).

If students scored 19 or more (from parent scores) or 22 or more (from teacher scores) the test indicated that the student likely had ASD. Overall, the test has been presented as very valid (Wilkinson, 2010). Campbell (2005) acknowledged, "The ASSQ has shown good specificity in correctly identifying non-AD cases and variable sensitivity for correctly detecting AD cases for both parent and teacher forms" (p. 29).

Just as the ASSQ test was created to compare a child's conduct compared to other peers, the Social Communication Disorders Checklist has been widely reviewed and has received several positive reviews for use as an ASD screening test.

Social Communication Disorders Checklist (SCDC). This checklist has been cited by Skuse et al., (2005) as an excellent first-level screening test. The test scored highly on heritability, reliability, and validity. It should be noted that heritability helps identify the causes of differences between individuals. Heritability is concerned with

variance, so it is an account of the differences between individuals in a population. Skuse et al. (2005) commented, “The instrument compares well with existing autism screening tools” (p. 571). This tool is a 12-item questionnaire. It took a few minutes to administer and was useful in studies that intended to research autistic traits in large samples as well as clinical studies. Skuse et al. (2005) claimed, “The SCDC can be used to further our understanding of the role of sub-threshold autistic traits in behavioural difficulties and conditions such as attention-deficit hyperactivity and conduct disorders” (p. 571).

While most of the research had been positive, there were some critiques of the test. First, inter-rater reliability data were needed. Second, the test had excellent sensitivity, but had been judged by some to have low specificity (for diagnosing autism). Third, the questionnaire was sent home for parents to complete (Skuse et al., 2005). Thus, a self-rated version needed to be created for adults with autism.

Just as the SCDC is typically used for school children, some schools with very young children or preschool programs use the Modified Checklist For Autism In Toddlers to identify students with autism.

Modified Checklist for Autism in Toddlers. There are currently two opinions for testing very young children. On one hand, most educators believed it critical to identify the student at an early age since studies have shown that if autism or Aspergers is diagnosed early, there is a much greater chance of successful treatment (Kogan et al., 2009; Shaw & Hatton, 2009; Wilkinson, 2010). While on the other hand, several researchers and educators believed that students who were diagnosed too early with a disorder on the Autism Spectrum have been mislabeled. This was especially true for boys, since males have been more readily referred and diagnosed with ASD (Abebe &

Hailemariam, 2008). Little boys have often been misdiagnosed during the toddler years due to behavior and personality. Conclusions have yet to be drawn as to the validity of the two opinions. Currently, various states have implemented several assessments including the Modified Checklist for Autism in Toddlers for screening young children for Autistic tendencies (Shaw & Hatton, 2009).

While the Modified Checklist For Autism In Toddlers is for a specific age range, the Asperger Syndrome Diagnostic Scale is for older students as well.

Asperger Syndrome Diagnostic Scale (ASDS). The Asperger Syndrome Diagnostic Scale (ASDS) is a 50-item scale. This test included five subscales: (a) language, (b) social, (c) maladaptive, (d) cognitive, and (e) sensorimotor. Campbell (2005) noted, “Raters can be general education teachers, special education teachers, paraprofessionals, or parents; an appropriate rater should have two weeks of sustained contact with the individual being rated and should know the examinee well. The ASDS took approximately 10–15 minutes to complete” (p. 27).

Based on several factors, some researchers have concerns with the ASDS test. The primary weakness was the test’s inability to accurately distinguish between various disorders on the autism scale (Campbell, 2005).

While the ASDS has fifty items, the next test to be reviewed, the Krug Asperger’s Disorder Index test has only thirty-two items. This test is used to indicate a student’s potential eligibility for Special Education services.

Krug Asperger’s Disorder Index (KADI). The Krug Asperger’s Disorder Index (KADI) is a norm-referenced rating scale that consisted of 32 items. The test compiled raw scores together to yield a total standard score. This score indicated the likelihood for

a student being diagnosed with Asperger's Disorder (AD). The KADI has two groups of items. The first group is a subset of 11 items used as a primary screen for AD. If the first test did not exceed 18 raw score points, the test administrator or rater has been instructed to stop there. However, if the child being tested did exceed a score of 18 points, the test rater may then administer the second portion of the KADI test (Campbell, 2005).

Additionally, the KADI was formulated in two versions. The first was for elementary students (ages 6-11) and the second was for secondary students (ages 12-21). On average, the test took approximately five-ten minutes to complete. The KADI had been shown to be a very valid test. The original set of questions was gathered from previously published rating scales such as the Screening Instrument for Educational Planning and others. Since the test author consulted previously published tests, the questions used in the KADI have proven to be very reliable. Another benefit of this test was that teachers have been listed as appropriate raters (Campbell, 2005). Considering the research mentioned above, this may be a good test to implement as a universal test in schools.

Lastly, the ADOS test will be reviewed as an option for testing students referred for testing due to observed ASD characteristics.

Autism Diagnostic Observation Schedule (ADOS). The Autism Diagnostic Observation Schedule (ADOS) is a fairly common assessment tool. In recent years, it has become more frequently used for a variety of reasons. Akshoomoff, Corsello, and Schmidt (2006) note, "Since the ADOS became commercially available through Western Psychological Services (WPS) in 2001, it has become more familiar to practitioners and purchased widely for use within school and community settings" (p.10). However the

researchers proceed to note that not very much research has been conducted on the test in a school setting. Bildt et al. (2009) stated,

The ADOS is a semi-structured observational instrument, developed for children, adolescents, and adults... The assessment consists of various standardized situations, in which specific social, communicative, play, or stereotyped behavior is expected to be elicited. The ADOS consists of four modules, each applicable for children, adolescents, or adults of different levels of language and development. The ADOS classification includes AD and non-autism AD, and is based on the observation only (p.1466).

Therefore, ADOS is a widely used test due to the four modules specified for a variety of ages. Both elementary and high schools may use this assessment since it accounts for the developmental level and age of the child within the four modules (Akshoomoff et al., 2006).

Researchers have found the instrument to be unbiased and the test to be among the top recommended (Bildt et al., 2009). Additionally, Akshoomoff et al., (2006) have noted that it is one of the few diagnostic measures that scores direct observations of the student's interactions. The instrument takes 30 to 60 minutes to administer. It is to be administered by school employees who have received professional training. However the type of training and duration are vague in the articles noted. Within the Akshoomoff et al. (2006) study the researchers noted that the participants of their study mentioned several positive and negative features of the assessment. One important advantage noted in the study was the test elicits behaviors that might not otherwise be observed. For example the test brings out ASD traits in students that may not be commonly displayed in

a classroom setting. While one important disadvantage noted was the expense. The price of the test tends to be higher than other ASD tests (Akshoomoff et al., 2006).

Now that many of the most common assessments have been reviewed it is important to look at the literature involving the parent's role in the eligibility process.

Parent's Role

While teachers and administrators played a major role in the recommendation process, research has shown that it is critical for parents to be actively involved in the planning and implementation of the recommended services and programs (White, Macleod, Jeffes, & Atkinson, 2007; Wilkinson, 2010). Research has indicated that parents and teachers both contribute significantly to students' self-perception and self-concept (LaBarbera, 2008; Pudlas, 2004). Parents are key to the success of a student with ASD (Taylor, 2005). Additionally, most of the tests reviewed required at least partial input from a parent or caregiver for a questionnaire or survey. Parents deserve high quality, accurate information. The diagnostic process needs to be transparent to parents when possible. Also, there should be training available for parents (or caregivers) once they find out they have a child with ASD (Le Couteur, 2003).

Conclusions

It is vital that a universal plan be implemented in schools for the referral and testing of students with ASD traits (Livanis & Mouzakitis 2010). There are many types of assessments used to test students for eligibility for special needs services. However, there needs to be more consistency and ease within the process. Le Couteur (2003) advised, "An agreed written referral pathway for children with suspected ASD, both pre-school and school age, accessible to all professionals and parents; this may be the same as

for all developmental problems” (p. 12). Thus, according to Le Couteur (2003) and Livanias and Mouzakitidis (2010), a universal plan needs to be implemented in schools.

Professionals and educators must collaborate to correctly identify and assist students with characteristics of ASD. It is necessary that a simple referral process for screening and assessment be drafted and implemented. Up to 0.6% of the student population has ASD. As noted, this number is still on the rise (Abebe & Hailemariam, 2008; Kogan et al., 2009; Le Couteur, 2003; Livanis & Mouzakitidis, 2010; Skuse et al., 2005; Wilkinson, 2010). Thus, it is important that parents, teachers, administrators and researchers continue to work together to most fully support and assist these students (Wilkinson, 2010). Additionally, it is necessary that private schools emulate their public counterparts in the area of special needs and ASD (Taylor, 2005).

Many ASD tests exist and are examined in literature and yet, a gap exists. Very few authors have investigated ASD testing in private school and further, no qualitative literature has been found that describes educators’ preference of ASD testing instrument. Therefore, further study needs to be done in this area. Private schools need qualified researchers to investigate the screening process in addition to looking at what modifications and adaptations are being made for students with ASD in private schools (Stymeist, 2008; Taylor, 2005).

Based on research, there may need to be different tools used for the two genders since there may be sex differences in expression of broader autism (Wilkinson, 2010). Williams et al. (2008) noted, “We conclude that baseline sex differences must be taken into account when measuring social and communication skills in population studies” (p. 1738). More research needs to be done in this area. Test publishers ought to consider

these differences in the formation of new eligibility tests.

It should also be noted that some research has been done on minorities and English Language Learners (ELL) who take one of the aforementioned screening tests. Often these students have the most trouble being accurately classified, since they have difficulty understanding terminology during the screening process. Further research should be done for accommodating and including ELL's in the ASD testing process. This is especially true in California, where high populations of special needs students are also ELL students.

Further research may also be conducted by studying the essential differences between public and private schools. For example, researchers ought to investigate the fundamental differences between a public school teacher and a private school teacher. Also, one ought to consider additional steps that need to be taken by private educators to fully equip and accommodate students with ASD.

Additionally, further research needs to be conducted as to the cost of implementing ASD tests (and other special needs assessments). Since private schools often lack the funding that a public school has, it is necessary for researchers to clearly outline the initial and prolonged costs of Special Education services so that private schools may adequately prepare fundraising strategies before implementing costly programs that cannot be maintained.

Due to gaps found in literature, this study seeks to answer two research questions. The first question is, "Which ASD tests are currently being used in southern CA public schools?" The researcher will seek to gather a sample of the types of tests that are in use throughout the southern part of the state. The researcher desires to understand public

schools' processes for testing students with ASD. Once the public schools' process is understood, the researcher will be able to make an informed recommendation for private schools looking to implement a program for students with ASD. The second question is, "Which tests are favored by the school employees who administer them?"

Therefore, the methodology of the study will be reviewed in detail in the following chapter.

Chapter Three: Methodology

In chapter one the researcher posed the following questions about ASD tests used in public schools:

1. Which ASD tests are currently being used in southern California public schools?
2. Which tests are favored by the school employees who administer them?

The researcher hypothesized that while public schools are doing a superior job to private schools in meeting the needs of students with ASD, there needs to be a universal, preferred test used throughout school districts. Further, the researcher hypothesized that although public schools do not use a unified ASD test, and no research has been done in regards to test administrator preference, by providing an overview of the tests used throughout the state and gathering qualitative data from educators, the researcher can recommend feasible ways to address the problems at hand. While user preference should not be the only factor considered when selecting a unified ASD testing process, it should be taken into consideration. Public schools can use the data (of which tests are used, and which are preferred) to make more informed decisions and work towards a unified testing process. Moreover, the researcher hypothesized that Christian schools will be able to examine the data and recommendations from this study in order to start implementing procedures and processes for helping Christian school students with ASD.

In chapter two the researcher reviewed recent literature. The literature helped illuminate several tests that are currently in use. Additionally, the literature granted a wider understanding of autism and special needs students. The two gaps that were discovered were explained. Again, very little research has been done to determine which

test is the “best”. Furthermore, no study lists the exact tests used by each school throughout all of southern California. Therefore, this study gathered a sample of the variety of tests used throughout the southern portion of the state. In addition, the study elicited opinions from test administrators as to which test was favored.

Therefore, to test these hypotheses and to contribute to filling the gaps in literature, the researcher conducted a mixed-methods study. The aim of the study was to answer the research questions and determine which ASD tests are being used in southern California. Additionally, the study desired to discover which tests public school educators favored.

First a survey of public school employees was administered. Second, the researcher conducted qualitative interviews investigating tests administrator’s preferences in regards to ASD test instruments in order to create rich, robust data.

The researcher decided to conduct a mixed-methods study instead of a survey only (quantitative) or interview only (qualitative) study because she felt that using both the data from the interviews and from the survey would give a more accurate answer to the research questions. Also, using both methods allowed the researcher to triangulate data, and confirm trends and themes within both methods. Furthermore, if only one method, such as a survey, had been used, then the researcher would have nothing to compare it with. This is especially true since literature is lacking in this area. Qualitative data can unfold stories through data presentation in a way that a quantitative approach cannot. Without gathering data through multiple sources, triangulation is impossible, and the researcher would be unable to ensure accuracy in the findings. Therefore using a mixed-method’s approach will make the study more robust.

