Intervention Selection For Students With Asperger's Disorder

Tracy Lynn Gappa
University of Northern Iowa

Copyright ©2000 Tracy Lynn Gappa
Follow this and additional works at: https://scholarworks.uni.edu/etd

Part of the Education Commons

Recommended Citation
Gappa, Tracy Lynn, "Intervention Selection For Students With Asperger's Disorder" (2000). Dissertations and Theses @ UNI. 1123.
https://scholarworks.uni.edu/etd/1123

This Open Access Thesis is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Dissertations and Theses @ UNI by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.
INTERVENTION SELECTION FOR
STUDENTS WITH ASPERGER'S DISORDER

A Thesis
Submitted
In Partial Fulfillment
of the Requirements for the Degree
of Specialist in Education

Tracy Lynn Gappa
University of Northern Iowa

December 1999
INTERVENTION SELECTION FOR
STUDENTS WITH ASPERGER'S DISORDER

An Abstract of a Thesis
Submitted
In Partial Fulfillment
of the Requirements for the Degree
of Specialist in Education

Tracy Lynn Gappa
University of Northern Iowa
May 2000
ABSTRACT

The diagnosis of Asperger’s Disorder (AsD) is a relatively recent possibility. Although first described in 1944, AsD was not recognized until its inclusion in the Fourth Edition of the Diagnostic and Statistical Manual of Mental Disorders in 1994. Due to the newness of the disorder and because of a lack of a consensual definition, there is considerable confusion among researchers in this field. For those children with characteristics of AsD, the confusion has resulted in misdiagnosis and, more importantly, inappropriate interventions.

Individuals with AsD have deficits in several areas that impair their ability to function normally in the educational environment, as well as in everyday life. Impairments in reciprocal social interaction and play especially influence success and enjoyment at school. In addition, both verbal and non-verbal social communication deficits result in inappropriate behaviors such as excessive bluntness or coldness toward peers and a lack of awareness of non-verbal feedback. There is currently a lack of research in the area of interventions and treatments for children with AsD, leaving practitioners “on their own” when intervening.

In this study, Iowa school psychologists were asked to select interventions to assist a student with AsD. Survey data were analyzed finding that: school psychologists recommended the same interventions for children diagnosed with AsD as for children not diagnosed with AsD, school psychologists perceived parents and teachers would be most likely to support a different intervention than school psychologists would recommend 42% of the time, school psychologists reported that time constraints and the need for additional
training or education for teachers and parents were the main reasons for the perceived
differences in intervention selection, and school psychologists who rated themselves as
“high skilled” were more likely to recommend an intervention that was not included on the
survey.
This Study by: Tracy L. Gappa

Entitled:

Intervention Selection for Students with Asperger’s Disorder

has been approved as meeting the thesis requirements for the

Degree of Specialist in Education

4/23/99

Date

Annette M. Iverson

Dr. Annette M. Iverson, Co-Chair, Thesis Committee

Melissa L. Heston

Dr. Melissa L. Heston, Co-Chair, Thesis Committee

Christine A. Macfarlane

Dr. Christine MacFarlane, Thesis Committee Member

John W. Somervill

Dr. John W. Somervill, Dean, Graduate College

4/23/99

Date

4/24/2000

Date
ACKNOWLEDGMENTS

I would like to express my gratitude to Dr. Robert Boody for his assistance with the statistics for this project and to the Iowa School Psychologists Association for providing the mailing database and the grant money that helped fund this project.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>vii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF FIGURES</td>
<td>ix</td>
</tr>
<tr>
<td>CHAPTER 1: INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Definition of Terms</td>
<td>3</td>
</tr>
<tr>
<td>Purpose</td>
<td>3</td>
</tr>
<tr>
<td>Statement of Problem</td>
<td>4</td>
</tr>
<tr>
<td>Research Questions</td>
<td>4</td>
</tr>
<tr>
<td>Importance of Study</td>
<td>5</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>5</td>
</tr>
<tr>
<td>CHAPTER 2: LITERATURE REVIEW</td>
<td>7</td>
</tr>
<tr>
<td>Historical Review</td>
<td>7</td>
</tr>
<tr>
<td>Incidence</td>
<td>13</td>
</tr>
<tr>
<td>Etiology</td>
<td>13</td>
</tr>
<tr>
<td>Genetic Factors</td>
<td>13</td>
</tr>
<tr>
<td>Prenatal, Perinatal, and Postnatal Trauma</td>
<td>15</td>
</tr>
<tr>
<td>Prognosis</td>
<td>18</td>
</tr>
<tr>
<td>Criteria for Differential Diagnosis</td>
<td>20</td>
</tr>
<tr>
<td>General Characteristics</td>
<td>23</td>
</tr>
<tr>
<td>Asperger’s Disorder versus Autism</td>
<td>26</td>
</tr>
<tr>
<td>Language Debate</td>
<td>33</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reported Skill Level for Academic interventions</td>
</tr>
<tr>
<td>2</td>
<td>Reported Skill Level for Communication Interventions</td>
</tr>
<tr>
<td>3</td>
<td>Reported Skill Level for Social Skills Interventions</td>
</tr>
<tr>
<td>4</td>
<td>Reported Academic Experience with Reported Academic Skill Level</td>
</tr>
<tr>
<td>5</td>
<td>Reported Communication Experience with Reported Communication Skill Level</td>
</tr>
<tr>
<td>6</td>
<td>Reported Social Skills Experience with Reported Social Skills Skill Level</td>
</tr>
<tr>
<td>7</td>
<td>Implications of Selecting Different Interventions for Items 1 and 2</td>
</tr>
<tr>
<td>8</td>
<td>Implications of Selecting Different Interventions for Items 6 and 7</td>
</tr>
<tr>
<td>9</td>
<td>Implications of Selecting Different Interventions for Items 11 and 12</td>
</tr>
<tr>
<td>10</td>
<td>Academic Intervention Recommendation According to Reported Skill Level</td>
</tr>
<tr>
<td>11</td>
<td>Communication Intervention Recommendation According to Reported Skill Level</td>
</tr>
<tr>
<td>12</td>
<td>Social Skills Intervention Recommendation According to Reported Skill Level</td>
</tr>
<tr>
<td>13</td>
<td>Academic Interventions Used with Students Diagnosed with AsD Compared with Students Not Diagnosed with AsD</td>
</tr>
<tr>
<td>14</td>
<td>Communication Interventions Used with Students Diagnosed with AsD Compared with Students Not Diagnosed with AsD</td>
</tr>
<tr>
<td>15</td>
<td>Social Skills Intervention Used with Students Diagnosed with AsD Compared with Students Not Diagnosed with AsD</td>
</tr>
<tr>
<td>16</td>
<td>Amount of Experience Implementing Academic Interventions</td>
</tr>
<tr>
<td>TABLE</td>
<td>PAGE</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>17</td>
<td>81</td>
</tr>
<tr>
<td>18</td>
<td>81</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>53</td>
</tr>
<tr>
<td>2</td>
<td>55</td>
</tr>
<tr>
<td>3</td>
<td>55</td>
</tr>
<tr>
<td>4</td>
<td>56</td>
</tr>
<tr>
<td>5</td>
<td>56</td>
</tr>
<tr>
<td>6</td>
<td>57</td>
</tr>
<tr>
<td>7</td>
<td>57</td>
</tr>
<tr>
<td>8</td>
<td>58</td>
</tr>
<tr>
<td>9</td>
<td>59</td>
</tr>
<tr>
<td>10</td>
<td>59</td>
</tr>
<tr>
<td>11</td>
<td>62</td>
</tr>
<tr>
<td>12</td>
<td>64</td>
</tr>
<tr>
<td>13</td>
<td>65</td>
</tr>
</tbody>
</table>

1. The cover letter
2. The first section of the survey, the case description
3. The academic section of the survey description describing the case study and survey item 1
4. Item 2 in the academic section of the survey
5. Survey item addressing the selection of different interventions for previous items
6. Survey item addressing perceived skill level at implementing the intervention selected
7. Survey item related to the number of times a school psychologist had implemented the selected intervention
8. The communication/social skills description of the survey describing the case study
9. Item 6 in the communication section of the survey
10. Item 11 in the social skills section of the survey
11. Graph showing intervention selection for items 1 and 2
12. Graph showing intervention selection for items 6 and 7
13. Graph showing intervention selection for items 11 and 12
CHAPTER 1
INTRODUCTION

Until recently, the term Asperger's Disorder (AsD) was relatively unrecognized outside the research field. First described in the 1940s, AsD went unknown in the United States until the 1980s. Since that time, recognition of the disorder has spread; however, lack of a consensual definition has resulted in considerable confusion among researchers. For those children diagnosed with AsD, there were many questions related to “what they had” as well as what interventions and treatments were available to help them. Without an official diagnosis, individuals with AsD and their families were poorly educated about the disorder. This situation began to improve with the inclusion of AsD in the American Psychiatric Association’s Diagnostic and Statistical Manual, Fourth Edition (DSM-IV; 1994).

Currently, AsD is believed to manifest itself after the age of three. Although exact etiology is unknown, it is tentatively believed to be multifactoral. Evidence from a study by Gillberg (1989) suggested some degree of genetic heritability. There is also some evidence that suggests pre-, peri-, and postnatal environmental influences may also play a role in this syndrome. The incidence of AsD varies, depending upon which diagnostic criteria are used to identify cases. Ehlers and Gillberg (1993) reported a minimum prevalence of 3.6 per 10,000 children with a male-to-female ratio of 4:1. Prevalence has been reported to be as high as 71 out of every 10,000 children (Gillberg & Gillberg, 1989) with estimates of male-to-female ratios as high as between 10 and 20 to 1 (Rickarby, Carruthers, & Mitchell, 1991).
Children with AsD generally have normal Full Scale IQ scores on the Wechsler scales (Attwood, 1998). However, deficits in several areas impair the ability of individuals with AsD to function normally in an educational environment, as well as in everyday life. One deficit, impairment in reciprocal social interaction and play, especially influences success and enjoyment at school. Children with AsD often have difficulty making and maintaining friendships due to deficits in their ability to have reciprocal interactions. In addition, both verbal and non-verbal social communication deficits result in inappropriate behaviors such as excessive bluntness or coldness toward peers and a lack of awareness of non-verbal feedback from peers (Myles & Simpson, 1998). These same deficits impair relationships with teachers as well. For example, a child with AsD may have to be verbally reminded again and again to get back on task because non-verbal cues are not understood.

Students with AsD are unable to express or understand their emotions or those of others. They also may not be able to generalize rules learned in one setting to another, making it necessary for multiple lessons on the same topic or rule, such as social etiquette. They may interrupt a class due to confusion, an inability to focus, overloading of the senses, or a lack of understanding of classroom rules or instruction. Myles and Simpson (1998) reported that these interruptions are not intended to interfere with class, but rather are "necessary" for the student with AsD in order to gain focus or clarity. Students with AsD may appear inflexible in the classroom and experience great difficulty adapting to an unplanned change in the schedule. The diversity and unpredictability of the school environment only adds to the difficulties already experienced by children with AsD.
(Jackel, 1996). Attwood (1998) reported that students diagnosed with AsD cope better in a structured, predictable environment, where rules are simple and clear.

**Definition of Terms**

American Psychiatric Association’s Diagnostic and Statistical Manual, Fourth Edition (DSM-IV; 1994) -- A resource which consists of descriptions of diagnostic categories in order to assist clinicians and investigators in studying, communicating about, diagnosing, studying, and treating a variety of mental disorders. The DSM-IV contains information relevant to the disorders such as diagnostic features, associated features and disorders, subtypes, specific culture and gender features, prevalence, course, and differential diagnosis.

**Pervasive Developmental Disorder (PDD)** -- A group of disorders in the DSM-IV defined by excessive and pervasive impairment in multiple areas of development such as communication skills, social skills, or the presence of stereotyped activities, interests and behaviors (DSM-IV, 1994). AsD and autism are both disorders in this group.

**Interventions** -- Interventions in this study are planned techniques designed to change the behavior of an individual student or students. Interventions focus on bettering a student’s acquisition of skills.

**Purpose**

The current project will investigate: (a) which interventions school psychologists recommend for a student diagnosed with AsD given there are no research supported recommendations to assist them, (b) whether school psychologists feel their recommendation would be supported by parents and teachers, (c) implications of
differences between school psychologists' recommendations and perceived teacher and parent support, (d) how skilled school psychologists perceive they are at assisting in implementing the intervention they selected, (e) how many school psychologists reported working with a student diagnosed with AsD, (f) whether experience appeared to influence intervention selection, and (g) whether or not school psychologists also recommended this intervention with a child not diagnosed with AsD.

**Statement of Problem**

Best practice indicates that school psychologists should recommend interventions with research support and on an individual basis. Although there is a minimal body of literature that indicates recommended interventions, currently no research support exists for interventions for students diagnosed with AsD. In addition, the literature with recommended interventions is recent, leaving many school psychologists without knowledge of recommended practices. Another issue affecting intervention selection is parent and teacher support. Without research evidence, intervention selection becomes limited to what supporting individuals believe is best and would be willing to implement. As a result, students diagnosed with AsD may not be receiving interventions which could be most helpful, but rather those which are most familiar or the easiest to implement.

**Research Questions**

1. What interventions do school psychologists recommend for students with AsD?

2. Which interventions do school psychologists perceive would receive the most support by the student's parents and his/her teacher?
3. How skilled do school psychologists rate themselves at implementing the interventions they selected?

4. Is reported skill level similar to the number of times school psychologists have implemented an intervention?

Importance of the Study

Knowledge of which interventions are selected by school psychologists could contribute to the professional knowledge base regarding the practice of school psychology as well as lead to education in the state of Iowa on the topic of AsD. Whether the recommendations of the school psychologists were perceived to be supported by parents and teachers may raise issues about whether children are receiving the most appropriate interventions in addition to the support necessary for the interventions to be successful. This may also raise issues about educating all professional educators about AsD.