Research Design

As previously mentioned, after reviewing the literature, the researcher discovered two gaps. The first gap found that very little research had been done to determine which test is the “best.” Furthermore, no study listed the exact tests used by each school throughout all of California. Therefore, this study gathered a sample of the variety of tests used throughout the southern part of the state.

The second gap found no qualitative research, which had investigated the best test according to educators themselves. Teachers, administrators, psychologists, and speech therapists are the ones who implement the test on a daily basis, yet their opinions have not been elicited until now.

Survey

Therefore, a survey was created to fill these gaps with relevant, current data. The survey asked twenty questions that helped the researcher determine how schools are currently helping the special needs population as a whole, specifically those students with ASD. Also, the survey allowed for answers to open-ended questions so that the researcher could determine which ASD eligibility assessments were used in the participant’s school and which test they thought was the best.

The 20-item survey was an electronic questionnaire that could be completed on the Internet. This survey was composed of multiple choice, short-answer, check-all-that-apply, and fill in the blank questions. The variety of questions enabled respondents to take the survey quickly, while still supplying valuable information for the researcher. The researcher used a Google template as a host for the survey as well as for collecting data from the respondents. The participants initially logged onto the link and read the

consent form. They then proceeded to electronically sign the consent form and date it. Thus, all participants read about the premise of the research and all legal requirements explaining their voluntary position to take the survey.

Once the participants completed the necessary consent form, they were asked to include their name and email in the survey. Additionally, they needed to inform the researcher of their school and school district (all participants were from public schools). Further, the survey noted demographic information so that the researcher could determine the number of special needs students that attended a certain school or school district. The individuals who responded to the survey included the position that they currently held. Also, they indicated how long they have been in that position. The researcher polled this information to see how deep their knowledge of the subject was. Next, the survey asked a series of questions determining how participants discovered students with special needs at their schools. Additionally, this series of questions asked how many people at each school hold positions related to special education (Resource Specialist, Speech and Language Pathologist, Education Specialists etc.). It was important for the researcher to determine how involved each school was helping students with ASD.

After asking background questions about the school and school employees that work with students with special needs, the following questions asked participants to select which tests their school uses to determine students' eligibility who are suspected of having ASD traits. After indicating which tests were used at their school, and which order they were used in, the researcher asked which test was best (most practical to administer and most accurate). These questions were among the most important, since they directly assisted in answering one of the research questions. Furthermore, this series

of questions asked participants to list the strengths and weaknesses of the tests and of the school's approach to servicing students with special needs and ASD. This series of questions also helped to answer the question of which test educators preferred administering.

Next, some open-ended questions were asked that solicited the respondent's opinions. The questions asked for the respondent's opinion on what would be the best process for testing students who teachers think have ASD. Also, this series of questions queried the respondents to see if they had any advice to give schools looking to incorporate the use of one or more testing instruments into a new special education program. The last question was asked particularly so the researcher could offer practical recommendations for private schools looking to improve their special education program (or start one). These questions were among the most practical since they directly gave advice from expert test administrators to those educators or schools who are looking to select one quality test for their institution.

Interview

In addition to the survey, a small sample of participants was asked to take part in a brief interview. Eighty-Three percent of survey respondents stated that they would be willing to be contacted in regards to an interview. This was determined via one of the survey questions. Therefore, the researcher contacted all said respondents (43 survey participants) and received 13 positive responses. Thus, the researcher was able to interview 13 individuals. The interview was conducted either on the phone or via email. The interview only had five pertinent questions that allowed the researcher to delve

deeper into the topic being researched. More details regarding the interview participants will be discussed later in this chapter.

Sampling, Population, and Participants

Sample and population. Before inviting educators to complete the survey, the researcher tested the survey among colleagues and peers for face validity. After several peers revised the survey, the researcher sent out an email asking educators within the selected population (southern California school employees who work with ASD students and their eligibility tests) to take the survey. The email addresses were obtained via friends in public education and school principals. The survey was initially sent to 73 people that qualified to take the survey. When the researcher got a low response rate, she sent the email out to another 27 people. Thus, the total number of recipients was 100. The researcher addressed the email invitation to the participant, telling them how their email addresses were procured, then explained the purposes of the study, the population being asked to participate, and the research questions being asked within the survey. The researcher encouraged email recipients to participate, since their area of expertise was so specific and limited (there are typically only a few school psychologists or other educators who work with ASD testing instruments per school or school district). Of course, the email also informed the recipients that their participation in the study was voluntary, but greatly appreciated. The email also contained a link to the online survey and requested the participant to complete the brief survey in that manner.

The reason that the researcher opted to have the survey online was so the survey could reach a wider demographic. Since there are only a few people per district who qualify to take the survey, it was important that people who live far away from the

researcher's hometown were able to have access to the survey easily. Also, individuals today typically prefer taking a survey online when compared to a paper survey. The researcher wanted a high response rate and decided an online survey would yield more respondents. The researcher desired to have individuals with the most expertise on serving students with ASD taking the survey.

After starting to review some of the participant's responses from the first invitations (recall that the researcher sent out several rounds of emails), it was clear that the school psychologists were the ones with the most expertise on the matter. The other participants who seemed to be knowledgeable about the research questions were the speech pathologists. Therefore, those who were known to be school psychologists or speech pathologists were particularly encouraged to take the survey. Before eliciting responses for this research, the researcher was unaware that the school psychologist rather than the special day teachers (Education Specialists) were who administered the eligibility tests. These reminder emails emphasized the value of the study and the importance of the selected population in the research. This second email invitation yielded a higher response rate. Yet, the researcher wanted to be sure to have a rich pool of data to draw from. Therefore, the researcher sent out a third, and final reminder email emphasizing the deadline for response and the importance of the study. The researcher received 52 responses back in total. Therefore, the study had a completion rate of 52%. It should be noted, that some participants passed the survey link on to other colleagues, therefore the number of individuals who had access to the survey may have been higher. However, the researcher only personally sent out the invitation to 100 individuals.

The population asked to participate was southern California educators who work with students with ASD. Initially, the researcher was going to sample schools within Orange County in order to produce very local results. However, after realizing that there are only about 30 candidates who could take the survey within the districts of Orange County, the researcher decided to broaden the scope of the study.

Thus, the researcher chose to sample schools within all of southern California (Los Angeles through San Diego) in order to limit the size of her study to a manageable number of schools for the research study, while providing a large enough demographic to collect rich, quality data. Also, since the researcher lives in southern California, she has the most contacts in order to conduct further research and make the most impact with the results from the study.

The survey respondents represented fifty-four southern California public schools. Thus, the number of schools is higher than the number of respondents due to the fact that several participants indicated that they work at two schools or more throughout the year. As noted in the methodology section, elementary schools are represented by single digit codes. While high schools (Jr. or Senior) are represented by double-digit codes. It should be noted that School Q is an Intervention Center that works with one district and represents multiple schools. Also, the first time schools are listed in tables they will be listed in alphabetical order. Much of the data will be presented in a table to help clarify the generalizability of the results.

It is important to note that the participants who indicated working in a high school were less informed. The reason these participants were unable to provide as much quality information was their students were typically “diagnosed” much earlier than high

school. Therefore, the educators who indicated working at an elementary or middle school normally had more valuable information.

Table A

Name of School Where Employed

| Name of School Where Employed | Number of Respondents Who Indicated School Name |
|----------------------------------|---|
|----------------------------------|---|

| | |
|------------|---|
| School A | 2 |
| School BB | 1 |
| School C | 1 |
| School DD | 1 |
| School EE | 1 |
| School F | 1 |
| School G | 1 |
| School HH | 1 |
| School I | 1 |
| School JJ | 1 |
| School L | 1 |
| School M | 2 |
| School N | 4 |
| School O | 1 |
| School PP | 3 |
| School Q | 1 |
| School RR | 1 |
| School S | 1 |
| School T | 1 |
| School U | 2 |
| School V | 1 |
| School WW | 1 |
| School XX | 3 |
| School Y | 1 |
| School Z | 1 |
| School A1 | 1 |
| School B1 | 1 |
| School CC1 | 3 |
| School DD1 | 5 |
| School EE1 | 2 |
| School F1 | 2 |
| School G1 | 1 |
| School H1 | 1 |
| School J1 | 1 |

| | |
|--------------------------|-----------|
| Blank (opted not to say) | 2 |
| Grand Total: | 54 |

Note. Elementary schools are represented by single digit codes. While high schools (Jr. or Senior) are double-digit codes. School Q is an Intervention Center that works with one district and represents multiple schools. Some respondents work at multiple schools.

The schools represented by this survey had populations varying from 380-4800 students. Table B indicates the name of the school and the number that the participants listed as their approximate school enrollment.

Table B

Approximate School Enrollment

| Name of School | Approximate School Enrollment |
|----------------|-------------------------------|
| School A | 750 |
| School A | 725 |
| School BB | 1300 |
| School C | 700 |
| School DD | 950 |
| School EE | 2600 |
| School F | 710 |
| School HH | 1200 |
| School I | 500 |
| School H1 | 600 |
| School J1 | 300 |
| School JJ | 1000 |
| School L | 4800 |
| School M | 1000 |
| School M | 1000 |
| School N | 500-600 |
| School N | 550 |
| School N | 900 |
| School O | 600 |
| School PP | 588 |
| School PP | 800 |
| School PP | 1200 |
| School RR | 1800 |
| School S | 500 |
| School T | 380 |

| | |
|------------|------|
| School U | 600 |
| School U | 600 |
| School WW | 450 |
| School XX | 3500 |
| School XX | 2800 |
| School XX | 3500 |
| School Z | 500 |
| School A1 | 550 |
| School B1 | 500 |
| School CC1 | 971 |
| School CC1 | 975 |
| School CC1 | 1000 |
| School DD1 | 2400 |
| School DD1 | 3500 |
| School DD1 | 2400 |
| School DD1 | 2400 |
| School DD1 | 2450 |
| School EE1 | 2000 |
| School EE1 | 2100 |
| School F1 | 700 |
| School G1 | 500 |

Note. This was an estimate from respondents, thus it should be noted that the numbers vary depending on the respondent. Two respondents from the same school may give varied responses.

The School districts listed in this study were all from southern California and included: Cypress, Irvine Unified School District, Tustin Unified, Santa Ana Unified, School L, Norwalk-La Mirada USD, Capistrano Unified, East Whittier, Buena Park, Brea Olinda Unified, Glendora, NMUSD, Orange Unified, Fullerton Join Union High School district, Bellflower Unified, Alvord Unified, Cajon Valley Union, Lowell Join School District, ABC Unified, Fullerton. Thus, the survey respondents represented 20 school districts.

Participants were also asked to estimate and indicate their school's percentage of students who are diagnosed with ASD. Table C indicates the school correlating with the percentage that the respondents indicated. Some schools represented in this study were

noted by participants to have less than 1% of students with ASD, while others noted as much as 40% of their student population having ASD.

Table C

Percentage of Students with ASD at School

| School Name | Percentage |
|-------------|------------|
| School A | 2% |
| School N | 35% |
| School B1 | 1% |
| School DD1 | 1% |
| School A | 2% |
| School T | 23% |
| School RR | 40% |
| School L | 2% |
| School PP | 1% |
| School F1 | 5% |
| School Y | 2%-3% |
| School PP | 1% |
| School HH | 2% |
| School M | 3% |
| School U | 1% |
| School U | 1% |
| School DD | 2% |
| School DD1 | 8% |
| School DD1 | <1% |
| School Q | 50% |
| School DD1 | 5% |
| School CC1 | 1% |
| School EE1 | 3% |
| School N | 5% |
| School N | 5% |
| School A1 | 5% |
| School H1 | 30% |
| School J1 | 30% |
| School JJ | 30% |
| School XX | <1% |
| School Z | 5% |

| | |
|------------|--------|
| School DD1 | 1% |
| School EE1 | 1% |
| School CC1 | <1% |
| School XX | 3% |
| School V | 8% |
| School F | 5%-8% |
| School M | 2% |
| School XX | 1% |
| School CC1 | 6% |
| School PP | 5% |
| School WW | 10% |
| School C | 8%-10% |
| School G1 | 1% |
| School S | 3% |
| School N | 3% |
| School O | 2% |
| School I | 2% |
| School BB | 15% |

Note. Percentages above are estimate percentages, since respondents indicate their guess of students with ASD at their school site.

Survey participants. Participants of the study were selected based on their position at the school and their knowledge of ASD testing instruments. Respondents were required to be educators in a southern California public school who worked with students with autism. The researcher decided to limit the respondents to public school employees since prior literature indicated that private schools did not have as many resources or interaction with special needs programs. Therefore, only public school educators were asked to participate since they are vastly ahead of the private schools in regards to testing students with ASD characteristics.

The following table indicates the position that the respondents wrote and the amount and percentage of respondents that indicated such a position. As was mentioned previously, it was realized that speech pathologists and school psychologists had more

thorough responses, and were highly encouraged to participate during the second round of email invitations.

Educators indicated that they were from a variety of positions at their school: Education Specialist, School Psychologist, School Counselor, General Education Teacher, Speech Pathologist, Resource Teacher. The rationale in having such a diverse sample of job titles, is that a variety of people take part of ASD testing. Depending on the district, educators with different job titles administer ASD tests. However, as it was mentioned previously, delineations in sampling were made after realizing that school psychologists were able to answer the online survey questions more fully and accurately in most cases.

Most of the survey participants were teachers, speech language pathologists and special education teachers. As previously noted, many schools share a school psychologist. The number of psychologists in the districts sampled was less than any other title.

Table D

School Position

| Position: | Count | Percentage |
|---|-------|------------|
| Administrator | 2 | 3.8% |
| Behavior Tutor | 1 | 1.9% |
| Instructional Aide SDC/MM | 2 | 3.8% |
| Kindergarten Teacher | 1 | 1.9% |
| Mild/Moderate Specialist | 1 | 1.9% |
| Mod/ Severe Special Education Teacher | 1 | 1.9% |
| RSP teacher | 1 | 1.9% |
| RTI Instructor | 1 | 1.9% |
| School Psychologist | 5 | 9.6% |
| SDC/Resource teacher | 1 | 1.9% |
| Special Day Class Teacher (K-2, K, K-8) | 4 | 7.6% |
| Special Education Teacher | 7 | 13.4% |

| | | |
|------------------------------|----|-------|
| Speech/Language Pathologist | 9 | 17.3% |
| Teacher | 14 | 26.9% |
| Teacher, Case Manager, Coach | 1 | 1.9% |
| Teaching Assistant Principal | 1 | 1.9% |
| Grand Total | 52 | - |

Note. The position names are exactly what the respondents wrote as their own title. All participants listed their title and answered this question.

Participants noted how long they had held their current school positions (listed in Table D) on the survey. According to the survey respondents, they have held their current positions from 2 months to 33 years. The average number of years held (at their current position) was 8.59, while the average number of months at their current position was 103.11.

The participants from the survey also indicated how many people at their school held various positions such as school psychologist, special education teacher etc. Table E below summarizes the data. This table makes it clear how many more special education teachers there are within schools rather than school psychologists.

Table E

Number of Position Titles at Schools

| Name of School Where Employed | Resource Specialist | Reading Specialist | Speech and Language Specialist | School Psychologist | Special Education Teachers |
|-------------------------------|---------------------|--------------------|--------------------------------|---------------------|----------------------------|
| School A | 1 | 1 | 1 | 1 | 2 |
| School N | 1 | 1 | 2 | 1 | 2 |
| School B1 | 1 | | 1 | 1 | 2 |
| School DD1 | 5 or more | 1 | 1 | 1 | 5 or more |
| School A | 1 | | 1 | 1 | 2 |
| School T | 1 | 1 | 1 | 1 | 2 |
| School RR | 5 or more | | 2 | 1 | 5 or more |
| School L | 5 or more | | 5 or more | 5 or more | 5 or more |

| | | | | | |
|------------|-----------|-----------|---|---|-----------|
| School PP | 2 | 1 | | | 3 |
| School F1 | 1 | | 2 | 1 | 2 |
| School Y | 1 | 1 | 1 | 1 | 1 |
| School PP | 1 | | 1 | 1 | 4 |
| School HH | 1 | | 1 | 3 | 4 |
| School M | 1 | | 2 | 1 | 5 or more |
| School U | 1 | | 1 | 1 | 2 |
| School U | 1 | | 1 | 1 | 2 |
| School F1 | 1 | | 2 | 1 | 2 |
| School DD | 2 | | 2 | 2 | 3 |
| School DD1 | 4 | | 1 | 1 | 4 |
| School DD1 | 1 | | 1 | 1 | 1 |
| School DD1 | 4 | | 1 | 1 | 2 |
| School Q | 1 | 1 | 3 | 2 | 5 or more |
| School DD1 | 4 | 5 or more | 2 | 1 | 4 |
| School CC1 | 3 | 5 or more | 1 | 1 | 4 |
| School EE1 | 1 | 2 | 1 | 1 | 5 or more |
| School N | 1 | 1 | 1 | 1 | 2 |
| School N | 1 | | 1 | 1 | 4 |
| School N | 1 | 1 | 1 | 1 | 2 |
| School A1 | 1 | | 1 | 1 | 5 or more |
| School H1 | 1 | | 2 | 1 | 3 |
| School JJ | 1 | | 2 | 1 | 3 |
| School J1 | 1 | | 2 | 1 | 3 |
| School XX | 5 or more | 1 | 1 | 2 | 5 or more |
| School Z | 1 | 1 | 1 | 1 | 3 |
| School DD1 | 1 | | 1 | 1 | 3 |
| School EE1 | 2 | | 1 | 1 | 5 or more |
| School CC1 | 2 | | 1 | 1 | 2 |
| School XX | 5 or more | 1 | 1 | 2 | 5 or more |
| School V | 1 | | 1 | | 4 |
| School F | 1 | | 3 | 2 | 5 or more |
| School M | 3 | | 3 | 1 | 5 or more |
| School EE | 5 or more | 4 | 1 | 1 | 5 or more |
| School XX | 5 or more | | 1 | 1 | 5 or more |
| School CC1 | 2 | | 1 | 1 | 2 |
| School PP | 1 | 2 | 1 | 1 | 3 |
| School WW | 1 | | 1 | 1 | 2 |
| School C | 1 | 1 | 1 | 1 | 2 |
| School G1 | 2 | 2 | 3 | 2 | 5 or more |
| School S | 1 | 5 or more | 1 | 1 | 2 |
| School N | 1 | 1 | 1 | 1 | |
| School O | 1 | | 1 | 1 | 4 |

| | | | | | |
|-----------|---|---|---|---|-----------|
| School I | 1 | | 1 | 1 | |
| School BB | 4 | 1 | 1 | 1 | 4 |
| School G | 1 | 1 | 1 | 1 | 5 or more |

Note. Variation in response may be due school size, demographic, funds and population.

Interview participants. This study was a mixed-methods study. Therefore, in addition to the survey, several interviews were completed. Individuals who presented a thorough knowledge of ASD testing in their survey responses were asked to participate in a brief interview as well. These participants were selected based on if they clicked “yes” or “no” on the survey in regards to being contacted to participate in an interview. The participants responded as follows: 83% of people responded “Yes,” while 17% of people responded “No.”

The researcher only selected 13 participants to be a part of the interview process. These participants were from various districts in southern California and all had vast knowledge to contribute to the study. The researcher sent an email to the participants and said the following,

On the survey, you indicated that you would be ok with being contacted for a brief interview. If you wouldn't mind answering a few questions below, it would enhance my research and would help me understand more about your specialty. If you decide to answer the questions, please simply fill them in and email them back to me. Thank you again for your time and commitment to helping students with Autism Spectrum Disorder (ASD)!

The following email included five pertinent questions:

1. Experts now estimate (summer 2011) that 2.64% of students have ASD. This is a significant increase from past data. Would you agree with this figure based

on students you have seen at your school? Do you think it is higher or lower?

Why do you think this number continues to rise?

2. At your school, which type of ASD do you see most frequently (PDD-NOS, Asperger Syndrome, etc.)?

3. As a specialist, do you collaborate with others in your district who work with students with ASD? If yes, how so?

4. If you ran your own school, how would you “discover” students with ASD and how would you help them (special day class, mainstream, testing etc.)?

5. For my thesis I’m trying to answer the following two questions. If you have any advice or input, please comment on them.

a. “Which ASD tests are currently being used in southern CA public schools?”

b. “Which tests are favored by the school employees who use them?”

Participants’ responses were received via email. These responses were kept on the researcher’s computer. The responses were coded using Creswell’s Six Step Plan (2006). Each participant’s reply was kept in full confidentiality. All interview responses will be deleted after one year for the protection of the participants.

As mentioned, to code the data properly, Creswell’s Six Step Plan (2006) was used and is outlined below. Step 1: Organize and prepare the data for analysis. During this step I transcribed interviews. I committed to transcribing directly after the interview was received in order to preserve as much of the interview qualities as possible. During this step I also sorted data into different types depending on the source. Step 2: Read through all the data. During this step I read through the transcriptions and gleaned a

general sense of the information. I asked myself several questions. For example: (a) What general ideas are participants saying? (b) What is the tone of the idea? Step 3: Begin a detailed analysis with the coding process. I created my own organizational patterns during this step. I “chunked” the material and then brought meaning to those sections of data. At this point in the coding process it was important to remember to read the transcriptions carefully and write down all thoughts in the margins of the documents.

Step 4: Use the coding process to generate a description of the setting or people as well as categories or themes for analysis. During this step, I generated codes for description. Step 5: Identify how the description and themes will be represented in the qualitative narrative. This step included finding the themes and creating a chronology of events, vignettes etc. I also identified the narrative by discussing interconnecting themes that were appearing throughout the transcriptions. Step 6: Make an interpretation or meaning of the data. Upon arriving at this step, I carefully reviewed the data and coded the transcriptions. Now I decided which lessons were learned. I also suggested new questions to be asked as well as deciding if the findings confirmed past information or diverged from it. I was careful to use rich, thick description in my analysis and took any bias into consideration.

Data Collection

The instrument that was used to collect data was an online survey as well as an email interview. The data of the surveys was collected through an online tool that Google offers. Google uses “forms” to help researchers created online surveys and then pool the data into one easy-to-read spreadsheet. Google allowed me to design my own survey and collect the responses through the Internet. Participants submitted their

answers to their survey questions online (both multiple choice questions and open-ended questions). The software allowed the researcher to see the live form and monitor the progress of the respondents. Thus, participants who had not yet responded were reminded to participate via email. The survey also included a question that indicated if the respondent wished to be contacted for a brief interview.

The researcher reviewed the data collected from the online survey after data collection was complete. The information from the survey was statistically analyzed. Results from this data are further discussed in Chapter Four: Data Analysis.

Participants who responded positively to the interview were contacted by email. The interviews were recorded and the data was coded to help the researcher view trends and common answers in the data. Creswell's Six Step Plan was utilized in order to help the researcher accurately look at trends in the responses of the interviewees.

Validity and Reliability

The study elicited opinions. Thus, the results may not have a clear "winner." If there were little overlap in opinion for the best ASD testing instrument, the result would not have been as reliable. However, the results of this study did indicate a clear "winner"- the CARS test. Since the researcher noted that some survey questions were subjective and stated that the survey yielded data for a recommended "best" ASD test, the potentially low reliability did not discredit the study. The researcher also drew the distinction that the results were merely correlated.

When crafting interview protocols and survey questions, the researcher had to be careful to construct questions that were valid. These questions needed to test the overall

goal of the research, not tangential items. The researcher is confident that the study had validity.

To ensure reliability and validity the researcher triangulated research with the results of the survey, and coded interview transcriptions. Additionally, the researcher asked an external auditor to review the findings to check for bias. Any negative information was noted in order to be clear and forthright. While the research was being conducted over a short length of time (one semester) it is important to note that an appropriate sample and population size were collected in order to make the study reliable and statistically significant.

Limitations of Data Collection

While the tests reviewed in the study were widely used, reliable, valid tests, all screening instruments have their limitations. Thus, while the researcher attempted to determine the most accurate, user-friendly test, it is important to note the limitations of the assessments themselves. First it is important to note that since humans are administering the diagnostic assessments, there is potential for error. Each test administrator has bias and opinions that can influence the validity of the testing instrument. Also, it is important to note that certain students who screen positive are not diagnosed with a disorder, while some children who are not identified with ASD may have one.

Additionally, some of the tests mentioned in this study need to be more widely reviewed in a school setting. Many of the tests are norm-referenced, but all of the tests need to be revised and updated depending on researcher's results regarding validity, reliability and the ability to decipher which part of the autism spectrum the student most

closely fits. For example, some tests in the study are better than others at deciphering which ASD trait a student may have as noted in the literature reviewed.

In addition to the tests themselves having limitations, the study also encountered various limitations. Due to cost and time restraints, the sample size was somewhat small. Additionally, as previously mentioned, there were an extremely limited number of educators who were able to answer the questions presented in both the survey and the interview. The respondents were from varied school districts and offered a representation of educators in the southern region of the state who currently hold similar positions. However, since the study's sample was small, it may or may not have been an accurate representation of all southern California educators.

Also, since the researcher was eliciting opinions, the study was somewhat subjective. The "best" ASD testing instrument was determined based on the opinions of the participants of the study and based on prior tests and research done on the assessments themselves. Even though the final answer to the second research question (Which tests are favored by the school employees who administer them?) was subjective, the results are still valuable to both public and private schools for making an informed choice when selecting an ASD testing instrument. Additionally, the research may help to unify the entire ASD testing process to make it more streamlined, accurate and fair for students with ASD.