Limitations of the Study

Participants were limited to interventions provided in the study unless they chose “Other” and wrote their own intervention. This study did not include a follow up mailing which may have broadened the sample. The sample size was relatively small and limited to school psychologists working in Iowa, where most districts implement a problem solving model as opposed to the traditional test and place model used in other states. Therefore, intervention selection may not be applicable or generalizable in other states. It is also possible that school psychologists who were familiar with or who had worked with a student diagnosed with AsD were more likely to respond to the questionnaire. As a
result, this study may have a lower percentage of input from school psychologists who were not familiar with AsD.
Despite its 55 year history, AsD has only been recognized as an official disorder for 5 years (DSM-IV, 1994). Even though AsD was not an “official” diagnosis, research in the 1980's did occur. This research focused on the etiology, prevalence, prognosis, and criteria for differential diagnosis of AsD. Currently, the etiology remains unclear and differential diagnosis is still debatable. However, the need for interventions for children diagnosed with AsD is growing and is becoming more relevant as more students are being diagnosed with the disorder.

There are three primary areas of weakness exhibited by children with AsD: (a) academic, (b) communication, and (c) social skills (Attwood, 1998). Although practitioners working in this field have made recommendations for working with a child with AsD it should be noted that these recommendations were not research based. Instead, these recommendations are based on the experience and expertise of some of the authors included in this study.

**Historical Review**

In a paper published in 1944, Viennese child psychiatrist Hans Asperger described a pattern of behaviors which he termed “autistic psychopathology.” This term described the abnormal personality structure of the children he worked with were similar to children with autism (Asperger, 1944/1991). According to Asperger, the main clinical features of the children he worked with included deficits in social skills, reciprocal interactions, and empathy. Asperger noted odd posture and gait, as well as clumsy large and small motor
movements in his patients. His patients also frequently exhibited an intense interest in a specific, narrow subject, such as cars or bus schedules. Asperger reported conversations that consisted of one-way interactions that were repetitive and pedantic, a term Asperger used to refer to the child's narrow and intense interests. His clients also exhibited poor nonverbal communication, often lacking facial expression and using inappropriate gestures such as pinching or tickling other children for no particular reason. Finally, these individuals enjoyed repetitive activities and resisted change in strict daily routines.

Asperger also noted these features were more common among boys and were seldom recognized before the age of three.

Asperger (1944/1991) firmly believed the disorder he described could appear in people of various levels of intelligence, even those with mental retardation. Asperger also believed the syndrome was transmitted genetically. However, in some cases such as where additional physical abnormalities were present, he attributed AsD to a different type of cause, such as encephalitis.

In the United States one year earlier (1943), Leo Kanner had described 11 children with "early infantile autism" (Asperger, 1979; Kanner, 1943; Miller & Ozonoff, 1997). Unlike Asperger's research, Kanner's findings became internationally well-known, describing what is now referred to as autism. Features of the children Kanner saw included language peculiarities such as delayed echolalia and pronoun reversal (Happe, 1994). These children also exhibited obsessive perseveration on routines, becoming extremely upset by changes of routine such as taking a different route home. The children generally had excellent rote memories, being able to memorize large amounts of
meaningless materials such as a list of names in a telephone book (Kanner, 1943). These children were also oversensitive to some stimuli, such as the hum of a fan or furnace. Kanner also observed repetitive body movements such as rocking or hand flapping. His patients showed some cognitive potential and often came from highly intelligent families, though this may have been the result of a referral bias. Perhaps most importantly, these children showed extreme social isolation and appeared happiest when left alone. This was evident from the earliest stages of life when these children did not use gestures to request to be picked up, nor did they “snuggle” when being held.

Although unaware of each other’s work, Asperger and Kanner’s descriptions were quite similar in many ways. Both chose the term “autistic” when describing their patients. The term comes from Bleuer (as cited in Happé, 1994) who used the Greek word “autos,” or self, to describe the social withdrawal of adults with schizophrenia. This similarity reflects the importance both Asperger and Kanner put on the social impairments associated with these disorders. The researchers both noted poor social interaction skills, such as a lack of eye contact and a lack of interest in the feelings or ideas of others. Happé reported that both Asperger and Kanner referred to strong, isolated interests exhibited by the children. The same problems in language use were also described by both authors (Wing, 1991). These problems included a lack of using language to interact with others, the long winded pedantic speech in AsD and children with autism who had enough speech, or the tendency to invent words. Wing (1981) used the term pedantic to describe the type of speech used by individuals with AsD. The term refers to bookish quality in one’s speech, or the use of obscure words when simpler words are more appropriate.
This differed from the way Asperger used the term (i.e., referring to narrow and intense interests rather than speech).

A clear separation from childhood schizophrenia was insisted on by both researchers. This separation was marked by improvement, rather than deterioration, of their patients over time; the absence of hallucinations; and the presence of abnormalities early on (Asperger, 1944/1991; Happé, 1994). Both authors noted the attractive appearance of the children they saw. Happé reported that both Asperger and Kanner described children who were resistant to change and extremely insistent toward routines. The two also described similar stereotypies of speech (repetition of words) and movement (such as rocking). Each researcher emphasized that the number of cases was dominated by boys. Finally, Asperger (1944/1991) and Kanner (1943) noted that the parents of these children also displayed “autistic” behaviors.

Happé (1994) identified three main areas where Asperger and Kanner reported different findings. Asperger described the motor abilities of his patients as clumsy, both in fine and gross motor skills. Kanner, however, reported clumsiness in only one case and reported skillful fine motor coordination (determined by the patients’ success on the Seguin form board and their ability to spin objects). In the area of learning, Asperger believed his patients were abstract thinkers whose spontaneous performances were their best performances. Meanwhile, Kanner noted that his patients were best at learning in a rote manner. The most evident difference between the two diagnoses was noted in language abilities. While Asperger reported each of his four patients spoke fluently, Kanner noted that three of his 11 patients never spoke, and the others did not use their
acquired language to communicate. Asperger described children who were generally able in language and social skills domains, whereas Kanner described children who displayed significant impairments in both domains. These differences provide the basis for the argument that AsD is a separate disorder from autism.

In a review of Asperger’s and Kanner’s work, Wing (1991) reported other discrepancies between the two disorders. Asperger reported onset in the third year or later, while Kanner reported the age of onset for autism to be within the first month of life. Asperger indicated that individuals in his study lived in their own world, but in their own way and evaded eye contact. Kanner believed eye contact was poor because children with autism lived in their own world and other people did not exist. Finally, the disorder described by Asperger was seen as a personality trait with good social prognosis, whereas Kanner’s autism was seen as a psychotic process with poor social prognosis.

Asperger’s early work (1944) went relatively unrecognized in the United States until Wing (1981) described the clinical characteristics of AsD and first penned the term “Asperger’s syndrome” to describe differences between those high functioning autistic individuals described by Asperger and individuals with Kanner’s autism (Happe, 1994). However, Wing modified Asperger’s descriptions according to her own clinical experience. Wing added a delay in language acquisition and suggested atypical development prior to age three may be evident. For example, the child might play with toys in a nontypical manner, such as spinning the wheels on cars rather than pushing the cars around. She also found children with AsD were not creative; for example, they did not exhibit pretend play. Wing was concerned about the children who exhibited less
severe autistic features and used the term Asperger’s Disorder as a means to recognize these individuals.

Most researchers have incorporated Wing’s suggestion into their diagnostic criteria. By the late 1980s, a consensus seemed to have emerged. Burd and Kerbesian (1987) described five features of individuals with AsD: speech was pedantic and stereotyped; non-verbal communication was impaired; social interactions were peculiar and lacked empathy; interests were circumscribed and included repetitive activities; and movements were clumsy and stereotyped. Tantam (1988) and Gillberg and Gillberg (1989) included nearly the same characteristics in their criteria for diagnosis.

As a result of increased interest in and research on Asperger’s Disorder, recognition of AsD has spread, particularly over the past few years, and the prevailing view is that AsD is its own disorder. In 1994, AsD became a diagnostic category of the Pervasive Developmental Disorders (PDD) in the DSM-IV. However, there is still an ongoing debate among investigators as to whether AsD is a discrete disorder or is part of the autistic continuum, designated as high functioning autism (HFA). Some researchers argue AsD actually describes a type of high functioning autism (Schopler, 1985, 1996; Volkmar, Paul, & Cohen, 1985) while others believe AsD should have its own clinical diagnosis (Bowler, 1992; Gillberg, 1991; Gillberg & Gillberg, 1989; Mahoney et al., 1998; Ozonoff, Rogers, & Pennington, 1991; Szatmari, Bremner, & Nagy 1989; Tantum, 1988, 1991; Wing, 1981, 1986, 1991). These researchers base their argument on the diagnostic criteria that differentiate AsD from autism.
Incidence

Data on the prevalence of AsD are limited, and prevalence rates vary considerably according to the particular diagnostic criteria used within a given study. Based on a study in Sweden involving 13,000 subjects, Ehlers and Gillberg (1993) reported incident rates of 0.29% when the criteria for the International Classification of Diseases (ICD), Tenth Revision draft (World Health Organization, 1990; as cited in Ehlers & Gillberg, 1993) were applied. The application of the Szatmari, Bremner, et al. (1989) and Gillberg and Gillberg (1989) criteria to the same subjects resulted in incidence rates that were nearly twice as high, 0.5% and 0.6% respectively. It is estimated that AsD is much more common in boys than girls. Ratios range from 4:1 (Ehlers & Gillberg, 1993; Gillberg, 1989) to 9:1 (Wing, 1981) to as high as between 10 and 20 to 1 (Rickarby et al., 1991).

Etiology

Following is a review of the literature describing possible causes of AsD. Family history as well as experiences with prenatal, perinatal or postnatal stress have most often been reported as factors associated with AsD. However, the precise etiology of AsD is unknown and likely to be multifactorial.

Genetic Factors

As early as his original paper, Asperger (1944/1991) noted similarities in social behavior between parents and children with AsD, particularly between fathers and sons. The DSM-IV (1994) reported a higher frequency of cases of AsD in the family histories of individuals with AsD. According to a literature review of family studies by Bonnet (1996), having one child with AsD increased the risk of having more than one AsD or
autistic individual among siblings to 6%, which is 200 times the incidence rate of the
general population. Gillberg (1989) also reported several incidences of AsD in the same
family. Parents of individuals with AsD were reported to have mild social deficits similar
to those seen in individuals diagnosed with AsD in 13 of the 23 cases in the study.
Support of genetics as a causal factor also was provided by Burgoine and Wing (1983) in
a case study of identical triplet males with AsD.

Baron-Cohen and Hammer (1997) tested the genetic hypothesis of AsD by giving
parents of children with AsD the adult versions of the Embedded Figures Test (EFT) and
The Reading of the Mind in the Eyes Test (Eyes Test). Thirty parents (15 couples) of
children with AsD, were matched with 30 parents of children without autism or AsD.

In the EFT (Witkin, Oltman, Rasking, & Karp, 1971) the subjects were given up
to three minutes to find a simple target shape in a more complex design. Subjects worked
as quickly as possible and each item was timed. The complex design, which the subject
described to ensure he/she was attending, was presented for 15 seconds. Then the
complex design was removed and the simple target shape was presented for 10 seconds.
This process was repeated for test 12 items. The Eyes Test consists of 25 different facial
photographs of the eye region taken from magazine photos. All photos showed the same
region, midline along the nose to slightly above the eyebrow. Each photo was shown for
3 seconds, and then a choice of two mental states was given. Subjects had five seconds to
respond.

Results indicated that first-degree relatives of persons with AsD displayed a milder
degree of Asperger traits than parents of children without AsD or autism. Parents of
children with AsD were significantly faster on the EFT than control parents and significantly less accurate at reading mental states by viewing photographs of the eye regions of the face. Normal males, compared to normal females, tended to be slightly faster on the EFT and slightly, but significantly, less accurate on the Eyes Test. Differences were slightly increased in the test results of fathers of children with AsD were compared with control fathers. The authors concluded that first degree relatives of children with AsD exhibit a lesser variant of the cognitive profile of AsD. Results also seemed to indicate that deficits in responding appropriately to facial expressions may be related to a broader deficit in interpreting mental states. Although no specific conclusions regarding heritability can be made from these studies, they indicate the possibility of a genetic influence. It is also possible that children with AsD learned these behaviors by modeling their parents, particularly fathers. More research in this area must be conducted before any definitive conclusion can be drawn.

Prenatal, Perinatal, and Postnatal Trauma

Although etiology remains undetermined, prenatal, perinatal and postnatal stress have been reported in multiple case studies on AsD and may be related to the severity of the disorder, exacerbating the severity of symptoms in some cases. In a case study of 17 year-old, male triplets diagnosed with AsD, Burgoine and Wing (1983) found the boy who had experienced the most perinatal and postnatal difficulties exhibited the most severe expression of AsD. Data were collected through studying case histories and hospital notes. The Handicapped Behavior and Skills Schedule (HBSS; Wing & Gould, 1978) was given to the three boys to elicit clinical information for a diagnosis and assess the
children’s level of development and degree of behavioral abnormality. Medical examinations, the Wechsler Intelligence Scale for Children, Third Revision (WISC-III; 1987), chromosomal examinations, and a test for zygosity were also conducted. At the time of the study, the mother reported experiencing severe emotional stress during the pregnancy (due to unreported reasons) as well as a loss of weight (amount unspecified) during the last trimester. She also had hypochronic anemia and was admitted to the hospital the last month of her pregnancy. All three children were born breech and were placed in incubators. Wayne weighed the least at birth (3 lb., 11 oz. compared to 4 lb., 6 oz. and 4 lb., 2 oz.), was somewhat blue in color and required oxygen, and remained in an incubator the longest (4 ½ weeks). No additional information was provided. At the age of one, Wayne was infected with pneumonia and was hospitalized for one month.