When interacting with students of special needs, or educators of students with special needs, it is vital to remember that these students need to be treated with respect and sensitivity. While participants were unlikely to experience any physical, psychological, or social risks, it was important to give participants the option to withdraw

or skip questions they felt uncomfortable with. Additionally, when crafting survey and interview questions, the researcher used tact and sensitivity when formulating questions. Indeed, when a respondent commented that the wording to question six was worded incorrectly, the researcher took the comment under advisement and edited the question to be more sensitive to future respondents taking the survey. Therefore, question six was altered for the remainder of the study.

In the next chapter, Chapter Four: Data Analysis, the results of the study will be presented. The coded results of both the survey and the interviews will be shown in text and tables. In order to retain the confidentiality of the participating schools, elementary schools are represented by single digit codes, while high schools (Jr. or Senior) are represented by double-digit codes. All schools represented in the survey were located between San Diego and Los Angeles. The survey data will be presented in thematic narrative that tells the story of the participant's responses.

Chapter Four: Data Analysis

After discussing the methodology for the study, the researcher will now present the data. The data was analyzed and coded into themes. Thus, both quantitative and qualitative data will be presented in a thematic narrative.

Discovering Students with ASD

There are several processes for discovering students with ASD. When survey respondents were asked about their school’s process they mostly selected: teacher recommendation, school entry assessment, parent interview, cumulative file review and other processes. Table F summarizes which schools participate in the various processes. Teacher recommendation was the most frequently selected process.

Table F

Methods for Discovering Students with Special Needs

| School Name | Teacher Recommendation | School Entry Assessment | Parent Interview | Cumulative File Interview | Other |
|-------------|------------------------|-------------------------|------------------|---------------------------|--|
| School A | X | | | | |
| School N | X | X | | | Observation |
| School B1 | X | X | X | X | |
| School DD1 | X | X | X | X | |
| School A | X | X | X | X | Observation Psycho-educational assessment with SLP & SPED |
| School T | | X | X | X | teacher Psych. evaluation |
| School RR | | | | | |
| School L | X | X | X | X | |
| School PP | | | X | X | |
| School F1 | | X | | X | |

| | | | | | | |
|---------------------------------------|---|---|---|---|---|--|
| School Y | X | X | X | X | | |
| | X | X | X | X | | CAPPS- official process for testing students for disorders. |
| School PP | | | | | X | Parent Request For Testing |
| School HH | X | X | X | X | X | RTI, Student Study Team |
| School M | | | | | | |
| School U | X | X | X | X | X | |
| School U | X | X | X | X | X | |
| School F1 | | | | | X | |
| School DD | | | | | | IEP |
| School DD1 | X | | | | | Parent Request |
| School DD1 | | X | X | X | X | Transition Meetings |
| School Q | X | X | | | | |
| School DD1 | X | X | X | X | X | |
| School CC1 | X | X | | | X | |
| School EE1 | X | X | | | X | |
| | X | X | X | X | X | Student Study Teams, Ongoing Data Collection & Observation s |
| School N | | | | | | |
| School N | X | | | | X | Assess prior to 3 years. |
| | X | | | | | |
| School A1 | | | | | | |
| School H1, School J1, School JJ | X | X | X | X | X | |
| School XX | X | X | X | X | X | |
| School Z | X | | X | X | | |
| School DD1 | X | | X | X | X | Psychoeduc ational |

| | | | | | |
|------------|---|---|---|---|--|
| | X | X | X | X | assessment Students are identified by HS age. |
| School EE1 | | | | | |
| School CC1 | X | | X | X | Student Study Team |
| School XX | X | X | X | X | X Referral from district SPED department. |
| School V | | | | | |
| School F | X | X | X | X | Student Study Team |
| School M | X | | | X | |
| School EE | X | X | X | X | Student Study Team |
| School XX | X | X | X | X | |
| School CC1 | X | | X | X | |
| | X | | | | General Educations Do Referrals Universal Screening |
| School PP | | | | | |
| School WW | X | X | | X | |
| School C | X | X | X | X | |
| School G1 | X | X | X | | |
| School S | X | | | X | |
| | X | | X | X | Referral from SPED preschool in Irvine |
| School N | | | | | |
| School O | X | | | X | |
| School I | X | X | X | X | |
| School BB | | X | | | |
| School G | X | X | X | X | |

Note. Variation in response may be due to variations of school position title and knowledge.

Survey participants were asked to indicate if they felt their school had a system in place for adequately discovering students with ASD. In response to this question, 84.6% of respondents said yes, while 15.4% said “no.” Thus, since many of the participants felt

that their school was appropriately discovering students with ASD, it is important to look at the processes used so that other schools may emulate these processes. Within the survey responses and the interview data, there were two broad themes for discovering students with ASD: Human Processes and Testing Processes. Therefore, we will look at the data in this way.

Human processes.

Informal testing and observations. Several respondents warned schools looking to discover students with ASD to be careful not to rely too much on test score data. For example, one respondent wrote,

Formal testing does not often identify high functioning students. Look beyond the score and look at responses provided by informants completing the questionnaires. Observe the student in multiple settings and complete a thorough student interview that incorporates informal measures of theory of mind, conversational skills, and social cognition.

Another respondent noted,

Be aware that students with ASD may score well on several of the tests out there which claim to test social skills. This is attributed to the idea that students with ASD may know WHAT to say in certain social situations, but when actually faced with the situation, do NOT put that knowledge to USE.

When asked about the processes used to discover students with ASD, seven schools noted that their school includes informal testing within their ASD testing process. Respondents made note that multiple observations ought to be done by the school

psychologist and speech pathologist in various settings such as the classroom and playground.

Teacher referrals. Many participants thought that discovering students with ASD should start with a teacher referral. Respondents noted that general education teachers typically spend the most time with students and are well equipped to note if ASD tendencies are present in a student. The method in which teachers refer students varied from school to school. However, most respondents and interviewees noted that teachers at their school complete a form that is then sent to the school office or school psychologist. A teacher referral is frequently the initial step for discovering students with ASD traits.

Testing processes.

Current tests used at schools. Survey participants were asked to indicate which tests their schools use in the eligibility testing process for students thought to have ASD traits. There were 52 respondents who answered this question. However, these respondents only represented 34 schools (two were unnamed). Therefore, the researcher consolidated respondent data into the same school. The percentages that follow represent the school's responses.

For the Childhood Autism Rating Scale (CARS), 85.29% of surveyed schools use this test. For the Gilliam Asperger's Disorder Scale (GADS), 61.76% of schools use this test. For the Childhood Autism Spectrum Test (CAST), 23.53% of schools use this test. For the Social Responsiveness Scale (SRS), 20.59% of schools use this test. For the Autism Spectrum Screening Questionnaire (ASSQ), 29.41% of schools use this test. For the Social Communication Disorders Checklist (SCDC), 14.71% of schools use this test.

For the Modified Checklist For Autism In Toddlers, 5.88% of schools use this test. For the Asperger Syndrome Diagnostic Scale (ASDS), 44.12% of schools use this test. For the Krug Asperger's Disorder Index (KADI), 0% of schools use this test.

For the "Other" category the following comments were listed: One respondent said, "The speech therapist does theory of mind social stories and such but they're subjective mostly observations, student interviews." Another noted, "Our psychologist has many assessments available to her." Additionally, one respondent mentioned, "Informal measures of theory of mind observations play assessments, ADOS, parent interview social-emotional developmental history."

For the "Other" category the following tests were listed: GARS, ADI-R, Social Communication Questionnaire (SCQ) Lifetime, Social Language Development Test – Elementary, Gilliam Autism Rating Scale (GARS) (two schools put this), Pragmatic Profile/CASL, ADOS (six schools put this), Conners Behavior Rating Scales (CBRS), Conners Rating Scales - Revised (CRS - R).

It was surprising to the researcher how many respondents listed the ADOS test. The ADOS is a fairly new test for school usage. However, it seems that many southern California schools have quickly started using this test as a staple for testing students with ASD traits. Indeed, as is noted later in the study, the ADOS is among the favored tests that participants used.

Interviewees noted which tests are currently being used in their southern California schools as well. The interview data corresponded well with the survey responses. Interviewee A states, "CARS, ADOS, ASDS, and informal measures" are used, while Interviewee G notes,

We are using standardized pragmatics tests more and more in addition to questionnaires and interview. Our "go to" test is the ADOS. The psychologists tend to use the GARS and CARS.

Interviewee L mentions, "The ASD tests we use at our school are the Conners Rating Scales - Revised and the Childhood Autism Rating Scale (CARS)." Next, Interviewee O states,

Our district uses the Gilliam Autism Scale, the Gilliam Asberger Disorder Scale, the Asberger Syndrome Diagnoses Scale, along with the WISC 4 and various behavioral tests such as the Connor's, and classroom observation and teacher rating scales. Speech and Language uses other tests unique to them. The special education teachers use the WJIII and anecdotal records from teachers. Some of the lower functioning students have been assessed by Regional Center and or Provident Speech and Language Center. It is up to the district to dictate what assessments we use.

As you can see both the survey responses as well as the interview data note similar trends in which tests are currently used in southern California public schools.

Testing processes described. Survey respondents and interviewees were asked to describe and arrange the processes in which tests are administered at the respondent's school to determine if a student has an ASD disorder. The responses to this question were extremely varied. However, several themes did emerge.

Unsure. Ten respondents were unsure of the order in which their school administers the tests. All of these respondents were not psychologists or speech

pathologist and typically mentioned only seeing the results of the test, not the order in which they were given.

Additionally, six schools noted that there is no specific order or set criteria for which protocol their school will use.

Five schools noted that they do not do testing at their school site. These were all Jr. or Sr. High schools. Each noted that by the time the student gets to that age level, they are typically previously identified (in elementary or preschool).

Multiple tests. Several respondents noted that their school uses multiple tests to determine if a student has ASD and recommended using a variety of resources before coming to a conclusion. This included having more than one instrument so extra evidence and support can be generated. One respondent wrote, “Have at least two assessments and 2 or more staff observations documents on students demonstrated behavior, include the family with all the documentation.” Another respondent’s school used ASAQ/SCDC, while another used CARS/SRS. Another respondent noted that he stopped using the GADS test due to some research stating it was not an adequate assessment. Another school agreed, noting that they typically use “more specific behavior rating scales, such as GARS or ASDS.”

School B’s respondent noted the following,

I typically use the ASDS, adaptive rating scales (ABAS), BASC-2 and sometimes the BES-3. It really depends on how well I know the student, behaviors observed etc. I always use the ASDS but the other measures are not set in stone. I have also used self created interviews, Sally Ann (dolls used to test perspective taking).

Three other respondents noted a similar trend in that they differentiate the order of the tests based on the student. School A's respondent said, "CARS is used for all grades and the ASDS if the student is older and Aspergers is suspected."

Two respondents noted that their schools use multiple tests at the same time. One noted that the tests are not given in any order, but they use ADOS and CARS mainly. While School W's respondent said, "We usually use at least 2 simultaneously. Parents complete 2 and teacher(s) complete the same 2 questionnaires. Most often we use the CARS, GARS, and GADS." One respondent stated, "ADOS is administered along with rating scales to support findings such as CARS, SRS, GADS, ASDS, CBRS."

One test used. Three survey respondents noted that only one assessment is used on each student. The test that was used varied depending on the school.

Mixed methods. Several schools used multiple methods. For example, School EE's respondent noted the following process from her school, "(1) student interview, play assessment; (2) informal measures of: theory of mind measures, narrative skills, conversational skills, social cognition; (3) parent interview; (4) observations (playground, lunch tables, classroom, sometimes in the community); (5) ASDS completed by teacher and parent; (6) I complete CARS and if needed ADOS."

Several respondents noted that their school uses a student study team to determine the testing process. One respondent explains the process for the student study team (SST),

If a student is suspected of being on the spectrum, they are initially brought to the student study team. After taking a very complete educational and medical history, interventions from the team are given to the classroom teacher and family to see if

this makes a difference in the student accessing the curriculum. If not, there is an assessment plan signed at the next meeting.

At School T the respondent explains their process,

Our school psychologist and resource specialist work together to test the student after a SST meeting has taken place and it has been determined the testing is needed...Once they have been tested, we have an IEP/ 504 meeting to discuss the results.

One school used a different process depending on the student as indicated by the survey respondent,

If the student is verbal we attempt to give the CARS and then the ADOS. After the results on the ADOS, we may give the GADS. Usually observation first then Reciprocal Interview, Pragmatic Section of CASL, Pragmatic Profile from CELF-4, tests in about the same order as listed.

Tests favored by survey and interview participants. Participants were asked to describe which test they felt was best (most practical to administer and most accurate) and why they preferred this assessment to others that were used. Eight survey respondents chose the CARS test as their favorite assessment. These respondents used terms such as, “practical,” “user-friendly,” “straight-forward,” and “simple” to describe the test. Two respondents chose the GARS test as their preferred test. Some said it was “short” and “most comprehensive.” Three participants chose the GADS as the test they most prefer. However, one respondent strongly opposed this test saying it was her least favorite. Four participants selected the ASDS assessment using terms such as “easily understood” and “comprehensive” to describe it. Four participants selected the ADOS

test since it “assesses multiple areas of functioning.” One participant selected SRS since it was “accurate.” Three participants stated that their favorite assessments were interviews or observations since they “give you a complete picture of a student in context.” Six participants indicated that they did not have a favorite due to reasons such as “They did not like any of the tests” and, “They preferred basing testing on individual students.” These respondents used terms such as the tests are: “too lengthy,” “inconvenient,” and “too subjective.”

In order to triangulate data, the interviewees were asked a similar question. Thus, the ASD tests that were most favored by the interviewees are: CARS, ASDS, ADOS and informal measures. This order correlates well with the data that the survey respondents noted.

Some interviewees indicated the type of test preferred. For example Interviewee C states, “The instruments preferred are those that are standardized...and those with diagnostics which can be applied directly or indirectly to goal development and program design for the student.” Also, Interviewee N states, “As a teacher that has to complete the surveys, I like the quick and easy ones, but I'm sure the more detailed surveys must give more information.”

Retesting. There were several themes that emerged when respondents were asked, “Once a student's test shows qualifications for autistic characteristics (ASD) how often are they retested at your school? Please describe the process of retesting.”

Triennial evaluation. The most common frequency of retesting was “Three years” (also termed a Triennial Evaluation). There were thirty-three respondents who

noted this as their school's frequency for retesting students who are diagnosed with ASD. This represents 63% of the survey respondents. One respondent clarifies stating,

Students are re-evaluated every three years to determine if they continue to qualify for special education services. As Autism Spectrum Disorder is a lifelong disability, the student will qualify for services throughout their years in public education (K-12). The tri serves to provide information about overall growth and areas for intervention.

Another respondent produced a similar explanation,

Once a student qualifies for SpEd services under the exceptionality of Autism, they will still have a Triennial (Tri) review every three years. During a Tri the student is tested with an academic test (we use the Woodcock Johnson III) by the SpEd teacher and an IQ test by the psychologist. Wherever a discrepancy is found between ability and achievement, that is where a goal will be written. We generally won't give any of the Autism rating scales again unless asked for by a parent. The reason for this is because once a student qualifies for SpEd services because of Autism, the qualification never goes away.

Another respondent explains, "Students are then formally reevaluated at least once every three years. Testing process is similar to initial identification, although focused more on current social/emotional/behavioral/communication needs (for goal setting and progress monitoring)." As you can see, the triennial evaluation is a common occurrence within many schools once a student is qualified as having ASD.

Yearly. Five schools indicated that their school tests students every year on an informal basis. Respondents noted that usually this is in addition to three year testing.

One respondent explains, “Annually for IEP: Case carrier assesses progress through various educational assessments and behavior rating scales and conversations with teachers. For the Tri, the psychologist provides the assessment.” Therefore, several schools conduct annual, informal testing for students who qualify for ASD.

Rarely. Two respondents stated that their school rarely retests students. One stated, “Once they qualify for special education under Autism or ASD, they are rarely or never reassessed.” This occurs because once a student is diagnosed with ASD, the qualification never goes away.

Every six months. One respondent stated that at their school students are retested every six months using the same checklists or assessments as were done six months before for reliability and validity.

As requested. Four respondents noted that their schools test “as necessary or as requested.” Three of these schools noted that parents must request and sign a permission form for additional testing other than what is done at the three year mark of the IEP.

Funding. Survey respondents were asked how tests for students suspected of having special needs were financed at their school. Respondents were asked to select all that apply: (1) by the parent(s) or guardian(s) of the child with special needs; (2) by the general school budget, Donors, State funding, Federal Funding, Scholarship funds, Other.

Four respondents, 7.6% stated that their school uses funds from the parent(s) or guardian(s) of the child with special needs. Twenty-five respondents, 48% said their school uses the general school budget. No respondents, 0% indicated that their school elicits donors. Thirty-four, 65.3%, respondents indicated that their school uses state funding. Twenty-seven respondents, 51.9% said their school uses federal funding. No

respondents, 0 or 0% indicated that they use scholarship funds. Two respondents, 3.8%, said “not sure.” Four respondents, 7.6% said, “Through special education funding,” while one respondent, 1.9% said, “MAA moneys, Title 1 and other funds.” One respondent, 1.9% said, “District Funding.” Two respondents, 3.8% said, “Medi-Cal/LEA billing or reimbursement.” One respondent, 1.9% said it was “determined by district policy.”

By far the most frequent means of funding was from government money. This money came from the state, the national fund or both. While other funding methods were sometimes used, government funding was the most popular. The researcher believes this was the most frequent because special education testing processes are extremely costly. Thus, any money a school can get outside of its typical budget is usually used first before proceeding to other fundraising methods.

Best Processes for Testing

Interviewee suggestions. When interviewees were asked how they would “discover” students with ASD and what the best process would be, several themes emerged. One theme was determining the LRE (least restrictive environment). Another theme was composing a team of experienced assessors from various disciplines (parents and caregivers included). This team would be able to sort information with careful analysis of observations in various settings over a period of time.

Also, a strong theme was early identification. Interviewee D states, “With early identification, interventions can be put in place to ensure better student outcomes.” Next, the theme of individual attention arose. This theme was apparent in many responses and noted that all students are unique. Interviewee O said it well, “There is an adage that if

you know one student with autism you know one student with autism. We need to individualize for all students.” This respondent also noted, “We work as a team: general education, special education, speech language, OT's and the psychologist, along with the parents, to find a plan that works for each individual student.” Another theme was socialization.

Some interviewees recommended social skills classes, while others stated that mainstreaming was the best way for students to learn social skills. Interviewee E agrees with mainstreaming for socialization but notes, “Mainstreaming is good for some subjects but I would need proper staff (trained assistants and training for general education teachers).” Interviewee F agrees stating, “I would strongly emphasize the fact that a student with ASD does not immediately mean that he/she needs to be placed in a special education setting.” Another theme emerging from this question was who should recommend and evaluate students. Interviewee F stated, “I would want suspected students to be evaluated and diagnosed by a neurologist who relies on objective measures (standardized) not by parent or teacher observations.” While others recommend talking to staff members and having teachers evaluate students for evaluation. Interviewee A confirmed, “I cannot be in all classes, so I depend on the teachers and parents to let me know if they have a concern about a child socially.” Interviewee M stated, “I think it would be based on parent/medical professional first and then follow up with testing and teacher records etc.” One more theme was the need for general educator education in regards to autism awareness and strategy. Interviewee H stated, “I would educate General Education teachers more about a student's specific behaviors and management

strategies as well as provide support in modifying communication for successful mainstreaming opportunities.”

Survey respondents’ suggestions. Survey respondents were also asked what they thought the best process would be for testing students who teachers (or others) thought had autism or another ASD disorder. This question yielded a great variety of suggestions. However, many of the responses echoed those of the interviewees.

Most respondents agreed that another process other than the one their school currently used was “best.” Also, several were unsure of the best process, however, most participants agreed that starting with a teacher referral or observation was best.

By far the most frequently suggested plan was something like the following: Multiple observations ought to be done by the school psychologist and speech pathologist in various settings such as classroom, playground etc. Also respondents suggested including a Student Study Team (SST) meeting in the early stages of the referral plan. Next, personal, developmental interviews with the student, teacher and parent should follow. Standardized evaluations (questionnaires etc.) as well as non-standardized assessments should be included in the evaluation. The psychologist, resource teacher, and Speech Language Pathologist (SLP) should assess the student with said evaluations. Afterwards, formal documents and plans are drafted to help the student be successful in the Least Restricted Environment (LRE).

Otherwise, the responses were varied. One respondent stated the following process, “School administrative hierarchy must have protocol in place- referral to an experienced multidisciplinary team for screening and possible full assessment. This team must be highly trained in assessment, behavioral analysis and knowledge of working

constraints within the system available for remediation. Complete assessment, make recommendations for behavioral services, specific areas of dysfunction and educational programming.” Another respondent stated, “I believe having access to a full time psychologist and having a secondary RSP teacher would allow our school to service our students more thoroughly. That would give our specialists time to observe the student in class several times, meet with the parents to see if they have the same concerns, and then carry out the necessary testing.”

Five respondents made note of the “early and often” motto for testing students. These respondents stated that early identification and intervention was best for students with ASD. One respondent suggested testing before kindergarten, while another stated students should be “assessed as soon as possible by the school psychologist.”

One respondent felt the way her school conducted eligibility testing was “best,” stating,

I feel that the method we use is quite effective. Within 15 days of a parent or SST recommendation, the School Psychologist assesses the student. The Psychologist then analyzes the results, and meets with the parents and the rest of the team (Education Specialist, administrator, general education teacher, etc.) to discuss the findings. It's always completed in a timely and efficient manner.

Three participants felt that a complete psychoeducational evaluation that included formal assessment measures by the school psychologist, RSP and speech pathologist as well as informal assessment measures such as observation, records review and collaboration would be most helpful.

A participant (school psychologist) noted the following process,

The teacher should let me know they have a student they suspect is on the spectrum. From there, I ask the teacher a series of questions to search for red flags. If red flags are present, I ask the RSP teacher to schedule an SST with parents to discuss teacher concerns. Prior to the meeting, I ask the teacher to let parent know that he/she has concerns about the student and that a meeting is going to be scheduled with the school team representatives, parent, and school psychologist to discuss concerns. During the SST, I ask the parent a series of questions to further assess the need and presence of a disability. If the information presented paints the picture of a student that may have traits of ASD, I recommend to the team that a full psycho-educational assessment be conducted.

One respondent stated,

(1) Intensive training for the gen.ed. staff to help them identify (screen), understand, and teach students with ASD; (2) Initial screening conducted by at least 2 different trained staff members, including parent input; (3) Formal testing by at least 3 qualified staff members utilizing the most up to date tests/materials available.

Officially Diagnosing ASD Students

A tension exists in regards to diagnosis of students with ASD. Many individuals think that the school is the primary institution for identifying and diagnosing students with special needs and ASD. While, others believe that parents ought to first take their student to a medical professional before being seen by a school employee such as a school psychologist.

School diagnosis. Twenty-one schools from the survey noted that the school psychologist was the main individual involved in determining which test to administer and then carrying out the testing process. Several participants felt strongly about this and stated that schools ought to leave the testing to school psychologists and professionals. Multiple individuals wrote something like, “Consult school psychologist who conduct testing in the school environment.” Interviewee A (a psychologist) confirmed, “I cannot be in all classes, so I depend on the teachers and parents to let me know if they have a concern about a child socially.” Many respondents noted that having a school employee make recommendations for a student was the best method.

Medical diagnosis. Six respondents from the survey stated something like, “Students must have a diagnosis from a medical doctor. A school psychologist cannot make a diagnosis.” These respondents who noted that their school cannot “diagnose” a student suggested having the school psychologist recommend that the parents take their student to a psychiatrist or other medical doctor in order to qualify for special needs services.

Interviewee F stated, “I would want suspected students to be evaluated and diagnosed by a neurologist who relies on objective measures (standardized) not by parent or teacher observations.” Interviewee M stated, “I think it would be based on medical professional first and then follow up with testing and teacher records etc.” Thus, several respondents felt certain that a true diagnosis ought to come from the medical community.

How Are Staff Members Equipped To Accommodate Students with ASD?

Collaboration and teamwork. When asked if specialists collaborate with others in the district who work with students with ASD, 85% of survey participants noted that

they did. Interviewee A States, “Yes, I collaborate with other school psychologists, autism specialists, SELPA representatives, and speech-language pathologists. Typically interactions are done in person and involve talking about specific students.”

Additionally, Interviewee C stated, “Yes, we collaborate as teachers and specialists. We coordinate services, compare observations, exchange data and share technique/materials.”

Interviewee N notes, “Yes, I often consult with our Program Specialist at the District Office. The other SDC teacher, our Speech and Lang. Specialist, and our School Psych are also great partners with which to consult.”

On the other hand, 15% of survey participants noted that they did not collaborate with other specialist in the district. For example Interviewee K stated, “Collaboration with others who work with students with ASD occurs very little or not at all.”

The researcher admits that the size of the district and the definition of the work “collaboration” may account for the 15% who note that they do not work with other specialists in the district. It is the researcher’s opinion that collaboration is highly beneficial. Thus, it is positive that the majority of the study’s participants work with others in order to improve and refine their processes.

Training. Many interviewees and survey respondents noted a need for training. Respondents noted that training ought to be provided for the staff administering or interpreting the test results. The speech pathologists and school psychologists particularly agreed that general education teachers lacked training for accommodating students in their classroom with ASD. One respondent noted that teachers needed training specifically for how to, “identify (screen), understand, and teach students with ASD.” Individuals did not blame general education teachers, rather they blamed the

district for not offering training and specific strategies for helping teachers know what to do. Respondents noted that students ought to be placed in the Least Restrictive Environment (LRE). Many times this environment was said to be in the general education classroom. Respondents noted that as inclusion becomes a more frequent option for LRE, general education teachers need more specialized training for helping students with special needs and ASD.