HBSS results indicated that of the three boys, Wayne was the most distant, liked social contact the least, objected most to change, and had the most difficult behavior. Meanwhile, Ronny, the triplet who had the fewest perinatal problems and weighed the most at birth, was the most social and the most able physically and academically. Results of the WISC-III showed Ronny and Bill had scores in the normal range, while Wayne’s scores were in the upper end of the mildly retarded range. The Vineland Adaptive Behavior Scales survey measured adaptive functioning in communication, socialization and activities of daily living. The Vineland social quotients indicated that all three boys were in the severely deficient range, with Wayne being the most deficient and Ronny the least deficient. This was generally the pattern found throughout this study. Results of the
zygosity test indicated a .9975 likelihood that the triplets were monozygous. Although this study did not resolve the role genetic influence plays in AsD, it suggested that trauma before, during, or after birth may be related to the severity of AsD.

In a study of 23 children with AsD, Gillberg (1989) found that almost 50% \((n = 10)\) of the subjects experienced prenatal or perinatal trauma that might have resulted in brain damage. Among these 10 children, 8 were also reported small for their gestational age or experienced toxemia.

Similar findings were reported by Szatmari, Bremner, et al. (1989). Their data indicated an increased frequency of complications during pregnancy and/or the neonatal period of subjects with AsD. These complications included prematurity or postmaturity, abnormal birth presentation, or anoxia. However, the increase in these complications was not statistically significant.

Wing (1981) compiled a report describing the etiology, clinical features, course, epidemiology, differential diagnosis, and management of AsD based on the author's own patients and patients studied by Asperger. In three of Wing's six case studies patients with AsD had a history of pre-, peri-, or postnatal difficulties (e.g., lack of oxygen at birth) that could have resulted in cerebral damage. One patient was born four weeks prematurely and had feeding problems the first two weeks following birth. Another patient had to be delivered by forceps, experienced trouble breathing which resulted in cyanosis, and was kept in special care for two weeks. The third child had his head accidentally bruised at six months (although severity was not reported) after which his
mother noted a change in behavior. She reported the child became socially aloof and isolated.

It is important to note that the work of Wing (1981) and Gillberg and Gillberg (1989) came before the ICD-10 (World Health Organization, 1993) or DSM-IV (1994) AsD criteria were official. This may have affected the number of patients diagnosed by those authors since individuals with mental retardation and delayed speech cannot be given a label of AsD according to the ICD-10 and DSM-IV definitions. These studies suggest that pre-, peri-, and postnatal trauma may influence the severity of AsD or be linked to AsD in some other way. However, research in this area is limited. Further study in this area is necessary before definitive conclusions can be made.

**Prognosis**

The prognosis for persons with AsD is better than that for persons with autism (Gillberg, 1991; Nordin & Gillberg, 1998). Although information is limited because of the newness of the diagnosis, reports indicate that children with AsD are likely to become independently functioning adults. Currently, indirect observations (i.e., observations made during office visits with a child diagnosed with AsD) of relatives who appear to have AsD themselves have been one of the best sources for predicting the prognosis for children with AsD (Bauer, 1997). Persons with AsD can live independently, hold full time jobs, and have families (Attwood, 1998; Bauer, 1997; Gillberg, 1991).

Gillberg (1991) reported that adults with AsD typically hold jobs. Employment was often in the area of their consuming interest, such as math or science (Bauer, 1997). Persons with Asperger’s have been described as extremely diligent, reliable, and insistent
on quality over quantity (Attwood, 1998), characteristics that are often valued by employers. However, adults with AsD often experienced difficulty socializing with coworkers (Attwood, 1998), had restricted and repetitive interests, and used formal and pedantic speech (Gillberg, 1991). Attwood reported that jobs with regular routines, as well as an employer and coworkers who are aware of and sensitive to needs and limitations of the person with AsD, would be ideal.

In his recent book, Attwood (1998) described the relationships of individuals with AsD. They often meet their partners through their career and they are extremely dependable, honest, and faithful in their relationship. However, at times the person with AsD confuses and upsets her/his partner. Physical and emotional intimacy is challenging for people with AsD, as they have difficulty with the expression of love. For example, people with AsD do not understand why they should say “I love you” to others who already know. Also, the dominance of the special interest often interferes with other priorities.

Several authors found an increased risk of mood disorders such as depression and anxiety as children with AsD become adults (Bauer, 1997; Gillberg, 1991; Tantam, 1988; Wing, 1981; Wolff & Chick, 1980). A relationship between AsD and affective illness/depression as adults was reported by Wing and Tantam. Wing reported that 40% of the patients in her study had affective illness or depression, while two of the 18 had attempted suicide. Suicide attempts seem to be a main expression of such problems. In comparison, community rates for depression reported in the DSM-IV (1994) ranged from 10%-25% for women and 5%-12% for men. In a study of 19 individuals with AsD, Wolff
and Chick (1980) reported that 10 AsD subjects expressed suicidal thoughts compared to two individuals in the control group, and that five AsD individuals had attempted suicide by early adulthood. These attempts included cutting wrists (n = 2), taking drugs (n = 2), and suffocation (n = 1). None of the controls had attempted suicide.

While there is some evidence of patients with AsD developing schizophrenia, this evidence does not establish a clear relationship. For example, Asperger found schizophrenia in one of his 200 patients (Asperger, 1944/1991); however, this finding has not been repeated in other studies. Despite the fact that bizarre and borderline behaviors (e.g., intense preoccupations with rubbish and rubbish disposal (Tantam, 1991) are reported in late adolescence and throughout adult life, the diagnosis of schizophrenia is very rare (Gillberg, 1991; Tantam, 1986, as cited in Frith, 1991).

Criteria for Differential Diagnosis

There have been four different diagnostic criteria developed for AsD in recent years and there is presently no universal agreement on which to use (Attwood, 1998). The first two were developed by clinicians, the latter two by organizations. Until AsD became an official disorder in the ICD-10 (1993) and the DSM-IV (1994), the criteria established by Gillberg and Gillberg (1989) and Szatmari, Bremner, et al. (1989) were used by most researchers in the field. Attwood reported that the most stringent and restrictive criteria are those put out by the ICD-10 and the DSM-IV.

Based on their studies in Sweden, Gillberg and Gillberg (1989) identified six criteria for diagnosing AsD. Social impairments marked by extreme egocentricity and at least two of the following behaviors constitute Criterion 1: (a) inability to interact with
peers, (b) lack of desire to interact with peers, (c) lack of appreciation of social cues, and (d) socially and emotionally inappropriate behavior. Narrow interest marked by either the exclusion of other activities, repetitive adherence to specific activities, or engaging in more rote learning than meaningful learning make up Criterion 2. To meet Criterion 3, Speech and Language peculiarities, clients must exhibit at least three of the following behavioral patterns: (a) delayed development (in comparison with that expected from the child’s social language background), (b) superficially perfect expressive language, (c) formal pedantic language, (d) odd regulation of voice or peculiar voice characteristics, and (e) impairments of language comprehension including misinterpretations of literal and/or implied meanings. This last criterion differs significantly from the other diagnostic criteria for AsD; the DSM-IV (1994), ICD-10 (1993), and the Szatmari, Bremner, et al. (1989) criteria specify no general delay in spoken or receptive language as part of the criteria for an AsD diagnosis. Non-verbal communication problems, including at least one of the following behavior patterns, make up Criterion 5: limited use of gestures, clumsy and/or gauche body language, limited facial expression, inappropriate facial expression and peculiar gaze (does not make eye contact). The sixth criterion, motor clumsiness, is unique to the Gillberg and Gillberg (1989) criteria. Motor clumsiness is defined by poor performance on a neuro-developmental examination.

The diagnostic criteria of Szatmari, Bremner, et al. (1989) consist of five criterion, three that focus on social deficits. These deficits refer to high frequencies of solitude and include at least two of the following descriptions: no close friends, avoids others, no interest in making friends, and/or a loner. The impaired social interactions of AsD
individuals consist of at least one of the following behavior patterns: approaching others only to have one’s own needs met, a clumsy social approach, one-sided responses to peers, difficulty sensing the feelings of others, and a strong detachment from the feelings of others. At least one of the following behaviors must be characteristic of the impaired nonverbal communication of AsD patients: limited facial expression, inability to read emotion from facial expression of another child, inability to give messages with the eyes, avoidance of looking at others, failure to use hands to express oneself or, use of gestures that are large and clumsy or coming too close to others. Several aspects in these criteria were not emphasized in the criteria by Gillbergs, such as having difficulty sensing the feelings of others or being detached from them, not looking at others, not being able to “give messages with the eyes,” and coming too close to others (Attwood, 1998). The criterion characteristics for odd speech consist of abnormalities in inflection, talking too much or too little, non-cohesive conversations, idiosyncratic use of words, and repetitive patterns of speech. For a diagnosis of AsD to be made, the person must display at least two of these speech difficulties. Finally, the person must not meet DSM-III criteria for autistic disorder.

The criteria established by the World Health Organization in the ICD-10 (1993) are nearly identical to the clinical standards and requirements of the DSM-IV (1994), although the ICD-10 notes that the distinction between AsD and HFA is still controversial (Klin, Volkmar, Sparrow, Cicchetti, & Rourke, 1995). The ICD-10 stresses that the child’s social play will reflect an inability to identify play behavior according to the social
context and to spontaneously seek to share the interests, enjoyment, or achievements of others (Attwood, 1998).

Myles and Simpson (1998) noted that the most widely used criteria are those included in the DSM-IV (1994). The first criterion consists of severe and sustained impairment in social interaction. This criterion includes a failure to develop, or a failure in the desire to develop, friendships as well as a lack of social or emotional understanding. For example, individuals with AsD typically do not recognize the needs or the distress of others. Other criteria include the development of restricted, repetitive patterns of behavior, interests, and activities, such as an insistence on routine, stereotyped and repetitive motor mannerisms, and a persistent preoccupation with the parts of objects. Impairments must be clinically significant in social, occupational, or other important areas of functioning. There must not be a clinically significant delay in language or cognitive development, in the acquisition of appropriate self-help skills, in adaptive behavior, or in curiosity about the environment during childhood. Also, a diagnosis of AsD cannot be made if criteria for another specific PDD or Schizophrenia have been met.

Interestingly, the DSM-IV (1994) criteria are almost identical to the criteria for autism; however, differentiating criteria for a diagnosis of AsD include: exhibiting no clinically significant delays in cognitive or language development, or in the development of age-appropriate self-help skills, adaptive behavior, and curiosity about the environment.

General Characteristics

Wing (1981), in a literature review and a series of case studies, presented general characteristics of AsD based on her own experiences with children with the disorder.
Wing included items in developmental history not previously mentioned by Asperger such as a lack of the urge to communicate in general, including less gesturing, movement, smiling, laughing, babbling, and speaking than is exhibited by normal babies and toddlers. Imaginative play was often absent but, if present, consisted of one or two themes repeated over and over.

Wing (1981) also disagreed with Asperger's observations in two areas. While Asperger noted that speech developed before walking, Wing found slightly less than half of her 34 patients walked at the usual age but were delayed in speaking. Half of her subjects talked at the normal age but were slow to walk. One walked and talked at the expected times. Along with this discrepancy, she described speech content as impoverished and as being imitated inappropriately from people or books. Secondly, Asperger reported that individuals in his studies were capable of original and creative work in their careers. Wing described their thought processes as narrow, pedantic, and methodical. He argued that creativity may be possible but only in very few, specific areas. Since 1981, clinical descriptions have changed based on continued research.

Szatmari, Bremner, et al. (1989) conducted a study that described some of the clinical features of AsD. Subjects included 28 children and adolescents diagnosed with AsD based on an adapted version of Wing's (1981) description. The outpatient control group (OPC) consisted of children and adolescents referred for social withdrawal or peer relationship problems. Parents of the subjects were given a 40-item structured parent interview, as well as a detailed questionnaire regarding the pregnancy, birth, and neonatal periods. A family history and a child medical history were completed. A Vineland
Adaptive Behavior Scales-Survey form (Sparrow, Balla, & Cicchetti, 1984) was also completed on each child with AsD.

Results of the Vineland Adaptive Behavior Scales indicated subjects in the AsD group were impaired and scored in the “mentally disabled” range in socialization. Differences between the groups in socialization included parents’ reports of the children with AsD as having a very clumsy social approach, having mostly one-way interactions, and having difficulty reading the feelings of others; these behaviors were rarely reported by parents of the controls. Three of the 28 AsD patients had definite neurological disease, while none of the OPC group scored positive for any neurological disease. Impairments in non-verbal communication and reports of odd speech (for example, flat or exaggerated intonation) were more frequent in the AsD group. Finally, a lack of cohesion in conversation was “always” reported for the AsD group, while this was noted only during parent-child conflict for the control group. Significant differences were not found between the groups for problems experienced during prenatal or neonatal periods.

Significant differences between the AsD group and controls were also found in several areas related to language. Differences were found in these subcategories: abnormalities of inflection, talking too little or talking too much, idiosyncratic use of words, one-sided social interactions, and repetitive speech. Abnormalities of inflection were described as either monotonous, inappropriate or exaggerated and were measured by three parent interview items. Talking too little and talking too much were defined as either non-communicative or long winded and pedantic and were measured by four items on the parent interview. Idiosyncratic use of words included using words uniquely out of
context or applying the literal meaning of words and was measured by five interview items.

The authors concluded that children with AsD exhibit different impairments in socialization and communication than do children with more usual childhood psychiatric disorders and that verbal and non-verbal communication impairments prevent children with AsD from modulating social interaction impairments. Based on the severity of interactions they observed, these authors believed AsD is a mild form of autism, however, why some people develop autism and others AsD remained unanswered. Prognoses for treatment were considered positive and the authors suggested social skills interventions at several levels including at home and in the school, as well as screening for learning disabilities, particularly comprehension. Finally, authors hypothesized AsD may be more common than originally thought.

Asperger's Disorder and Autism

AsD and autism are similar in several ways, which can make differentiating between the two difficult. The two disorders share common etiologies. For example, both have a similar sex ratio (boys outnumber girls) and a similar family pattern. Both disorders are characterized by social skills deficits such as failure to make eye contact, failure to make friends, lack of emotional or social reciprocity, and a lack of seeking to share accomplishments or interests with other people (DSM-IV, 1994). Patterns of interest, behaviors and activities that are narrow, repetitive, and stereotyped are present in both AsD and autism (DSM-IV). For example, a child with autism or AsD may get upset over a change in routine or may be preoccupied with lining up blocks or match box cars.
However, there are several features that distinguish AsD from autism. Gillberg (1989) reported that AsD symptoms were less severe than autistic symptoms. Additionally, AsD symptoms generally tend to appear later in development than do autistic symptoms, for which onset must be prior to age three (DSM-IV, 1994; Eisenmajer et al., 1996; Gillberg, 1989). Individuals with AsD also exhibit considerably greater verbal abilities than persons with autism.

Severe and sustained impairments in social interaction are essential diagnostic features of both AsD and autism (DSM-IV, 1994). Whereas children with autism show little if any interest in social interactions, AsD subjects often want social interaction, but do not have the skills to be successful in them. For example, children with AsD carry on one way, one topic conversations that generally focus on their subject of interest without regard to their listeners’ interests or needs. These interactions are also characterized by pedantic speech patterns and the use of idiosyncratic words (Bowler, 1992; Eisenmajer et al., 1996; Fine, Bartolucci, Szatmari, & Ginsberg, 1994; Gillberg, 1989; Szatmari, Bartolucci, & Bremner, 1989). Children with autism, however, tend to show no interest in social interaction action, do not make eye contact with others, and appear happiest when left alone (Happe, 1994).

Another disagreement related to diagnostic criteria involves the characteristic of clumsiness. Before the publication of the DSM-IV (1994), researchers in AsD used Asperger’s descriptions to identify persons for the purpose of investigating and elaborating on a variety of impairments including cognitive delays and early language development (Gillberg, 1989; Szatmari, Bartolucci, et al., 1989; Tantam, 1988; Wing,
1981). These researchers noted clumsiness and pedantic or unusual speech (another area of debate) as essential criteria for diagnosis of AsD, as were social deficits and circumscribed interests (Eisenmajer et al., 1996). Clumsiness is no longer included as a major diagnostic feature for AsD (Ghaziuddin, Tsai, & Ghaziuddin, 1992). However, the presence of clumsiness is noted in the DSM-IV and it appears in many cases (Tantam, 1988). For instance, Gillberg and Gillberg (1989) reported that almost all of the 23 children in their study exhibited poor overall performance on the neurodevelopmental examination.

Gillberg (1989) conducted a study that attempted to determine whether a clear distinction could be made between autism and AsD. One group of subjects consisted of 23, 5-18 year-old, children and adolescents who fulfilled the first five criteria for the Gillberg and Gillberg (1989) criteria for AsD. Clumsiness, the sixth criteria, was excluded in an attempt to determine whether it could be used as a differential symptom between AsD and autism. A comparison group was made up of 23 individuals with a DSM-III diagnosis of autism. Subjects were matched for age and Wechsler Full Scale IQ. Subjects' social class was assigned according to their father's occupation. Mothers were interviewed about the presence of other conditions such as autism and learning disorders. All but two of the participants were given the Griffiths IQ scale, while many had been assessed with other instruments as well, generally the WISC-III and the Leiter scales. The Autistic Behavior Checklist (ABC; Krug, Arick, & Almond, 1980) was given during interviews with the mother and used to rate the severity of autistic symptoms of the child. Scores of 70 or higher on this scale are typical of children with autism. The presence of
trauma during prenatal, perinatal, and neonatal periods was assessed using medical records. The following neurobiological exams were given in 12 of the 23 cases of AsD: an EEG, an auditory brainstem response (ABR) exam, a CAT-scan of the brain, and a chromosomal exam. Eight of the individuals completed one, two, or three of these exams, while three did not complete any. Of the children with infantile autism, 20 of the 23 completed all four of the examinations, while two only completed the chromosomal exam and the EEG, and one did not complete any of the exams. A two hour clinical assessment by the author was also conducted.

Results indicated significant differences between the group with AsD and the group with autism in 2 of 14 background factors: high parent IQ in at least one parent (based on clinical judgements) and problems associated with AsD exhibited by a parent. The group with AsD exhibited higher levels of both of these factors. In clinical characteristics, three of eight categories and one subcategory (extreme echolalia within the language problems category) presented significant differences. Being bilingual before the age of 10, motor clumsiness, and circumscribed interests were more often found in the AsD group, while extreme echolalia was found more often in individuals with autism than individuals with AsD.

Results did not differ between the groups in the sex ratio, social background, or neurobiological findings. No differences were found between the two groups for prenatal, perinatal, or neonatal problems or clinical characteristics such as ABC score, school achievement, intellectual level, general language problems, and number without a peer with whom they could play once a month. Gillberg (1989) concluded that individuals with
AsD were not so pervasively impaired as those with autism. Gillberg also formed the following hypotheses: (a) individuals with AsD exhibit relatively poorer motor skills, (b) although children with AsD are late in acquiring speech, expressive speech is better than that of individuals with autism, and (c) children with AsD are not regarded as deviant until 30-36 months, whereas children with autism are regarded as deviant within their first year.

In a study to determine whether it is possible to identify subtypes of PDD, Szatmari, Bartolucci, et al. (1989) found significant differences between an individuals with AsD and individuals with autism. Two of the groups, one group of 28 patients with AsD and an outpatient control group of 42, were the same subjects as those used by Szatmari, Bremner, et al. (1989). A second comparison group, a group of 25 high functioning autistic individuals with a Full Scale IQ greater than 65, was used in this study. Data were collected through a parent interview using the Interview for Social and Communication Disorders (ISCD) and parts of the Diagnostic Interview for Children and Adolescents (DICA). Children were interviewed using the DICA and information was collected from school history forms. Information on each child’s early history in the areas of social responsiveness, deviant language, bizarre behavior, impairments in nonverbal communication, clumsiness, and age at onset were gathered during the parent interview.

Significant differences were found between the AsD group and the HFA group on the social responsiveness measures. Children with AsD were more interested in social relationships than the children with HFA. Significant differences were found in other areas as well. Language development was more deviant in the HFA group; however, rates of repetitive speech patterns and low speech motivation were similar for the HFA and AsD
groups. Bizarre behavior measures, such as preoccupations with the sameness, were higher in the HFA group. However, no differences were found between the two groups (HFA and AsD) in nonverbal communication, sensitivity to unusual stimuli, or clumsiness.

These authors concluded there were no substantial, qualitative differences between the HFA and AsD groups and suggested that clinical differences probably reflect differences in the severity of a single disorder rather than two distinct disorders. However, these clinical differences were not trivial; no AsD subject had ever been diagnosed with autism, although they had been given other confusing labels such as borderline schizophrenia or adjustment reaction. As a result of such labeling, these authors suggested that AsD may be more common than originally thought. Data also indicated that AsD and autism resulted in different outcomes for individuals with these disorders. For example, those with autism spent significantly more time in special education. The authors noted that an age discrepancy between the AsD and HFA groups could have accounted for some of this difference.

Eisenmajer et al. (1996) completed a study to determine what clinical characteristics clinicians had been using to differentiate AsD from autism. Subjects included 48 children diagnosed with autism and 69 individuals diagnosed with AsD. Subjects and their parents completed an interview based on the diagnostic criteria of the DSM-III-R (1987) and ICD-10 (1993).

Results indicated that the only developmental and family variables that predicted diagnosis were those of delayed language onset. Several clinical differences between AsD and autistic subjects were noted. Subjects with AsD were more likely to participate in
more social behaviors than the children with autism. Unlike subjects with autism, avoiding eye contact was less severe in individuals with AsD when they were young, and their capability and desire to play with others increased as they got older. Early speech in subjects with AsD was less likely to be echolalic than children with autism. Turn taking during conversation was also absent in the speech of children with AsD. From an early age, subjects with AsD were more likely than autistic subjects to engage in monotone, lengthy, pedantic patterns of speech, talk repeatedly about one topic, and ask repetitive questions. Finally, although DSM-IV (1994) diagnostic criteria for AsD specify no language delay is present, Eisenmajer et al. (1996) found 43% of the AsD subjects in this study were reported to have experienced language delays. The authors concluded that researchers were diagnosing AsD and autism on the basis of published research, as opposed to official diagnostic criteria, which raised the concern of whether the ICD-10 (1993) and DSM-IV criteria adequately describe AsD, particularly in the area of communication. Finally, outcomes are said to be more positive for AsD than autism. Szatmari, Bartolucci, et al. (1989), when comparing outcomes for AsD and autism, reported more positive educational outcomes for individuals with AsD.

There are two main reasons for differentiating between AsD and autism. Connotations associated with a diagnosis of autism are considered more negative than those associated with AsD because of the degree of severity of the disorder and projected outcomes. The other, perhaps more important, reason is for differentiating between AsD and autism is related to implications for appropriate interventions.
**Language Debate**

Although the course of childhood language development is usually agreed upon by professionals, disagreements about the time of language onset for children with AsD exist (Myles & Simpson, 1998). Asperger observed that language onset occurred at the appropriate age, while Wing (1981) reported that many individuals with AsD were slow to talk. Later Frith (1996) indicated that children with AsD acquire fluent speech by the age of five, even if the development of language was slow at first, and even if their use of language for communication is odd. Currently, according to the DSM-IV (1994), the diagnostic criteria for language development in AsD specify that there is “no clinically significant delay in language” (p. 77). However, Twachtman-Cullen (1997) noted that the language of individuals with AsD is impaired for social communication purposes. Also, many researchers believe that most persons with AsD do not develop language normally, but rather go through a stage in which language abnormalities similar to those seen in autism are manifested (Wing, 1988).

**Academic Characteristics**

Students with AsD often have difficulty in the classroom. Although they usually have average to above average intelligence, school can be difficult for many reasons. Students diagnosed with AsD are often disorganized, inattentive, and distractable many have been given a diagnosis of ADHD at one time or another because of these deficits (Myles & Simpson, 1998). These behaviors are usually the result of difficulty focusing on and choosing what is important, tending to want to think about their primary area of interest, and lacking the ability to self-monitor (Attwood, 1998; Myles & Simpson, 1998).
Students with AsD may also be hypersensitive to certain stimuli and may engage in repetitive or unusual behaviors in order to achieve sensory stimulation (Attwood, 1998); as a result, the student is off-task. Attwood and Myles and Simpson reported that these deficits result in poor problem solving, difficulties with comprehension, and difficulties understanding abstract concepts. These authors also reported that because the students' thinking is so rigid they may also have difficulty adapting to change, dealing with a lack of success, and understanding the intent of words with more than one meaning. Attwood reported that students with AsD also have difficulty with generalization. For example, they may learn to use an encyclopedia to assist them when writing a report for English, but not generalize this to a similar need during History. Similarly, Attwood reported that students with AsD do not easily learn from their mistakes and therefore, need multiple reminders.

Another common problem for students with AsD is a lack of motivation. Completing an assignment because it was assigned by a teacher is often not reason enough, especially if it seems to lack relevance to life. It is also possible that the student does not make the connection to its relevance for life. However, an explanation of its relevance is often ineffective because the student may not understand the explanation (as a result of rigid thinking) or taking the time for such an explanation is actually rewarding for the student because he/she is avoiding the task (Myles & Simpson, 1998).

Students with AsD exhibit academic strengths as well, although these strengths are often limited by deficiencies in related areas. Often students with AsD demonstrate strong mechanical reading skills, (such as decoding and word recognition), however, they also
frequently experience difficulties with the comprehension of passages and are unable to generalize what they read to their lives (Donnelly & Levy, 1995; Myles & Simpson, 1998). Myles and Simpson reported that this creates problems as the student moves into higher grade levels because understanding and application become more important. Remembering factual information is generally a strength for these students, however, they also have difficulties putting pieces together (Myles & Simpson, 1998). For example, performing several step directions may be difficult for the student with AsD. The difficulty of checking for understanding is compounded because although these students may be able to repeat the directions back to you, they have no idea how to proceed with the task. Generally students with AsD are more successful with visual input, but have difficulty processing auditory input. Finally, Myles and Simpson reported that students with AsD do well when academic topics are related to their area of intense interest and can problem solve in this context.

Communication / Social Skills

Difficulties in the areas of communication and social skills are dominant in students with AsD. These areas are closely linked and problems in one area often result in problems in the other area. For example, an inability to read the feelings of others makes it impossible for the individual with AsD to communicate feelings of empathy. A lack of successful communication and appropriate social skills make daily living more difficult and often result in further alienation of students with AsD.

Researchers have defined social skills as distinct behaviors that guide children in solving social tasks or gaining success in social interactions (Rubin, Bukowski, & Parker,
Social skills include thoughts, emotions, and the management of observable behaviors. These broad categories can be further broken down into discrete social skills. The following list, based on a compilation by Rubin et al. (1996), includes many of the skills necessary in social life: (a) understanding the emotions, thoughts, and intentions of others; (b) summarizing information about a social partner and the context of the interaction; (c) having the skills to open, maintain, and successfully complete a conversation; (d) understanding the consequences of one's social interactions on oneself and the social partner; (e) guiding social interaction through mature judgments; (f) expressing feelings appropriately; (g) inhibiting the sharing of negative feelings one may have about the social partner; (h) communicating verbally and nonverbally in a manner that enhances a partner's social comprehension; (i) attending to the partner's communicative attempts; and (j) complying with the partner's social requests. The application of discrete skills such as these determines the achievement of social success.