Another recommendation was for training. This training was suggested for learning about study manuals and procedures for the tests as well as strategies for teaching students with ASD. One respondent wrote, "Training is key. It's not the diagnosing that is the issue; it's the lack of training in general education teachers that can be an obstacle for students with ASD." Another wrote, "Educate the teachers and all involved in the new instruments so they can implement them. They need to be user friendly and easy to use if you want teachers to actually implement and use them." One individual offered very specific advice in this area, "The Orange County Department of Education sponsored the 'Assessment Focus Academy', which was an excellent training opportunity."

It was interesting to note that several participants stated that general education teachers are now required to undergo a mandatory Autism Certification. Indeed many participants were in process or had plans to receive this training. This seems to be a very recent certification that has been offered. The researcher thinks this was recently implemented to assist general education teachers in accurately accommodating students in their classroom who are classified with ASD. The researcher has this opinion since many teachers were requesting it (as noted earlier). It seems that not all schools have

implemented this qualification for their teachers. However, it appears that this is an excellent training component, since many respondents indicated a need for further training for general education teachers.

Protocol. Respondents expressed a desire for a clear process that all staff members were aware of. One participant wrote,

Have protocols that ALL teachers buy into. I have found that SPED (special education) is not only teaching but quite political as well. Gen ed teachers need to be aware of what actually goes on within Sped departments and understand accommodations and modifications and the IEP as well. There are great teachers on my campus that still do not fully understand the IEP nor the ILP process. Some special ed kiddos walk talk and look 100% gen ed, and gen ed teachers do not always understand that the majority of disabilities are not visible.

Another respondent wrote,

Have a method/process in place. Make sure that all new teacher hires are made aware of this process. Have forms already typed for parents. When a student is recommended for identification, make sure to send all appropriate paperwork home to parents in a timely fashion. Make sure that forms can be produced in a variety of languages. Also be clear at each school site as to who is in charge of which responsibility within the process.

Indeed, a clear protocol is needed at every school for accurately discovering and accommodating students with ASD. Additionally, unity needs to be developed within schools and districts for the sake of educators and students.

ASD Statistics

Most frequent type of ASD at respondent's schools. When asked, "At your school, which type of ASD do you see most frequently (PDD-NOS, Asperger Syndrome, etc.)?" The interviewees responded as follows. Sixty-two percent noted that Asperger's Syndrome (high functioning autism) is highly represented at their school site. While, 46% of interviewees noted that PDD-NOS is highly represented at their school. Additionally 15% noted Speech Language Delay, Severe Autism, Autism and ASD as highly represented at their school. Lastly, less than 1% noted Speech Language Delay as present at their school site.

These percentages agree with comments made from survey respondents. It seems that most schools encounter students with high functioning autism, while very few schools have severe cases of autism. This corresponds with literature from Taylor (2005), which notes that most schools encounter students with high functioning autism. It has been noted by participants that there is a need for more classes and educators who work with students with severe autism. Yet, general education teachers seem to most frequently be working with students with PDD-NOS or Asperger's students. These students are more frequently mainstreamed into regular classrooms, as they are higher functioning. Therefore, the data seems reasonable by noting that these two types of autism are most frequently noted at participant's schools.

Percentage of ASD students at school. As noted in chapter three, participants were also asked to estimate and indicate their school's percentage of student's who are diagnosed with ASD. Some schools represented in this study were noted by participants

to have less than 1% of students with ASD, while others noted as much as 40% of their student population having ASD.

Recent literature notes that 2.64% of the population has ASD. When interviewees were asked how many students at their school had ASD they responded by stating the following. Fifty-four percent of interviewees thought that the percentage of students in their school with ASD was higher than 2.64%, while 38% of respondents interviewed thought that the percentage of students with ASD was lower than 2.64%.

Why is this number increasing? As it has been stated, recent literature notes a rising trend with percentages of students with ASD. Fifty-four percent of interviewees agree that they have seen more than 2.5% of their students with ASD on their school's campus. Indeed Interviewee L states, "We did just have a presentation from a district specialist who pointed out that the number of autism diagnoses in our district has increased 600% over the last decade, or so." When asked why they thought the amount of students with ASD was rising there were several themes that emerged.

Wider diagnosis criteria. Many interviewees noted wider diagnosis criteria. Interviewee N states,

I think this is an increase from past data because we now have a broader definition of autism, we can better diagnose autism, and since it can occur alongside other disorders, it may have not been the main focus in a child.

Interviewee M agrees stating, "A lot of other disabilities like ADHD, Rhetts, aspergers etc. have been lumped into autism as eligibility diagnoses and that is why the percentage is going up." Interviewee L states, "I would imagine that the number is rising due to wider diagnosis criteria and more awareness of the disorder." Interviewee G says, "Yes,

there does seem to be more students on the spectrum. I think we are diagnosing students with a disorder that in years past they were labeled ‘odd.’” Interviewee E states, “Our district has seen a significant increase. This number has increased because autism now covers a spectrum as opposed to traditional autism.”

Over-diagnosing. Another theme is over-diagnosing of students. Interviewee H states, “I think the rising number appears to reflect increased awareness of the disorder, as well as over-identification, particularly with the preschool population.” Interviewee F states, “I do believe that ASD is being over-diagnosed, much like ADHD was a few years back.”

Increased research and training. Additionally, a theme of increased research and training of professionals in identification and improvement of assessments for identifying ASD was present. Interviewee D stated, “Increased research on ASD and training of professionals in identification, physician early screening & identification, improvement and increased amount of assessments developed for identifying ASD, improved community awareness, broadening definition of ASD.” It seems that schools are attempting to train educators and hire specialists who have knowledge in working with students with ASD.

Genuine increase of population. Another theme is realistic, genuine ASD population increase; for example, having children later in life. Interviewee A states, “People are having children later in life. Men that are over the age of 40 are more at risk of having a child on the spectrum.” There was no research to substantiate this interviewee’s claim. However, this is not the first time that the researcher has heard of this statistic talked about among educators. One interview participant notes,

The gene for ASD is more prevalent now that males are waiting to have children until their careers are settled. I work in Irvine, and ASD is rampant at our school because many of the parents are doctors and lawyers. These professions take a long time to begin. Thus, parents are waiting until one or both of them are finished with schooling before starting a family. Older parents have children with autism more often.

Some respondents note that environmental factors contribute to an increase of students with ASD. Interviewee A states, “Environmental factors appear to be changing our genetic make-up. Also some people are more genetically fragile to environmental toxins (I’m not referring to vaccines, but rather things we are exposed to in our environment).”

Thus, there may not just be the appearance of an increase of students on the spectrum, but rather there may actually be more students with ASD in schools and in the world.

Accommodations For Students with ASD

Are accommodations adequate? Survey respondents were asked if they felt their school had a system in place for adequately accommodating students with ASD. In response to this question, 78.8% of respondents said, “yes,” while 21.2% said “no.” While most of the respondents felt that their school did have a system in place, it seems that protocols and processes need to be examined more closely.

While choosing correct assessments is a foundational problem, appropriately accommodating students is perhaps an even more significant problem. Thus, respondents

were asked about the strengths and weaknesses of their school's ability to accommodate students properly.

Strengths of school accommodations. Throughout the survey and interview data, there were six main themes that emerged in regards to the strengths of respondent's school's approaches to servicing students with special needs and ASD.

First, the respondents overwhelmingly noted the formation of a team of key individuals (such as principal, RSP teacher, school psychologist and speech pathologist) who meet to discuss a student's progress in every area and create a plan or formalized document from these meetings. The respondents noted the frequency of these meetings as well as their significance as their school's strength. The second strongest theme was the importance of instructional aids. The attention from playground supervisors, trained aids (1:1 or otherwise) and other instructional support to assist students was noted as a very strong trait of the school's strengths when servicing students with ASD. Third, social and behavioral education such as social groups and playgroups for ASD students was noted as a strength of schools.

Additionally, the fourth theme noted was strong, caring, flexible supportive staff members and the unity among them. Additionally, these respondents also emphasized the particular presence of speech pathologists and school psychologists as positive contributors to a team-like staff. One respondent wrote, "We are always helping each other out with ideas on our caseloads etc." Next, respondents noted the decision for mainstreaming/ inclusion, pullouts or independent special day classes. These respondents noted that their school treats every student as an individual and pushes them to their potential. Finally, the sixth theme from the respondents was training. Some respondents

noted that teachers undergo a mandatory Autism Teacher Training. Within this vein, the respondents noted that keeping staff members informed and up to date with training was key.

Again, it was interesting to note that general education teachers are now required to undergo a mandatory autism certification in certain school districts as mentioned above. It seems that not all schools have implemented this qualification for their general education teachers. However, it seems that this is an excellent move, since many respondents indicated a need for further training.

Weaknesses of school accommodations. When asked to list the weaknesses of their school's approach to servicing students with special needs and ASD, several themes emerged.

By far the most common theme was insufficient specified training for general education teachers on strategies and practical advice for working with students with ASD. The second most common theme was a lack of funds, teachers and tools to provide adequate assistance to students with ASD. The third theme was coupled with the last. Respondents stated there were bulging caseloads with too many students to adequately service. The fourth theme was the need for more inclusion. Respondents noted that many students with ASD ought to be mainstreamed but are not. Fifth, respondents stated that there is no school-wide testing process. Staff members are unaware of their school's testing protocol and procedures. Students are only tested based on teacher recommendations or parent requests, therefore students may be unnoticed in regards to qualifying for services. Finally, the last predominate theme was a lack of social skills training and social skills groups for students with ASD.

The researcher agrees that a weakness of schools in accommodating students with ASD is a lack of unity in testing processes. Also, it has become apparent through both the interviews and the survey responses that teachers (general education and special education) need more information about their school's testing processes. Recall that frequently the speech pathologists or school psychologists were the only survey respondents who had insight into their school's testing protocols. Even administrators who took the survey or answered interview questions lacked key information about students with ASD and their testing procedures.

Now that the data has been analyzed and presented in a thematic narrative, the findings from these results will be discussed in the next chapter. Within chapter five, the researcher will synthesize findings, make conclusions, discuss limitations and offer recommendations for further study.

Chapter Five: Findings

Problem

Private schools aim to offer a type of education that public schools cannot. With private funding, and small class sizes, many times these schools succeed in fostering a loving environment with strong academics. However, private schools are significantly behind their public school counterparts in the realm of special needs (Taylor, 2005). Experts agree that greater efforts ought to be taken to ensure that all students are educated well in private schools (Pudlas, 2008). Many private schools are Christian private schools. In the Bible, Jesus says that we ought to love all people (Matthew 22:39). The belief that all people are made in God's image is essential to the Christian worldview. The idea that God gives humans the ability to love, worship and think is often promoted in the private school (Reisen, 2002). Further, Christian private school teachers often foster the idea that God gives all people special purpose through unique talents and abilities. Christian schools encourage students to respect and love each other as Jesus commanded. Therefore, private schools ought to love all children by doing the best job possible in educating them. Hence, there is a significant, disturbing disparity between the Christian worldview of students with special needs and the method in which these students are taught in Christian schools (Stymeist, 2008). Some experts such as Pudlas (2004) say that Christian schools should not only equal public school's efforts regarding special needs students, but should also exceed them, "...a commonly held world-view, a Biblical one in which all students are valued equally, should lead to different student perceptions than those of students in public schools where no such common world-view is held" (p. 67).

Every year one of the most significant statistics to rise within the area of special needs is autism. The amount of students who are recognized as having autistic tendencies is rising every year. Schoenstandt (2009) states, "...two to six children out of every 1,000 will have autism" (p. 1). Other experts provide a higher percentage. In a recent international study, experts now estimate that 2.64% of the population is autistic (Carey, 2011). While research statistics vary, each is consistent in that all studies indicate a significant rise in students with autism when compared to past research. With the ever-increasing number of students being diagnosed with autism or a form of autism on the Autism Spectrum Disorder (ASD) scale, schools ought to continue to work towards serving students to the best of their ability. This especially pertains to private schools that are so far behind. Private schools need to cater to those students who need extra attention to help them succeed in school. Since statistics continue to rise in regards to students having ASD, private schools ought to increase their efforts for educating students with ASD.

While it is true that public schools are far superior to private institutions in regards to special needs students, another problem exists. Even public schools, which are more advanced than private schools, are not unified in regards to identifying students with autism. This study and research has shown that even within a particular district, the tests that are administered to see if a student has autism are not consistent. Therefore, since it has been demonstrated that a plethora of tests exist and districts and teachers do not use the same tests, there needs to be unity among the schools so that a more accurate picture of the student can be developed.

Therefore, not only are private schools far behind the public schools in the area of special needs, but also the public schools lack consistency as to which ASD eligibility test they use. Furthermore, since there are a variety of tests used throughout public schools, nobody's opinion is taken into consideration when selecting an ASD test. Before choosing a universal test or testing process, teachers, administrators and other school educators involved in testing ought to be asked which test they prefer. While a test may be accurate, it also needs to be easy to administer and read. It is vital that test creators begin to ask for real feedback on their tests. It is necessary that tests be reliable and easy to administer so that the process may be carried out swiftly for the benefit of the teachers and students.