Unfortunately, not all children demonstrate the social skills listed above, and individuals with AsD often have clearly identifiable deficiencies in these skills. Because of their actions, manner of speaking, and odd behavior, children with AsD are often treated cruelly and teased by other children (Asperger, 1944/1991). Lack of friendships, the presence of loneliness, difficulty in interpersonal relationships, as well as an inability to understand the feelings of others are features of AsD. The poor social interaction skills of people with AsD are likely to have lifelong consequences.

Rubin et al. (1998) reported that being able to understand the emotions, thoughts, and intentions of others is a necessary social skill. This skill is referred to as theory of
mind and has been studied in children with AsD. Some researchers suggest that children with AsD may have an impaired theory of mind because they have trouble reading the thoughts and emotions of others (Attwood, 1998; Happé, 1994). However, in theory of mind studies children over the age of five with AsD did not differ from normal controls on theory of mind tasks (Bowler, 1992; Ozonoff et al., 1991). This suggests children with AsD do not have theory of mind deficits. Moreover, subjects with AsD passed theory of mind tests while subjects with autism failed these tests, which may suggest the two disorders can be distinguished on this basis.

The age at which children regularly pass theory of mind tests is five. In a literature review, Frith (1996) reported that no children with AsD have been found who can pass theory of mind tests before the age of five. Frith concluded that children with AsD acquire this skill later than other children. Based on the limited research, children with AsD do seem to demonstrate a theory of mind, although it may develop slightly later than the normal age of five.

Rubin et al. (1998) also reported that having the skills to successfully open, maintain, and close a conversation and guiding social interaction through mature judgments were skills necessary for social success. However, Szatmari, Bremner, et al. (1989) reported impairments in these areas of social behavior in their review of the clinical features of AsD. These features included broad social impairments such as isolation and deviant social interaction that were not explained by lack of experience, aggression, timidness, or a short attention span. The authors found significant differences between the AsD and control groups in social interaction impairments such as preferring solitary play
or only engaging in interactions that focus on their obsessive interests, with the individuals in the AsD group showing more severe impairment. Deficits were found in areas such as approaching others only to have their own needs met and having a clumsy social approach. Individuals with AsD were also reported to have one-sided verbal interactions rather than typical two-way interactions.

Individuals with AsD also experience difficulty when changing topics. Transitions are often unclear since these individuals may start in the middle of a topic and make unclear references. Fine et al. (1994) conducted a study to investigate the use of cohesive links by individuals with AsD during reciprocal conversation. Three groups of children were formed. The subjects with AsD were the same individuals used in the Szatmari, Bremner, et al. (1989) study. Eighteen children and adolescents with HFA autism based on DSM-III criteria and Wechsler Full Scale IQ Scores of 70 or greater made up a second group. The third group, outpatient controls (OPC), was made up of 34 adolescents with a variety of nonspecific social problems.

In this study, subjects engaged in a 10 minute conversation with an examiner. The conversation was audio taped, transcribed and coded for cohesive links. Results indicated nearly all communication strategies, such as bridging, making endophoric (verbal) and exophoric (nonverbal) references, were used similarly by the AsD and OPC groups. Individuals in the group with AsD made more unclear references than the HFA or OPC group. This was mainly because children with AsD made substantially more references that were difficult to interpret and defined as ambiguous or additioning. Ambiguous comments made it impossible for the listener to make a choice between two antecedents.
For example, "Patrick and Eric play basketball. He can dunk." Additioning references often had no available antecedent, for example, "Nora took the other bus." The groups also differed in their use of references to culture, the group with autism made more of these references than the other two groups. Subjects with HFA also made fewer references to the preceding conversation.

The conversation of individuals with AsD was richer and more complex than that of the individuals in the HFA group, and the HFA group was more likely to make errors in the use of cohesive links, especially additioning references. The authors noted that the criterion for language deviation is less severe for AsD, thus it could be that the difference in use of specific cohesive links among HFA and AsD individuals is related to this characteristic of language development. Unfortunately for individuals with AsD, these deficits can go unnoticed due to superficially above average skills in fluency and vocabulary, in a sense, hiding weaknesses with their strengths. This is unfortunate because social communication deficits will impact everyday functioning.

Understanding the consequences of one's social interactions on oneself and one's partner was identified by Rubin et al. (1998) as an essential social skill. However, children with AsD often have significant impairments in self-disclosure, either doing too little or too much, which can result in embarrassing situations for the child with AsD and peers and often leading to ridicule (Attwood, 1998). Perhaps the reason children with AsD often play with children younger than themselves is because younger children are less critical of awkward social behaviors. For similar reasons, Attwood reported that children with AsD prefer to interact with adults, who children with AsD also find more interesting.
Thus, although the child with AsD may not be able to change his/her social interaction behavior, they do associate with different aged social partners, possibly because they are not ridiculed by adults or children younger than themselves.

Communication with strangers is also impaired. Children with Asperger’s make embarrassing comments, ask inappropriate questions, and do not understand social distance. They are also unable to pick up social cues from the listener, the environment, or the context of the interaction (Attwood, 1998). In sum, the child with AsD may have difficulty in several areas of social communication including starting and maintaining conversations, engaging in two-way conversations, sharing a conversation, and taking the other person’s perspective. These often result in lifetime consequences such as an inability to make or maintain friendships.

Rubin et al. (1998) identified communicating verbally and nonverbally in a manner that enhances a partner’s social comprehension as a skill needed for social success in life. Numerous researchers have reported nonverbal communication deficiencies in individuals with AsD (Attwood, 1998; Davies, Bishop, Manstead, & Tantam, 1994; Szatmari, Bremner, et al., 1989; Tantam, Holmes, & Cordes, 1993; Wing, 1981). Davies et al. (1994) conducted a study of children with diagnoses of either autism or AsD and their ability to process facial and nonfacial stimuli. Subjects included 10 high ability autistic children (8 given AsD diagnoses) matched with 10 high ability controls and 10 low ability (IQ less than 75) autistic children matched with nonautistic low ability (IQ less than 75) controls.
In the first experiment subjects were presented a set of stimuli that were made up of several dimensions (e.g., color, size, and shape) thus could be classified in several ways. For example, given a set of forms that vary in size, color and shape, the experimenter might pick two objects that matched in shape. The subject had to determine in which dimension the pair matched, then demonstrate this knowledge by picking two other forms that matched on the criterion of shape.

A second experiment was used to see if results from the first task could be replicated using a different type of task, one that involved several tests of facial perception. This experiment assessed the strategies the subjects used to judge facial stimuli. There were four tests in this experiment. Tests one through three were designed to test aspects of face perception. They were as follows: "(1) matching face identity despite changes in the orientation of the face; (2) matching face identity despite changes in emotional expressions; and (3) matching emotional expressions despite changes in identity...." (p. 1044). In these tests as many featural cues as possible were removed, forcing subjects to rely on configural information rather than piecemeal strategies to assemble the face. Subjects had to view and process the face as a whole rather than as separate parts in order to pass these tests. The fourth test was a nonfacial task that also required the subject to process a whole configuration as opposed to individual details. This test required "... matching a pattern of symbols despite changes to its configuration" (p. 1044). This test measured whether the subject was taking in the whole pattern of dots, which was necessary to note changes in the exact positioning of the dots, or just focusing on parts.
Differences between the low ability autistic group and low ability controls in these experiments were not significant. Thus, it was possible that test performance was related to mental disability in these patients. Results showed that the high ability autistic and AsD subjects performed worse than high ability controls across all tests. The authors posited that this meant HFA and AsD individuals did have perceptual problems recognizing configural patterns involving facial stimuli that led to deficits in facial perception. Because the deficit also applied to nonfacial stimuli, these findings supported Frith's (1996) hypothesis that autistic children's inability to combine separate parts of a stimulus make it difficult to construct a meaningful whole (as cited in Davies et al., 1994). The authors also noted it was unlikely that the facial and nonfacial perception deficits found in this study explain all of the social, linguistic, and behavioral deficits displayed by children with AsD. However, it could play a part in leading to poor social skills as a result of misreading social cues and identity in faces.

Tantam, Holmes, and Cordes (1993) conducted a study of nonverbal expression among individuals with AsD. Fifteen subjects with AsD based on ICD-10 (1993) criteria participated in the study. Initially, nine AsD subjects were interviewed by nine interviewers who at the same time interviewed nine normal controls. In a comparison trial, six individuals with AsD were interviewed along with six schizoid subjects with social difficulties by three interviewers (each interviewed two groups). Interviews were conducted in a video studio and were video recorded. Subjects were told that the experiment was to “find out what people say to each other when they first meet.” The interviewers knew that some of the subjects were patients and that some were students;
however, the interviewers did not know whether they were interviewing a volunteer or a patient. Body movements of the subjects were video taped, then analyzed to compare groups. These movements included: self-stimulation (a hand movement touching some part of the body or an object), head and neck movements, other-directed gaze (looking at the eyes of another person), smile, vocalization (mainly, but not entirely speech), gesture (hand movement away from the body), and postural change (movement of the trunk not attributable to passive movements secondary to arm, leg, or head movements).

Only one significant difference, other directed gaze, was found between the AsD group and the control group; the individuals with AsD looked less at the interviewer when speaking and listening. The authors postulated these differences could be the result of a general reduction of other-directed gaze in persons with AsD or that in individuals with AsD the inborn tendency to focus on human faces and vocalization is impaired.

Results of the Szatmari, Bartolucci, et al. (1989) study indicated that subjects with AsD differed significantly from normal controls on every measure of nonverbal communication. These impairments included an inability to read emotions in the facial expression of others, lack of adequate facial expressions, an inability to give messages with the eyes or look directly at others, not using the hands to express oneself or using clumsy gestures, and coming too close to others. Both the Tantum, Holmes, and Cordes (1993) and the Szatmari, Bartolucci, et al. (1989) studies reported persons with AsD have impaired nonverbal interaction, while several of the above studies reported impaired verbal communication. Thus, these studies suggest both verbal and nonverbal communication is
impaired in individuals with AsD, resulting in social skills deficits in several of the key areas mentioned by Rubin et al. (1998).

One study has focused on social skills interventions for individuals with AsD. Marriage, Gordon and Brand (1995) conducted a study with AsD children using methods similar to those Mesibov (1984) used for teaching social skills to autistic children. In this experiment, social skills (e.g., greeting a new acquaintance, making eye contact, or deciding when one has talked enough about a subject to a particular listener) were taught to eight males with AsD, who ranged in age from 8 to 12 years. The training took place during 14 sessions broken into 2 terms. The first term lasted 8 weeks and was followed by a 6 week session in which 6 of the boys participated. (The 2 most socially skilled boys chose not to return.) Major teaching methods included a warm-up activity, role play, and games. Parents formed a parent support group that met at the same time as the children’s intervention group.

Pre- and post-training questionnaires showed only a few individual improvements, but comments written by parents reported progress was being made. However, this data should be interpreted carefully, as parents may have been biased, resulting in a Hawthorne effect. It is important to note the researcher reported that the measuring instruments were somewhat non-sophisticated (e.g., rating scale questionnaires), in part because this was a pilot study. More detailed questionnaires during the entire experiment would have been desirable. Also, skills were reported not to generalize to other situations (e.g., school, home, and community). Parent reports also indicated the parent group was popular.
Several positive outcomes were enumerated. Researchers observed increased self-confidence and the acquisition of concrete social skills in the boys. For example, one boy who was nearly silent early on gradually increased his confidence and by the end of the project was participating regularly. Another boy who originally sat and muttered to himself, gradually became more focused on conversations and began to participate during sessions. The perceived benefits of this training, (e.g., increased self-confidence in the children with AsD), the success of the parent group and the possibility of future group gatherings for the benefit of the children indicate a need for continued research and experiments in this area.

Interventions

There is no specific course of treatment or cure for AsD. Since AsD is a relatively newly recognized disorder, research (other than the above social skills study) on the effectiveness of specific interventions has yet to be reported. However, treatment recommendations have been made by prominent researchers in the field. These recommendations include: behavior management, parent and teacher education and training, psychotherapy, social skills training, medications, and/or academic interventions (National Institutes of Health, 1996). This paper will report recommendations for addressing needs in three primary areas: academic, communication, and social skills.

Academic Recommendations

Several types of academic strategies can be found in the literature on AsD, including curriculum adaptations, classroom interventions, peer interventions, and teacher guidelines. Klin and Volkmar (1996) recommended curriculum adaptations that focus on
long-term goals and skills that are essential for the future. In the younger years social skills should be targeted and as the student becomes older vocational and quality of life goals should be addressed. Interventions for the classroom include preferential seating (Attwood, 1998), visuals such as posters, schedules and charts (Bauer, 1997; Muskat, 1996; Myles & Simpson, 1998), and placement in a smaller class in order to decrease distractions and offer more one-on-one assistance (Donnelly & Levy, 1995). Peer partners who can assist the student with AsD by reminding the student of homework and classroom rules and help them during transition times are also suggested (Attwood, 1998; Donnelly & Levy, 1995; Myles & Simpson, 1998).

Williams (1995) offered several guidelines for teachers: (a) capitalize on strengths such as excellent memories, rote skills, and his/her interest area(s); (b) focus on reading comprehension rather than fluency (which is often a strength); (c) provide additional explanations and simplification of academic concepts; and (d) develop a highly individualized program where success is constant (decreases the likelihood of distractions caused by his/her interests). Other guidelines for teachers included: using nonverbal prompts to keep the child on task, providing a structured, predictable, and consistent environment, teaching and modeling organization and study skills, breaking assignments into smaller portions or reducing the amount of work required, developing uniform assignment formats, and using concrete teaching, such as avoiding language that may confuse the student (Attwood, 1998; Bauer, 1997; Myles & Simpson, 1998). Attwood gave the following “parent focused” advice for teachers: a communication notebook to keep parents informed about daily progress or difficulties, discussing issues with parents as
they come up rather than treating them as minor, unrelated incidences, and providing the parents with an assignment sheet or timetable so the child can come to class prepared each day.

**Communication Recommendations**

Communication deficits such as one-way conversations and limited topics of discussion reduce a child’s social success. Gray (1994) recommended Social Stories and Comic Strip Conversation for communication problems. These strips can teach turn-taking as well as how to initiate, maintain, and end a conversation. Recommendations by Twachtman (1995) focused on empowering the student with AsD by teaching him/her functional language, such as when to use “No,” “I need a break,” and “Will you help me?” This strategy helps reduce feelings of frustration, decreasing temper tantrums and related outbursts. Twachtman further recommended using strengths and interests to encourage language growth and parents, teachers, and peers to point out social cues. For example, a social information cue may be returning a wave to someone while an emotional information cue may consist of pointing out someone who is feeling sad and telling the child what he/she should say to that person.

Several authors recommended teaching conversation self-monitoring skills such as talking 15 seconds, then letting the other person talk (Donnelly & Levy, 1995; Klin & Volkmar, 1996). Attwood (1998) recommended teaching appropriate opening comments as well as how to ask for clarification when confused. Attwood also reported that parents, teachers and peers can model sympathetic comments, whisper to the child what he should say to the other person, and teach the cues of when to reply, change, or interrupt a topic.
Donnelly and Levy reported that these skills can be taught to individual children or in small or classroom groups using role play or through the use of an audio or a visual tape of an interaction. Bauer (1997) suggested consultation with a speech and language clinician regarding ways to address problems in these areas.

Klin and Volkmar (1996) took these interventions a step further and recommend teaching the child not only to recognize, but also to use a variety of interaction skills such as mediation, negotiation, disagreement, and persuasion. Secondly, these authors suggested helping the individual to develop skills to expand on a topic, make inferences, predict, and expect various outcomes, which should result in increasing the flexibility of his/her language and use of language. It is important to note that these interventions should only be used with AsD students who understand the underlying concepts of conversations.

Social Skills Recommendations

Social skills deficits are dominant in students with AsD. Attwood (1998) recommended that the child with AsD work with partners or in small groups, which will increase involvement with others. Part of working with others involves turn-taking which Lord (1998) suggested teaching both in school and at home. Attwood cautioned teachers to be selective about who they pair the student diagnosed with AsD with because other children might take advantage of, bully, or tease the child with AsD. Attwood also advised teachers to protect students with AsD from such harm, which can be done through educating peers about the disorder.
The Circle of Friends intervention was recommended by Attwood (1998) as well. The Circle of Friends technique involves drawing concentric circles on a piece of poster paper and writing the name of the child in the middle circle. Write the names of people with whom the child has the closest relationships and appropriate actions and greetings in the inner circle. For example, mom, dad, hugs, and "I love you." The next circle should include extended family and close friends and appropriate actions and greetings for them. The next circle should include less intimate relationships such as teachers, classmates, and neighbors. It may also be helpful to add pictures of the individuals in the circles. It is important to note that no research support exists for this intervention.

Klin and Volkmar (1996, 1997) recommended teaching explicit instructions on how to judge the social behavior of others. This should be taught in a rote manner similar to the way a foreign language is taught. Topics may include: appropriate nonverbal behavior (eye gaze), social awareness and interpreting non-literal language, how to process visual and auditory information at the same time (taking in the whole picture rather than focusing on one aspect of a social situation), and how to read the nonverbal behavior of others. Development of the child's social skills during peer interaction is another key recommendation by these authors. For example, teaching topic management, from initiating a topic someone else is interested in (as opposed to his primary topic of interest), to staying on topic, shifting topics, and appropriately ending a conversation.

Donnelly and Levy (1995) recommended social skills training individually or in small groups followed by practice in the natural setting with feedback. Levy also recommended individual counseling that focuses on a structured, concrete, and visual
environment and the development of scripts for encountering new situations rather than focusing on understanding social interactions. (It is important to note that this technique is in the experimental stage.)

Myles and Simpson (1998) and Gray (1994) recommended social stories, social scripts and cartoons for teaching social skills. In addition, Myles and Simpson offered the following suggestions: social autopsies, direct instruction, and situation role plays involving the following steps: Options, Consequences, Choices, Strategies, and Simulation. This strategy is applied to a problematic situation and questions are used to talk the student through the problem, for example, “What are my choices?” “What would happen if I chose...?” and “How do I get what I want?” An adult mediated strategy is also recommended. This technique involves pairing the child with AsD with a socially desirable peer who is instructed to stay close to the child with AsD and to play in games with him/her if the child with AsD initiates them. The adult remains close providing cues for the child with AsD and reinforcement if the child responds appropriately with the prompt. If the child fails to respond appropriately to the prompt, it is repeated or the adult intervenes to help the child. This strategy can be implemented in a variety of settings and with different partners and groups of children. Through careful planning this strategy may be generalized by the child. Authors cautioned that this intervention may disrupt the natural peer exchanges. However, this type of strategy has been found to be one of the most effective ways to increase social interactions. Finally, Attwood reported that peer mediated strategies offer the most natural approach, are easy to incorporate, and typically
get the best results. Unfortunately, the author warns that these skills may not be
generalized to other social situations.

Summary

The prevalence of AsD varies with the diagnostic criteria used to establish whether or not an individual represents a case of AsD. Etiology has not yet been determined. It appears to be multifactorial and, based on a few studies, may reflect genetic influences and/or pre-, peri-, or post-natal trauma. Prognosis for individuals with AsD appears to be better than for individuals with autism, in that living independently and having a career and a family are all realistic and common.

Although much of the research completed to date has been designed to establish the clinical characteristics of AsD, there are several areas of disagreement among researchers in their descriptions of individuals with AsD. For example, language delays and age of onset are not yet clearly established definitive criteria, nor is the significance of clumsiness in determining whether a person should receive a diagnosis of AsD.

Finally, social skills deficits may affect the daily functioning of individuals with AsD more significantly than other deficits associated with the disorder. Therefore, interventions in this area should be a primary focus of treatment. However, the academic and communication needs of students with AsD must not be overlooked. Because research support does not exist on the effectiveness of the interventions listed above, school psychologists are forced to rely on personal experience when assisting students with AsD.
CHAPTER 3

METHODS

Participants

Participants consisted of a random sample of 200 practicing and retired school psychologists in Iowa. The majority of the sample were employed in rural settings. School psychologists in Iowa engage in the delivery of both direct and indirect services (e.g., consultation, intervention design and implementation, individual counseling, and parent education programs). Psychoeducational assessment, both traditional (e.g., IQ and other standardized testing) and non-traditional (i.e., problem solving, curriculum based evaluation, curriculum based measurement), consumes the majority of their time. School psychologists in Iowa must have a specialist, or equivalent, degree.

Procedure

Surveys were distributed by mail. Mailings included: (a) a cover letter explaining the study with instructions for completing the questionnaire, (b) one case description with a questionnaire, (c) a stamped return postcard, (d) a self-addressed stamped return envelope, and (e) an incentive (i.e., a stick of Wrigley's Extra wintergreen flavored chewing gum). A description of items (a) through (d) follows.

The cover letter described the questionnaire and included instructions for completing and returning the questionnaire and postcard. Participants were assured that their responses would remain anonymous and were asked to return the questionnaire within two weeks. (See Figure 1.)
Dear School Psychologist/Colleague,

Have you ever wished that winter didn’t last so long? That you had a piece of gum for your commute between schools or at the end of a long day? Or that you could contribute to research in the field of school psychology without a year long, in-over-your-head commitment?

With this letter you will find that piece of gum, as well as the chance to contribute to research in your field. (Unfortunately for both of us, making winter shorter is out of my hands.) You will be asked to read one short case description and respond to it from your own perspective as a school psychologist. This process should take about 10-15 minutes (significantly less than a year). Your responses will be completely anonymous. I will appreciate your completion of the survey by March 5. Return it in the stamped, self-addressed return envelope enclosed. To preserve anonymity, I ask that when you mail the survey you also mail the postcard (which does have your name on it). This will keep the survey data anonymous but make it possible for me to follow up with those who do not respond.

Thank you in advance for your support. Results of the study will be provided in a 1999 edition of the Iowa School Psychologists Association newsletter. If you have any questions, please call the lead researcher at (319) 266-0179.

Figure 1. The cover letter.

The case description consisted of several paragraphs; the questionnaire included 15 items. Surveys were four pages long and were printed back-to-back on two pages of lilac colored paper. (See Appendix A for complete survey.) Participants provided no personal information on the surveys.
The return postcard was addressed to the researcher using computer generated labels. The school psychologist's name was handwritten on the message side of the postcard in order to track who did and who did not return surveys. The researcher placed the postcards in a box for reference in the event second mailing was necessary.

The return envelopes were also addressed with computer generated labels. In order to guarantee anonymity, the return envelope containing the completed questionnaire was addressed to the secretary of the Educational Psychology and Foundations Department at the university where the study took place. The secretary removed the surveys from the return envelopes, stapled the two pages together, and placed them in a folder for the researcher.

Instrument

The instrument consisted of a case description with survey items. The case description of a child with AsD was constructed by the author based on actual students diagnosed with AsD. The case description contained general information about the student including: age (10), gender (male), intense interest (fish), WISC-III Full Scale IQ (94), diagnosis (Asperger’s Disorder) and specific information related to three topic areas: (a) academic, (b) communication, and (c) social skills. Information related to the three topic areas focused on deficits and weaknesses. (Refer to Figure 2.)

Participants were asked to read a brief description of Mike’s academic challenges and answer five items related to academic interventions. Item 1 addressed a personal choice of the most effective intervention. Participants made their recommendation by
**Background**: Mike is a 10 year-old male. His mother reported that he reached the major developmental milestones in the normal age range. Mike has an intense interest in fish. For example, by the age of 5 Mike was able to identify 30 types of fish by looking at photographs of them. Mike has a WISC-III Full Scale IQ of 94 with average verbal skills. He was given a diagnosis of Asperger’s Disorder in 2nd grade.

**Figure 2.** The first section of the survey, the case description.

selecting one of the options provided. (Refer to Figure 3.) Selecting the “Not enough information; I need to know” and “Other” items required a written response.

**Academic**: Mike self-adheres to a very strict schedule and becomes disturbed if it is disrupted. For example, everyday Mike arranges the day’s assignments from his homework folder into the same order and if an assignment is missing he perseverates on it until the worksheet has been replaced. This interferes with timely work completion. Mike has always had difficulty comprehending and following the directions on worksheets which causes him to incorrectly complete his assignments. The teacher’s major concern is Mike’s completion of assignments accurately and on time.

1. Place a check in the blank next to the one intervention that you think would be the most effective for Mike’s target problem:
   - a) Home School Partnership (including but not limited to home-school notes and assignment notebook)
   - b) Self-Monitoring protocol for on-task behavior
   - c) Visual and verbal cues provided by teacher and classmates
   - d) Not enough information; I need to know: ____________________________
   - e) Other: ____________________________

**Figure 3.** The academic section of the survey description describing the case study and Item 1.
Item 2 required the participants to select the academic intervention that they perceived parents and teachers would be most likely to support. The same intervention choices were provided as in Item 1. (Refer to Figure 4.) The third item was an open-ended question that required participants to write a response if they selected different interventions for the first two items. (Refer to Figure 5.)

2. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:
   __ a) Home School Partnership (including but not limited to home-school notes and assignment notebook)
   __ b) Self-Monitoring protocol for on-task behavior
   __ c) Visual and verbal cues provided by teacher and classmates
   __ d) Other: ________________________________

Figure 4. Item 2 in the academic section of the survey.

3. If you chose different responses for the above 2 items what are the implications of this in your practice?

Figure 5. Survey item addressing the selection of different interventions for previous items.

Item 4 required the participants to evaluate their skills in implementing the intervention selected in Item 1. They responded by recording on a Likert-type scale that ranged from 1 (i.e., little skill) to 5 (i.e., a great deal of skill). (Refer to Figure 6.)
Item 5 consisted of two parts. Items referred to the number of times the participants had assisted others in implementing the intervention selected in Item 1. (See Figure 7.) The format used to describe Mike's academic challenges was also used to describe both communication and social skills challenges.

4. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #1? (Please circle one number.)

<table>
<thead>
<tr>
<th></th>
<th>Little skill</th>
<th>2</th>
<th>Moderate skill</th>
<th>4</th>
<th>A great deal of skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>2</td>
<td></td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Figure 6. Survey item addressing perceived skill level at implementing the intervention selected.

5. Please place a check next to one answer for each question. How many times have you assisted others in implementing this intervention:
   a) with a child who has been diagnosed with Asperger's Disorder?
      - 0 times
      - 1-2 times
      - 3-5 times
      - 6 or more times
   b) with a student who has not been diagnosed with Asperger's Disorder?
      - 0 times
      - 1-2 times
      - 3-5 times
      - 6 or more times

Figure 7. Survey item related to the number of times a school psychologist implemented the selected intervention.

Communication

The second part of the questionnaire referred to Mike's communication needs. The description was a combination of communication and social skills challenges. (Refer to Figure 8.) However, the two areas were addressed separately in the questionnaire. Participants were asked to read the description and to make their recommendations for
Mike’s communication needs by selecting one of the five intervention options. (Refer to Figure 9.) Items 7 through 10 were identical to those described in items 2 through 5 above.