Significance

This study was highly significant since two literature gaps were discovered. Very little research has been done to determine which test is the "best." Some of the assessments used for determining ASD are norm-referenced, while others have yet to be reviewed. Some of the tests have been looked at individually for accuracy and validity (normed), but a study has not been done that compares all of the tests currently used in southern California. There has been some recent literature that has surfaced comparing a few ASD eligibility tests. These studies have been helpful. However, in order to choose one universal testing process, it is vital that all tests be cross-referenced. Furthermore, no study lists the exact tests used by each school throughout all of California. Therefore, this study intends to gather a sample of the variety of tests used throughout the southern portion of the state.

In addition, there is no qualitative research that investigates the best test according to the schools themselves. Teachers, administrators, psychologists, and speech therapists are the ones who implement the test on a daily basis, yet their opinions have not been elicited until now. More research must be done in order for steps to be taken to implement a universal testing system for students being tested for ASD.

Methodology

Recall that the researcher sent out a survey to 100 individuals. The individuals were selected based on job position and location. A wide base of individuals was selected for rich data. Fifty-two individuals responded to this survey. The survey was online and included twenty questions. It was discovered that very few educators actually work with the testing of students for autism. Typically, only school psychologists or speech pathologists conduct ASD tests. Therefore, the individuals who responded were very knowledgeable and helpful for the study.

In addition, thirteen individuals were interviewed. These individuals all had a solid understanding of their district's protocol for eligibility testing for students with autism. A series of five pertinent questions were asked to each individual. All interviews were recorded and coded. The coded data was used to enhance the information gathered from the online survey. These experts were able to give their opinions and facts about ASD testing.

Therefore, this study was a mixed-methods study, including both qualitative and quantitative data. This method was chosen in order to triangulate data and produce robust research.

Research Questions

This study addressed two questions. These questions were formulated in light of the two gaps that were discovered in the literature. The first question is, “Which ASD tests are currently being used in southern CA public schools?” The second question asks, “Which tests are favored by the school employees who administer them?” These questions were at the core of the survey and interview questions. The answers to both of these questions will be addressed in the findings.

Findings

During chapter four the researcher presented the raw data from the study. Both quantitative and qualitative results were reviewed. The researcher posed two research questions. Thus, all findings will be presented in correspondence with each research question.

Which ASD tests are currently being used in southern California public schools? The researcher found the following tests used in southern California public schools through survey and interviews: Childhood Autism Rating Scale (CARS), Gilliam Asperger’s Disorder Scale (GADS), Gilliam Autism Rating Scale (GARS), Childhood Autism Spectrum Test (CAST), Social Responsiveness Scale (SRS), Autism Spectrum Screening Questionnaire (ASSQ), Social Communication Disorders Checklist (SCDC), Modified Checklist For Autism In Toddlers, Asperger Syndrome Diagnostic Scale (ASDS), Autism Diagnostic Observation Schedule (ADOS), Autism Diagnostic Interview, Revised (ADI-R), Social Communication Questionnaire (SCQ), Social Language Development Test – Elementary, Pragmatic Profile, Comprehensive Assessment of Spoken Language (CASL), Conners Behavior Rating Scales (CBRS),

Conners Rating Scales - Revised (CRS - R), Wechsler Intelligence Scale for Children (WISC IV), and the Woodcock-Johnson III (WJIII).

It should also be noted, that the researcher was surprised that so many participants indicated the use of the ADOS test. This is a relatively new test and only recently has literature begun to be written on the implications of this test (Bildt et al., 2009) and others. However, many participants indicated this test as an effective test that their school used.

Prior to data collection, the researcher hypothesized that there were a variety of tests used to assess children with autistic tendencies. Recent literature also supported this notion by noting various tests such as ADOS, ASDS, SCDC, ASSQ and others (Akshoomoff et al., 2006; Campbell, 2005; Skuse et al., 2005; Wilkinson, 2010). The researcher also hypothesized that there was no universal test used in public schools to test students for ASD. Abebe and Hailemariam (2008) noted that there lacked a consistent referral process for autism eligibility testing within the public school system. Livanis and Mouzakitis (2010) think it is vital that a universal plan be implemented in schools for the referral and testing of students with ASD traits. Le Couteur (2003) advised, "An agreed written referral pathway for children with suspected ASD, both pre-school and school age, accessible to all professionals and parents: this may be the same as for all developmental problems" (p. 12).

After conducting the study, the researcher's hypotheses were correct. The data collected from both surveys and interviews indicate over nineteen tests used in southern California, as indicated by the 52 respondents from this study. Thus, it can be concluded that there are even more tests used than were represented from this study.

Which tests are favored by the school employees who administer them? After reviewing both interviewee responses as well as survey participant responses, the researcher found that the CARS test was the favored assessment of the respondents. The study participants used terms such as, “practical,” “user-friendly,” “straight-forward,” and “simple” to describe the test. This was followed by the ASDS and ADOS assessments. Participants used terms such as “easily understood,” “comprehensive,” and “assesses multiple areas of functioning” to describe them respectively. The GARS and GADS tests were slightly favored while SRS was the least favored. All other tests indicated on the study were not favored at all by the educators who administer them within this study. Several participants indicated that they did not have a favorite due to reasons such as “they did not like any of the tests,” and they “preferred basing testing on individual students.” These respondents used terms such as the tests are: “too lengthy,” “inconvenient,” and “too subjective.” It should also be noted that several participants did not use any of the aforementioned tests, but rather used tactics such as informal measures, observations etc. The participants used these methods if they did not like the tests available to their district.

These comments indicate a need to look more closely at the available tests. It is clear that the testing process for students with ASD characteristics must be more streamlined for the benefit of all parties involved (Le Couteur, 2003). As indicated previously, no qualitative literature to date has been produced that studies the preferences of the educators who administer the tests. Therefore, further studies ought to be conducted on educator preference that way more rich data can be cross-referenced and compared.

Implications For Practice

Implications for schools without an ASD protocol.

Choose one test. As a result of this study, the researcher found that no universal ASD test is used within the public school system. Based on teacher preference and the amount of schools that indicated the use of the CARS test, it is recommended that this test be used as a universal test for students. If school psychologists or other test administrators feel that the individual child needs further testing in a certain area, there ought to be a battery of tests such as the ADOS available to them. However, the researcher believes that from the survey respondents and interviewees, the CARS test seems like a user-friendly, accurate assessment for determining ASD characteristics in students. The researcher's recommendation for schools that have not picked one test is to choose the CARS test. Schools ought to be unified in this selection.

Teamwork and collaboration are key. Professionals and educators must collaborate to correctly identify and assist students with characteristics of ASD. In a recent international study, experts now estimate that 2.64% of the population is autistic (Carey, 2011). As noted, this number is still on the rise (Abebe & Hailemariam, 2008; Kogan, et al., 2009; Le Couteur, 2003; Livanis & Mouzakis, 2010; Skuse et al., 2005; Wilkinson, 2010). Thus, it is important that parents, teachers, administrators and researchers continue to work together to most fully support and assist these students (Wilkinson, 2010). Based on survey and interview data, many specialists collaborate together to hone their skills and work together to discover the best solution for a student with ASD.

Timing is everything. It has been noted in the data that the participants of this study prefer students to be diagnosed early and often. The researcher recommends implementing a clear protocol for a frequent testing process. For example, several schools from the study have a standing rule that once the test administrator (like a school psychologist) gets a referral, the paperwork is processed and the student is tested within 15 days. Additionally, having a clear support system in place for testing is important. Form teams that include multiple educators such as administrators, general education teachers, special education teachers and speech pathologists to weigh in on any given student recommended for ASD testing. Having this team formed before paperwork is drafted will speed up the process and will be more effective for all parties involved. The Idea law states that forming a team is a recommended method for supporting students. However, currently caseloads are bulging and are making it difficult for this to happen. Administrators need to minimize overload for special education teachers so they can be available for these teams.

Private schools. Part of the aim of this study was to research public schools and their current testing policies in order to make recommendations for private schools. Taylor (2005), Pudlas (2004) and others note that private schools are lacking in the area of special needs. Thus, private schools ought to implement procedures and policies such as a testing process for helping students with ASD characteristics. Christian private schools ought to emulate public schools in their testing systems and procedures. The Bible encourages people to care for and love others. Matthew 19:19 (New International Version) says, “Honor your father and mother,” and “Love your neighbor as yourself.” Luke 10:27 states, “Love the Lord your God with all your heart and with all your soul

and with all your strength and with all your mind,” and, “Love your neighbor as yourself.” In Matthew 19:14, Jesus said, “Let the little children come to me, and do not hinder them, for the kingdom of heaven belongs to such as these.” Children were an integral part of Jesus’ ministry. During biblical times, the culture did not value children as it does today. Yet, Jesus placed great value upon them. Additionally, Christians believe that children are made in the image of God. Genesis 1:27 states, “So God created man in his own image, in the image of God he created him; male and female he created them.” Christians also believe that all people are created equal. Based on this notion, it is perplexing that private, Christian schools are not doing more in the arena of special needs.

When taking a broad perspective and looking at the resources public schools and private schools are using to assist students with special needs, it is clear that private schools are far behind their public counterparts. It is the researcher’s opinion that private schools ought to be the leading resource for special educational services and accommodations. Private schools have several benefits that are advantageous to the student with ASD. One such advantage is small class size, as well as teacher concern. It has been noted in research that teacher concern and care had significant influence on student self-concept (LaBarbera, 2008). Since private schools have likeminded worldviews, public schools ought to emulate private, Christian schools in regards to special education. However, this is not the case. Private schools are ignoring their obligation to appropriately and adequately serve students with ASD and other special needs.

Yet, it is true that private schools have several hurdles to jump. One such

obstacle is finance. Since the government funds public schools, they have more resources than many private schools. It can also be noted that special education services can be costly to implement and maintain. Additionally, many private schools lack the resources to properly train and employ professionals who specialize in the area of special needs (Pudlas, 2004). However, private schools need to pool their resources to properly assist each other to care for God's beloved students-including those with ASD and special needs.

Because of their lack of resources, private schools are not allowing a student with special needs access to a Christian education. Parents who desire for their student(s) to be taught with a Christian worldview are often forced to look elsewhere if they have a student requiring special need services and accommodations. While a few Christian schools offer special education services, more need to be established so parents do not have to drive excessive distances to attend scatters Christian schools who accommodate students with special needs.

The researcher desires to see all students given the greatest opportunity to grow and learn within the context of a private, Christian school. The researcher believes that a universal, consistent process assists in this mission. Because all students are made in the image of God, Christians ought to pool resources and make greater strides to serve these precious ones in the private school. Thus, the researcher recommends the following plan.

Since this study revealed that school psychologists and speech pathologists are the most knowledgeable about ASD testing procedures, private schools ought to work together to "share" a school psychologist. The researcher recommends sharing a psychologist for financial reasons. Interviewees from the study noted a desire for

increased training, thus individual hired to be the school psychologist ought to be highly trained in all areas, but especially in ASD. This school psychologist can perform all of the testing for students referred to him or her. After testing, the school psychologist may recommend an action plan that helps the student and places them in the least restrictive environment (LRE).

Hiring a joint school psychologist is preferred over visiting a public school psychologist for several reasons. Often public school personnel are overloaded and are reluctant to take new students that do not attend a public school in the district. Additionally, while a public school is required to assist private school students in testing for special needs, they are not required to provide follow-up care. Therefore, private schools ought to share a psychologist so that a professional may draft an Individualized Education Plan (IEP) as well as being present for monitoring the progress of a student over several years.

As researchers have noted, ASD instruments have the ability to measure severity of symptoms in the domains of social behavior, communication, and restricted range of interests (Wilkinson, 2010). The tests researched in this study can be very helpful to private schools for the drafting and implementation of an IEP or Individualized Learning Plan (ILP). After a student has an ILP (or IEP) it is important for teachers, parents, and administrators to monitor student progress. If a certain accommodation, program or modification is deemed effective; it should be recorded in the student's ILP.

It is recommended that students who are diagnosed with ASD be monitored closely. Also, since most schools primarily have general education classrooms, it is vital that general education teachers at private schools be informed and instructed in the care

and nature of students with ASD. A student having an IEP (or ILP) with an ASD prognosis ought to be retested on a triennial basis, as is done in most public schools.

Whose responsibility is it? Within this study it was noted that teachers could refer students for special education testing. However, there is a tension between the educational world and the medical realm. Therefore, while teacher referral was the most frequent way that students were recommended for services in this study, there are other parties involved. Parents, psychologists, doctors, medical professionals, speech pathologists etc. can all refer students for testing. Thus, whose responsibility is it to refer a student for testing? Again, while it is appropriate for there to be multiple parties involved in testing a student for ASD, the process needs to become more streamlined. If a parent fails to refer a student for testing, will a teacher notice and refer? How many students “fall through the cracks” because one party assumed the other ought to refer a student. Further refining needs to be done in regards to the referral processes. Often referrals and testing can take far too long to carry out. Educators need to decide within the school what process they are using for referral. Then the school or district needs to publicize the process and make sure that all educators are aware of the referral pathway.