**Communication/Social Skills:** Mike is described as passive and a loner by his parents and teachers. Mike does not get along with peers, who often tease him. At recess he walks around the playground with the recess aide and does not play with any children. When Mike is interacting and becomes confused he does not ask for clarification, instead he switches to a familiar topic, i.e., fish. In conversation Mike speaks about one topic, such as types of tropical fish. He is unable to approach another person to make a request, such as when someone is in his way or making a noise that he finds annoying. He seems to lack the ability to engage in collaborative back and forth play; playing a game with peers often necessitates a “referee” because he wants everyone to do things his way. For example, in Parcheesi Mike insists everyone moves his/her “marker” along the left side of the path. If competitors do not comply, Mike moves their pieces to the left side of the path which often results in arguments or physical aggression. Finally, metaphors and figures of speech confuse Mike because he interprets them literally.

*Note: Mike’s communication and social skills needs will be addressed separately in the following two sections.*

**Figure 8.** The communication/social skills description of the survey describing the case study.

**Social Skills**

The final section of the questionnaire addressed Mike’s social skills needs. Participants were asked to refer to the Communication/Social Skills description in order to make their intervention recommendation for Mike’s social skills needs. (See Figure 10.) Finally, Items 12 through 15 also followed the format described for Items 2 through 5.
Mike's Communication Needs
6. Place a check in the blank next to the one intervention that you think would be the most effective for Mike's communication needs:
   - a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues
   - b) Teachers and parents reinforce discussion of topics beyond personal interest topics
   - c) Individual sessions with the speech pathologist, focusing on pragmatics
   - d) Not enough information; I also need to know: ____________________________
   - e) Other: ____________________________

Figure 9. Item 10 in the communication section of the survey.

Mike's Social Skills Needs
11. Place a check in the blank next to the one intervention that you think would be the most effective for Mike's social skills needs:
   - a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)
   - b) Individual social skills training with the school counselor or school psychologist
   - c) Group social skills training with opportunities to practice in multiple settings
   - d) Not enough information; I also need to know: ____________________________
   - e) Other: ____________________________

Figure 10. Item 11 in the social skills section of the survey.

Pilot Study

A pilot study was conducted with four practicing school psychologists. Each school psychologist was asked to read the questionnaire and ask for clarification and give feedback on survey items. The researcher then met with each school psychologist to clarify items and discuss feedback.
Data Analysis

All quantitative data analysis was descriptive. Data were summed and used to calculate frequencies and cross tabulations. Qualitative analysis was completed for written responses that accompanied items “Not enough information; I also need to know” and “Other.” Responses were put into categories such as more data or assessment needed, previous interventions, Mike’s academic skill level and skill deficit areas. Items 3, 8 and 13 asked participants to explain the implications of selecting different answers for the preceding two items. Participants’ comments were analyzed and placed in categories representing the main types of responses (e.g., teacher time, parents and teacher buying in, and additional training).

Researcher as Participant

The researcher is a second year graduate student in the school psychology program at the University of Northern Iowa.

Follow-up

A follow up mailing was planned if less than 50 (25%) surveys were returned. Ninety-two surveys were returned, therefore, a follow-up mailing was not necessary.
CHAPTER 4

RESULTS

Ninety-three of the 200 surveys were completed and returned. An additional 15 surveys were returned, ten were marked “not deliverable as addressed, unable to forward” and 5 as “retired school psychologists” or “not practicing in this field.” Of the 93 completed questionnaires one was deemed unusable because the school psychologist completed the questionnaire in a way that did not allow it to be compared to the other surveys. The 92 usable surveys represented 46% of the original sample.

Research Questions

Survey data were analyzed for each of the research questions. Findings for each question are presented for each of the three topic areas: academic, communication, and social skills. Data are presented in the same order for each question.

Recommended Interventions

The data were analyzed to determine the rate each intervention was recommended by participating school psychologists. First, academic findings will be presented. Second, data on communication interventions will be presented. Finally, social skills intervention selection for social skills will be presented.

School psychologists most frequently selected the academic intervention “Visual and verbal cues provided by teacher and classmates” (34%). However, “Home School Partnership (including but not limited to home-school notes and assignment notebook)” and “Not enough information; I also need to know...” were also selected frequently.
(25% and 23% respectively). Only 5% chose “Self-monitoring protocol for on-task behavior.” (See Figure 11.)

Questions 1 & 2

Intervention Selection

![Bar chart showing intervention selection for Items 1 and 2.

Key

A = Home School Partnership (including but not limited to home-school notes and assignment notebook) School Psychologists’ Choice (S. P.) n = 23 / Perceived n = 37
B = Self-Monitoring protocol for on-task behavior S. P. n = 5 / Perceived n = 7
C = Visual and verbal cues provided by teacher and classmates S. P. n = 31 /
Perceived n = 34
Other = Written response S. P. n = 9 / Perceived n = 10
Multi = More than one of the above S. P. n = 3 / Perceived n = 3
Blank = No response S. P. n = 0 / Perceived n = 1
School Psychologists’ Personal Recommendations
D = Not enough information; I also need to know S. P. n = 21
Perceived Parent and Teacher Choice
D = Not a choice

Figure 11. Graph showing intervention selection for Items 1 and 2.
Data analysis indicated that participants most frequently selected the communication intervention “Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues” (63%). Additional choices included “Other” (13%), “Teachers and parents reinforce discussion of topics beyond personal interest topics” (10%), and “Individual sessions with the speech pathologist, focusing on pragmatics” (7%). (See Figure 12.)

Data analysis indicated that participants most frequently selected the social skills intervention “Group social skills training with opportunities to practice in multiple settings” (60%). Eighteen percent of the participants recommended that “Adults prompt Mike to use a social skill on an as needed basis (guided practice).” Only 7% chose the intervention “Individual social skills training with the school counselor or school psychologist.” (See Figure 13.)

Perceived Intervention

Next, the data were analyzed to determine which interventions school psychologists perceived parents and teachers would be most likely to support. First, academic findings will be presented. Second, data on communication interventions will be described. Finally, findings in the area of social skills will be shared.

Participants perceived that teachers and parents would be most likely to support the “Home School Partnership...” (41%) and “Visual and verbal cues provided by teacher and classmates” (38%) academic interventions. Similarly to Item 1, a low number (8%) of respondents thought that teachers and parents would be most likely to support the intervention “Self-monitoring...” (See Figure 11.)
Questions 6 & 7

Intervention Selection

Key

A = Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues School Psychologists' Choice (S. P.) \( n = 59 \) / Perceived \( n = 33 \)

B = Teachers and parents reinforce discussion of topics beyond personal interest topics S. P. \( n = 9 \) / Perceived \( n = 12 \)

C = Individual sessions with the speech pathologist, focusing on pragmatics S. P. \( n = 6 \) / Perceived \( n = 36 \)

Other = Written response S. P. \( n = 5 \) / Perceived \( n = 10 \)

Multi = More than one of the above S. P. \( n = 3 \) / Perceived \( n = 1 \)

Blank = No response

School Psychologists' Personal Recommendations

D = Not enough information; I also need to know S. P. \( n = 3 \)

Perceived Parent and Teacher Choice

D = Not a choice

Figure 12. Graph showing intervention selection for Items 6 and 7.
Questions 11 & 12

Intervention Selection

![Bar Chart]

Key

A = Adults prompt Mike to use a social skill on an as needed basis (guided practice)
School Psychologists’ Choice (S. P.) n = 17 / Perceived n = 9
B = Individual social skills training with the school counselor or school psychologist
S. P. n = 6 / Perceived n = 20
C = Group social skills training with opportunities to practice in multiple settings
S. P. n = 56 / Perceived n = 51
Other = Written response S. P. n = 7 / Perceived n = 8
Multi = More than one of the above. S. P. n = 4 / Perceived n = 2
Blank = No response S. P. n = 1 / Perceived n = 2

School Psychologists’ Personal Recommendations
D = Not enough information; I also need to know S. P. n = 1

Perceived Parent and Teacher Choice
D = Not a choice

Figure 13. Graph showing intervention selection for Items 11 and 12.
Participants perceived that teachers and parents would be most likely to support the “Teacher and parents are instructed... assist Mike... language and social cues” and “Individual sessions with the speech pathologist...” communication interventions (36% and 39% respectively). The “Teachers and parents reinforce discussion of topics beyond personal interest topics” and “Other” choices were selected at about the same rate as they were when participants made personal recommendations (13% and 9% respectively). (See Figure 12.)

Just over half of the participants perceived that teachers and parents would be most likely to support the social skills intervention “Group social skills training...” (55%). Just over one-fifth felt that the intervention “Individual social skills training...” was most likely to be supported by teachers and parents. Only 10% thought that teachers and parents would be most likely to support the intervention “Adults prompt Mike to use a social skill...” (See Figure 13.)

**Reported Skill Level**

The data also were analyzed to determine reported skill level of the participating school psychologists. First, findings in the academic area will be shared. Second, data on communication in the area of will be presented. Finally, social skills data will be described.

Analysis of reported skill level indicated that participants considered themselves very skilled at implementing the academic intervention they selected. The mean was 4.06. Nearly all of the scores were reported as 3, 4, or 5 indicating that the mean, as a measure of central tendency, represented the responses accurately. (See Table 1.)
Table 1
Reported Skill Level for Academic Interventions

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Number of School Psychs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (little skill)</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3 (moderate skill)</td>
<td>17</td>
</tr>
<tr>
<td>4</td>
<td>41</td>
</tr>
<tr>
<td>5 (a great deal of skill)</td>
<td>24</td>
</tr>
<tr>
<td>Missing</td>
<td>9</td>
</tr>
</tbody>
</table>

Analysis of reported skill level indicated that participants considered themselves moderately skilled at implementing the communication intervention they selected. The mean was 3.33. The majority of the skill levels were reported as 3 and 4 indicating that the mean, as a measure of central tendency, represented the distribution accurately. (See Table 2.)

Table 2
Reported Skill Level for Communication Interventions

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Number of School Psychs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (little skill)</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>3 (moderate skill)</td>
<td>34</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>5 (a great deal of skill)</td>
<td>11</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
</tr>
</tbody>
</table>

Analysis of reported skill level indicated that participants considered themselves skilled at implementing the social skill intervention they selected. The mean was 3.69.
The majority of the skill levels were reported as 3 and 4 with several 5s indicating that the mean, as a measure of central tendency, represented the distribution accurately. (See Table 3.)

Table 3
Reported Skill Level for Social Skills Interventions

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Number of School Psychs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (little skill)</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3 (moderate skill)</td>
<td>32</td>
</tr>
<tr>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>5 (a great deal of skill)</td>
<td>15</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
</tr>
</tbody>
</table>

Experience and Intervention Implementation

Further analysis looked at the degree of match between reported skill level and reported experience. The data were analyzed to determine whether school psychologists related skill level to the number of times he/she had implemented a particular intervention (experience). First, academic findings will be presented. Second, data on communication findings will be described. Finally, social skills intervention selection will be presented.

Both skill level and experience were divided into Low and High categories. Low skill level was defined as a rating of a 1, 2 or 3. High skill level was a rating of 4 or 5. Each experience rating was assigned a numerical value. For example, 0 times was assigned 1, 1-2 times was assigned 2, 3-5 times was assigned 3, and 6 or more times was assigned 4. These numbers were added up for the “How many times have you assisted others in
implementing this intervention with a student who has been diagnosed with Asperger’s Disorder” and “... with a student who has not been diagnosed with Asperger’s Disorder” items. Totals of 1 - 5 were categorized as Low experience while scores of 6 - 8 were categorized as High experience.

Only 6 responses in the academic area indicated a match between low experience and low skill. However, 32 indicated a match between high experience and high skill. Twenty-two respondents reported high skill level but low experience while only 11 reported low skill with high experience. (See Table 4.)

Table 4
Reported Academic Experience with Reported Academic Skill Level

<table>
<thead>
<tr>
<th></th>
<th>Low Experience</th>
<th>High Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Skill</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>High Skill</td>
<td>22</td>
<td>32</td>
</tr>
</tbody>
</table>

Data analysis indicated that nearly 70% of participants’ responses indicated a match between skill level and experience for the communication items. Forty of the responses indicated a match between low experience and low skill, while 21 indicated a match between high experience and high skill. Seventeen respondents reported high skill level but low experience while only 10 respondents rated themselves as low skill level with high experience. (See Table 5.)

Further analysis considered the degree of match between reported skill level and reported experience for the social skills items. Results indicated that for the social skills
items a match between skill and experience was present for a majority of respondents. Twenty-eight responses indicated a match between low experience and low skill and 28 indicated a match between high experience and high skill. Twenty-four respondents reported high skill level but low experience. Only nine reported low skill and high experience. (See Table 6.)

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Reported Communication Experience with Reported Communication Skill Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Experience</td>
</tr>
<tr>
<td>Low Skill</td>
<td>40</td>
</tr>
<tr>
<td>High Skill</td>
<td>17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Reported Social Skills Experience with Reported Social Skills Skill Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Experience</td>
</tr>
<tr>
<td>Low Skill</td>
<td>28</td>
</tr>
<tr>
<td>High Skill</td>
<td>24</td>
</tr>
</tbody>
</table>

**Post Hoc**

Survey data were analyzed and measured in ways beyond the scope of the research questions. These findings are presented in the following section. Again, findings are broken down into academic, communication, and social skills content areas.
Selection of Different Interventions

The occurrence of selecting different interventions for their own recommendation and what they perceived parents and teachers would be most likely to support were examined. Academic data will be shared in the first. Communication and social skills findings will follow.