Medical professionals ought to strive to work quickly and efficiently with educators in order to expedite the testing process. If it is decided that it is the doctor’s responsibility to refer students for testing, perhaps a medical professional ought to be enlisted to work for a school district. While the cost/benefit ratio can be problematic, there ought to be some professionals willing to help schools.

How Do You Marry a Human Testing Process With a Testing Process?

Further research needs to be done on the hybridization of special education processes. As it has been noted, there needs to be a consistent testing process at any school. However, study participants also noted that a human element is essential when testing a student for ASD. Therefore, is it process or people that are most needed in testing? Further research needs to be done in this area. However, it is important to hire and keep educators who are sensitive to the needs of ASD students, their parents and the teachers they work with. These educators need to be highly trained in order to most accurately assist students and their families in finding the LRE and the best accommodation plan for a student. The educators need to be informed of the tests that are available to them and must work to merge a process that includes a human element along with assessments.

Limitations

Tests. While the tests reviewed in the study were widely used, reliable, valid tests, all screening instruments have their limitations. Thus, while the researcher was attempting to determine the most accurate, user-friendly test, it is important to note the limitations of the assessments themselves. First it is important to note that since humans are running the diagnostic assessments, there is potential for error. Each test administrator has bias and opinions that can influence the validity of the testing instrument. Also, it is important to note that certain students who screen positive are not diagnosed with a disorder, while some children who are not identified with ASD may have one. Educators need to monitor all students, especially ones who screen negative on an ASD service eligibility assessment. It is important to keep track of these students since they may qualify for special educational services later on.

Additionally, some of the tests mentioned in this study need to be more widely reviewed in a school setting. Many of the tests are norm-referenced, but all of the tests need to be revised and updated depending on researcher's results regarding validity, reliability and the ability to decipher which part of the autism spectrum the student most closely fits. For example, some tests in the study are better than others at deciphering which ASD trait a student may have. Several tests will only indicate if a student has one of the ASD disorders (ex. PDD-NOS not Asperger's). The tests each have limitations that are unique to that instrument.

Research Study

In addition to the tests themselves having limitations, the study also encountered various limitations. Due to cost and time restraints, the sample size was somewhat small. Additionally, as previously mentioned, there were an extremely limited number of educators who were able to answer the questions presented in both the survey and the interview. Since there are only several educators per school or even school district who are informed about the ASD testing process. The respondents were from varied school districts and offered a representation of educators in the southern region of the state who hold similar positions. However, as noted before, a small sample size may not accurately reflect all educators' opinions.

Also, since the researcher was eliciting opinions, the study is somewhat subjective. The "best" ASD testing instrument was determined based on the opinions of the participants of the study and based on prior tests and research done on the assessments themselves. Even though the final answer to the second research question (Which tests are favored by the school employees who administer them?) is subjective,

the results will still be valuable to both public and private schools for making an informed choice when selecting an ASD testing instrument. Additionally, the research may help to unify the entire ASD testing process to make it more streamlined, accurate and fair for students with ASD.

Additionally, while delineations in sampling were made, this study only looked at the southern portion of California. Educators in other parts of the state may have valuable insight to offer. Future research should include the whole state in order to broaden the sample size and gain richer data.

In regards to generalizability, the researcher is hoping that the results are generalizable to other public schools and private schools wanting to incorporate new tests and systems into their school. However, further research needs to be done to see if the results from this study are easily transferred to the private sector. What works for public educators may not work for private school educators.

Recommendations for Further Study

The researcher recommends that a similar study to this one be conducted on a larger scale with the whole state of California, not just the southern portion. A future researcher ought to poll all districts in California via their school psychologists and speech pathologists. This study would be helpful by having a broader sample size to increase generalizability and make the results even richer.

Additionally, the researcher recommends that a study similar to this one be carried out within private schools. While it is true that private schools are vastly behind public schools in testing for ASD, it would be interesting to see if any of them have a testing process in place. In recent years, there has started to be attempts to include more

students with special needs in the private school. The researcher would be curious to see if any private schools are successfully testing students referred with ASD characteristics. Another researcher may also consider investigating the costs involved to a private school when implementing special needs assistance procedures in their school.

Also, a study may be conducted that uses the CARS test as a universal test. It would be advisable for the researcher to select one smaller district like Centralia school district to implement the CARS test as the initial test their school psychologists and speech pathologists use to determine ASD traits. The CARS would be the universal test throughout the schools in the district. Since this test was the most prolific, preferred test by these respondents of this study, it would be interesting to see how it worked when implemented in a public school district as a universal assessment.

In addition, it is recommended that an experimental school district similar to Centralia school district be compared with Centralia simultaneously. This comparable school should use a variety of procedures and tests and would thus serve as a control. This future study ought to view the length of time from the first observation of ASD to referral for testing to professional diagnosis. This timeline of eligibility testing may assist a researcher in discovering if a unified procedure assists in greater inclusion in the regular classroom. Since this researcher is recommending the use of one unified test, the CARS test, it is important that further studies be conducted to see if a unified test is indeed superior to a unified testing process using multiple tests.

Lastly, since a literature gap was discovered, and no other qualitative study has investigated test administrator preference, further studies ought to be conducted on educator preference. This future study would provide rich data that can be cross-

referenced and compared. It is important for test authors to consider the educators who will be using, implementing and interpreting ASD tests.

Final Thoughts For Educators, Administrators and Policy Makers

Public schools must increase collaboration and communication. It is imperative for the good of the student that more continuity be established within and between districts in regards to testing students with ASD characteristics. Additionally, private schools must begin to assist all students. Private schools have more hurdles than their public counterparts in regards to funding and resources. However, private schools can collaborate and strategize to make plans to assist students noted of having ASD characteristics. All educators wish to provide an equitable education for students, and thus ought to make strides in streamlining and implementing procedures for helping students with an Autism Spectrum Disorder.

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Appendix A: Autism Survey*

*Survey was online. Thus, it was transcribed to Word for the purposes of documentation.

To see it online visit:

https://docs.google.com/spreadsheets/viewform?hl=en_US&formkey=dGJOOG1sZ24yQUo5RGkwOFRKOHRjRmc6MQ#gid=0

Dear Participant,

Thank you so much for taking the time to complete this online survey. The information you provide will prove to be very helpful to the researcher and the education community. Before you begin the survey, please take a moment to read the following consent form. It is vital that you complete this step so I may use the information you provide (<https://sites.google.com/site/formforsignature/>). My contact information is provided should you encounter any questions or problems.

Please make sure that you allocate enough time to complete the survey in one sitting. I recommend carving 20 min. out of your schedule to ensure you have enough time to finish.

Thank you for your time and participation!

Sincerely,
Amy Wormald

STOP! Have you read the consent form? Please select "yes" if you have read the consent form (linked above) and agree to the conditions stated within. Clicking "Yes" below acts as an electronic signature.

- Yes
 No

Please list today's date below (00/00/00)

Survey Questions:

Please fill in the survey below. Thank you for your time!

Name of individual filling out survey (will be held in full confidentiality):

Contact Email (Will strictly be used for this research and will not be shared with any 3rd party).

1. Name of school where employed:

2. Name of school district where employed:

3. Approximate school enrollment:

4. What position do you hold at your school (administrator, teacher, counselor etc):

5. How long have you held your current position?

6. Please provide an estimate percentage of the school's students who are diagnosed with an Autism Spectrum Disorder (ASD: ex. Autism, Asperger's Disorder, PDD-NOS, etc.)? This percentage can be a rough estimate.

7. How do you discover students with special needs at your school? Please select all that apply:

- Teacher recommendation
- School entry assessment
- Parent interview
- Cumulative file review
- Other: _____

8. Please select the number of people at your school that hold the following positions:

| | 1 | 2 | 3 | 4 | 5 or more |
|--|---|---|---|---|-----------|
| Resource Specialist | | | | | |
| Reading Specialist | | | | | |
| Speech and Language Specialist | | | | | |
| School Psychologist | | | | | |
| Education Specialists (Special Education Teachers) | | | | | |

9. Do you feel that your school has a system in place for adequately discovering students with ASD?

- Yes
 No

10. Do you feel that your school has a system in place for adequately accommodating students with ASD?

- Yes
 No

11. Which tests does your school use in the eligibility testing process for students suspected of having ASD traits? Select all that apply *

- Childhood Autism Rating Scale (CARS)
 Gilliam Asperger's Disorder Scale (GADS)
 The Childhood Autism Spectrum Test (CAST)
 Social Responsiveness Scale (SRS)
 Autism Spectrum Screening Questionnaire (ASSQ)
 Social Communication Disorders Checklist (SCDC)
 Modified Checklist For Autism In Toddlers
 Asperger Syndrome Diagnostic Scale (ASDS)
 Krug Asperger's Disorder Index (KADI)
 Other: _____

12. If your school uses more than one of the tests mentioned above, please describe the order and process in which they are administered (for example do you use Cars first then Gads etc.) to determine if a student has an ASD disorder.

13. If you have experience using more than one ASD testing instrument (example: ASSQ) please describe which test you feel is the best (most practical to administer and most accurate) and why do you prefer this assessment over others you have used?

14. Once a student's test shows qualifications for autistic characteristics (ASD) how often are they retested at your school? Please describe the process of retesting below:

15. Please list the strengths of your school's approach to servicing students with special needs and ASD:

16. Please list the weakness of your school's approach to servicing students with special needs and ASD:

17. How are tests for students suspected of having special needs financed at your

school? Select all that apply:

- By the parent(s) or guardian(s) of the child with special needs.
- By the general school budget
- Donors
- State funding
- Federal Funding
- Scholarship funds
- Other: _____

18. What would be the best process (in your opinion) for testing students who teachers (or others at your school) think have autism (or another ASD disorder)?

19. Do you have any advice for schools looking to incorporate the use of one or more of these testing instruments into a new special education program?

20. Would you be willing to be contacted by email on or before October 18th for a brief interview to learn more about your role in Special Education?

- Yes
- No

Appendix B: Informed Consent Form

Participant's name: _____

I authorize Amy Wormald of the School of Education, Biola University, La Mirada, California, and/or any designated research assistants to gather information from me on the topic of Autism Spectrum Disorder Assessment Tools.

I understand that the general purpose of the research is to understand more about Autism Spectrum Disorder (ASD) Testing Instruments. The purpose of this study is to see which test is used most frequently to determine ASD traits. Additionally, the researcher will be looking to determine the overall best test for accuracy and practicality.

I understand that I will be asked to answer questions via an online survey and that the approximate total time of my involvement will be twenty minutes.

The potential benefits of the study are: Future students may benefit from the insights you gain. Your school may learn about better and/ or more accurate ASD testing instruments that other public schools are using. You may help to assist private schools that do not have a ASD testing process in place. In turn, private school students in a special needs program who transfer to a public school may be more prepared and in-line with your processes.

I am aware that I may choose not to answer any questions that I find embarrassing or offensive.

I understand that my participation is voluntary and that I may refuse to participate or discontinue my participation at any time without penalty or loss of benefits to which I am otherwise entitled.

I understand that if, after my participation, I experience any undue anxiety or stress or have questions about the research or my rights as a participant, that may have been provoked by the experience, Amy Wormald will be available for consultation, and will also be available to provide direction regarding medical assistance in the unlikely event of physical injury incurred during participation in the research.

Confidentiality of research results will be maintained by the researcher. My individual results will not be released without my written consent.

Signature

Date

There are two copies of this consent form included. Please sign one and return it to the researcher with your responses. The other copy you may keep for your records.

Questions and comments may be address to Amy Wormald, c/o Rebecca Hong, School of Education, Biola University, 13800 Biola Avenue, La Mirada, CA. 90639-0001. Phone: (562) 903-6000.

Appendix C: Interview Questions & Request Email

Hello My Favorite People In The World,

Thank you so much for taking my survey about autism! On the survey, you indicated that you would be ok with being contacted for a brief interview. If you wouldn't mind answering a few questions below, it would enhance my research and would help me understand more about your specialty. If you decide to answer the questions, please simply fill them in and email them back to me. Thank you again for your time and commitment to helping students with Autism Spectrum Disorder (ASD)!

Sincerely,
Amy Wormald

1. Experts now estimate (summer 2011) that 2.64% of students have ASD. This is a significant increase from past data. Would you agree with this figure based on students you have seen at your school? Do you think it is higher or lower? Why do you think this number continues to rise?
2. At your school, which type of ASD do you see most frequently (PDD-NOS, Asperger Syndrome, etc.)?
3. As a specialist, do you collaborate with others in your district who work with students with ASD? If yes, how so?
4. If you ran your own school, how would you “discover” students with ASD and how would you help them (Special Day class, mainstream, testing etc.)?
5. For my thesis I'm trying to answer the following two questions. If you have any advice or input please comment on them:
 - a. “Which ASD tests are currently being used in CA public schools?”
 - b. “Which tests are favored by the school employees who use them?”

Thanks again! Being an educator myself, I know how busy you are at this time of year, and I sincerely appreciate your time and help!