Nearly half of the respondents (48%) chose different answers for the academic interventions in Items 1 and 2. Participants' reasons for choosing different interventions were analyzed and categorized into two themes. They included: (a) Parents and Teacher Buying In/Education, and (b) Teacher Time and/or Effort. The themes, examples of written statements categorized into each theme, and percentage of respondents making comments which reflected each theme are included in Table 7. Other comments suggested the need for more information, that is, about the type of deficit (skill or performance), the need to focus on discrete behaviors, and the need for prompting and reinforcing teachers for involving home components in interventions. (See Appendix B for a complete list of written responses to Item 3.)

Nearly half of the respondents chose different answers for the communication interventions in Items 6 and 7. Participants' reasons for choosing different interventions for these items were categorized according to three themes. They included: (a) Additional Training and/or Involving Experts; (b) Teacher Time; and (c) Multiple Interventions and People Involved. The themes, examples of written statements categorized into each theme, and percentage of respondents making comments which reflected each theme are
Table 7
Implications of Selecting Different Interventions for Items 1 and 2

<table>
<thead>
<tr>
<th>Theme/Example Comments</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parents and Teacher Buying In/Education</td>
<td>29</td>
</tr>
<tr>
<td>- I must consult, provide resources/samples and demonstrate other instructional options and interventions that might be most appropriate for Mike.</td>
<td></td>
</tr>
<tr>
<td>- One needs to select an intervention that has the most potential to result in benefit and will be supported by those responsible for implementation.</td>
<td></td>
</tr>
<tr>
<td>2. Teacher Time and/or Effort</td>
<td>26</td>
</tr>
<tr>
<td>- It would take a great deal of pre-planning lessons in order to create visual cues. Whereas, a home-school notebook would require less effort. I am basing this on the majority of schools I work in, but there are always exceptions and more cooperative schools.</td>
<td></td>
</tr>
<tr>
<td>- Teachers typically indicate they don't have enough time to make visual schedules, etc. So my job as a practitioner is to tell/show/demonstrate how much more effective it will be for the student now and in the future.</td>
<td></td>
</tr>
</tbody>
</table>

included in Table 8. Other comments suggested the need for more information, i.e. about the type of deficit (skill or performance), the need to focus on discrete behaviors, and the need for prompting and reinforcing teachers for involving home components in interventions. (See Appendix C for a complete list of written responses to Item 8.)

Thirty-two percent of respondents chose different answers for the social skills interventions in Items 11 and 12. Participants' reasons for choosing different interventions for these items were categorized according to three themes. They included: (a) Teacher Time and Competence; (b) Focus on the Helping Process; and (c) Parent and Teacher Education/Training/Consultation. The themes, examples of written statements categorized into each theme, and the percentage of respondents making comments reflected each theme are included in Table 9. Other comments suggested a combination
of individual training followed by group training. (See Appendix D for a full list of written responses to Question 13.)

Table 8
Implications of Selecting Different Interventions for Items 6 and 7

<table>
<thead>
<tr>
<th>Theme/Example Comments</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Additional Training and/or Involving Experts</td>
<td>31</td>
</tr>
<tr>
<td>- I think the confidence, time, and competence that parents and teachers feel would be needed would seem overwhelming to them and they would prefer to have an expert take over.</td>
<td></td>
</tr>
<tr>
<td>- Education of parents and teachers is as important as intervention design.</td>
<td></td>
</tr>
<tr>
<td>2. Teacher Time</td>
<td>29</td>
</tr>
<tr>
<td>- Often if the intervention is more cut and dry, i.e. pull out instruction of skills, teachers are more likely to support it, especially if they do not have to provide the intervention.</td>
<td></td>
</tr>
<tr>
<td>- Sometimes it’s difficult to convince teachers that interventions can be carried out more effectively in the classroom rather than “sending them away.”</td>
<td></td>
</tr>
<tr>
<td>3. Multiple Interventions and People Involved</td>
<td>26</td>
</tr>
<tr>
<td>- One intervention above will not be most effective. In addition to pull-out for language instruction, there also needs to be cross-over instruction and follow-up both in the regular classroom as well as at home.</td>
<td></td>
</tr>
<tr>
<td>- There are various factors to consider and methods that should be tried. Need a lot of information about how he functions in the environment, strengths, and weaknesses.</td>
<td></td>
</tr>
<tr>
<td>- Sometimes it’s difficult to convince teachers that interventions can be carried out more effectively in the classroom rather than “sending them away.”</td>
<td></td>
</tr>
</tbody>
</table>
Intervention Selection and Skill Level

Data were also analyzed to determine whether specific interventions were selected according to skill level. Skill level was divided into Low and High categories. Low skill level was defined as a rating of 1, 2 or 3. High skill level was defined as a rating of 4 or 5. Data also were analyzed to determine whether specific interventions were selected according to skill level. These findings will be presented with academic findings being presented first.

Table 9
Implications of Selecting Different Interventions for Items 11 and 12

<table>
<thead>
<tr>
<th>Theme/Example Comments</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teacher Time and Competence</td>
<td></td>
</tr>
<tr>
<td>- Teachers seem to feel a bit overwhelmed when faced with additional disruptions in an already overcrowded classroom. So it seems the easiest thing to do would to put the responsibility on the school counselor/psych.</td>
<td>35</td>
</tr>
<tr>
<td>- I think the confidence, time, and competence that parents and teachers feel would be needed would seem overwhelming to them and they would prefer to have an expert take over.</td>
<td></td>
</tr>
<tr>
<td>2. Focus on the Helping Process</td>
<td></td>
</tr>
<tr>
<td>- Through the process and encourage a collaborative approach.</td>
<td>26</td>
</tr>
<tr>
<td>- Helping the teachers understand how the generalization is easier and deeper if social skills are taught with other children with practice in many settings.</td>
<td></td>
</tr>
<tr>
<td>3. Parent and Teacher Education/Training/Consultation</td>
<td></td>
</tr>
<tr>
<td>- Education of parents and teachers.</td>
<td>17</td>
</tr>
<tr>
<td>- Teacher and parent training needed.</td>
<td></td>
</tr>
</tbody>
</table>
Academic intervention recommendations differed for the two skill levels. Twenty-seventy percent of the Low skill level respondents chose “Self-monitoring protocol for on-task behavior” while no High skill level respondents chose this intervention. Nearly twice as many High skill level respondents selected “Visual and verbal cues provided by teacher and classmates” (42% versus 22%). More participants who rated themselves as High skill chose “Other,” (12% versus 5%). Nearly 2.5 times as many respondents rated themselves as highly skilled (65 versus 27) than as low skilled. (See Table 10.)

Table 10
Academic Intervention Recommendation According to Reported Skill Level

<table>
<thead>
<tr>
<th>Intervention</th>
<th>High Skill %</th>
<th>Low Skill %</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Home School Partnership</td>
<td>26</td>
<td>33</td>
</tr>
<tr>
<td>b) Self-Monitoring protocol for on-task behavior</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>c) Visual and verbal cues provided by teacher and classmates</td>
<td>42</td>
<td>22</td>
</tr>
<tr>
<td>d) Not enough information; I need to know</td>
<td>17</td>
<td>5</td>
</tr>
<tr>
<td>e) Other</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Multiple</td>
<td>3</td>
<td>5</td>
</tr>
</tbody>
</table>

Communication intervention recommendations differed only slightly for the two skill levels. Frequency of choices were selected in the same order, however a higher percent of Low skilled respondents recommended “Teachers and parents are instructed in how to assist Mike in the use of functional language and social cues” (72% versus 54%). While 15% of High skill respondents recommended “Teachers and parents reinforce discussion of topics beyond personal interest topics” only 6% of Low skill respondents made this
recommendation. Again, more participants who rated themselves as High skill chose "Other," (17% versus 9%). The number of Low skills and High skills respondents was more equal, 51 to 39, respectively. (See Table 11.)

Table 11
Communication Intervention Recommendation According to Reported Skill Level

<table>
<thead>
<tr>
<th>Intervention</th>
<th>High Skill %</th>
<th>Low Skill %</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues</td>
<td>54</td>
<td>72</td>
</tr>
<tr>
<td>b) Teachers and parents reinforce discussion of topics beyond personal interest topics</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>c) Individual sessions with the speech pathologist, focusing on pragmatics</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>d) Not enough information; I need to know</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>e) Other</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Multiple</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Social skills intervention recommendations differed only slightly for the two skill levels. Frequency of choices were selected in the same order, however a higher percent of Low skilled respondents recommended "Teachers and parents are instructed in how to assist Mike in the use of functional language and social cues" (72% versus 54%). While 15% of High skill respondents recommended "Teachers and parents reinforce discussion of topics beyond personal interest topics," only 6% of Low skill respondents made this recommendation. Again, more participants who rated themselves as High skill chose "Other," (12% versus 3%). Finally, the number of Low skills and High skills respondents was divided 37 to 52 respectively. (See Table 12.)
Table 12
Social Skills Intervention Recommendation According to Reported Skill Level

<table>
<thead>
<tr>
<th>Intervention</th>
<th>High Skill %</th>
<th>Low Skill %</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>b) Individual social skills training with the school counselor or school psychologist</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>c) Group social skills training with opportunities to practice in multiple settings</td>
<td>62</td>
<td>65</td>
</tr>
<tr>
<td>d) Not enough information; I need to know</td>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>e) Other</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Multiple</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Interventions Used for Students Diagnosed with AsD versus Not Diagnosed with AsD

Participants reported implementing the “Visual and verbal cues...” academic intervention most frequently with children with AsD (37%). This is the same percentage of participants who reported using this intervention with children who were not diagnosed with AsD. Results show that academic interventions were selected at nearly identical rates for students who were and were not diagnosed with AsD. (See Table 13.)

Participants reported using the communication intervention “Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues” the majority of the time with children with AsD (68%). This is nearly the same percentage of participants who reported using this intervention with students who were not diagnosed with AsD (66%). Results showed that communication interventions were selected at nearly identical rates for students who were and were not diagnosed with AsD. (See Table 14.)
Table 13
Academic Interventions Used with Students Diagnosed with AsD Compared with Students Not Diagnosed with AsD

<table>
<thead>
<tr>
<th>Intervention</th>
<th>AsD %</th>
<th>NonAsD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Home School Partnership</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td>b) Self-Monitoring protocol for on-task behavior</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>c) Visual and verbal cues provided by teacher and classmates</td>
<td>37</td>
<td>37</td>
</tr>
<tr>
<td>d) Not enough information; I need to know</td>
<td>15</td>
<td>17</td>
</tr>
<tr>
<td>e) Other</td>
<td>15</td>
<td>11</td>
</tr>
<tr>
<td>Multiple</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 14
Communication Interventions Used with Students Diagnosed with AsD Compared with Students Not Diagnosed with AsD

<table>
<thead>
<tr>
<th>Intervention</th>
<th>AsD %</th>
<th>NonAsD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues</td>
<td>68</td>
<td>66</td>
</tr>
<tr>
<td>b) Teachers and parents reinforce discussion of topics beyond personal interest topics</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>c) Individual sessions with the speech pathologist, focusing on pragmatics</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>d) Not enough information; I also need to know</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>e) Other</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Multiple</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Participants reported using the social skills intervention “Group social skills training. . . ” most frequently with students with AsD (61%). This is nearly the same percentage of participants who reported using this intervention with students who were not diagnosed with AsD (62%). Results showed that social skills interventions were
selected at nearly identical rates for students who were and were not diagnosed with AsD. (See Table 15.)

Table 15
Social Skills Interventions Used with Students Diagnosed with AsD Compared with Students Not Diagnosed with AsD

<table>
<thead>
<tr>
<th>Intervention</th>
<th>AsD</th>
<th>NonAsD</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>b) Individual social skills training with the school counselor or school psychologist</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>c) Group social skills training with opportunities to practice in multiple settings</td>
<td>61</td>
<td>62</td>
</tr>
<tr>
<td>d) Not enough information; I also need to know</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>e) Other</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Multiple</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

Participants who Reported Working with a Student Diagnosed with AsD

Of the participants who completed all three of the items related to intervention experience with a child diagnosed with AsD, 75% (63/85) reported using an intervention with one or more students diagnosed with AsD. This number was dependent on the intervention selected and whether participants had used it with a child with AsD.) Eighty-five percent of the participants who reported working with a student diagnosed with AsD had implemented an intervention(s) at least once but not more than five times. The remaining 15% reported implementing interventions six or more times. This was calculated by adding the lowest number of the responses to survey Items 5a), 10a) and
15a). For example, if a participant selected 1 - 2 times, 3 - 5 times and 0 times, \(1 + 3 + 0 = \) at least 4 times.

**Experience with Students Diagnosed with AsD Versus Not Diagnosed with AsD**

Levels of experience differed between implementation of interventions for students diagnosed with AsD and students who had not been diagnosed with AsD. Each experience related response was assigned a numerical value. For example, 0 times was assigned 1, 1-2 times was assigned 2, 3-5 times was assigned 3, and 6 or more times was assigned 4. Analysis of data indicated that reported experience implementing an academic intervention with students diagnosed with AsD was lower than experience with students who had not been diagnosed with AsD.

Those who reported experience in the area of academics with a student diagnosed with AsD recorded 0 times or 1-2 times 62% of the time while another 27% reported 3-5 times. Participants reporting experience with a student who had not been diagnosed with AsD only reported 0 times 1% of the time. The majority (84%) of academic interventions for students who had not been diagnosed with AsD were recorded as 3-5 times or 6 or more times. (See Table 16.)

Levels of experience differed greatly between implementation of communications interventions for students diagnosed with AsD and students not diagnosed with AsD. Reported experience implementing a communication intervention with students diagnosed with AsD was lower than reported experience with students who had not been diagnosed with AsD. Those who reported experience with a student diagnosed with AsD reported 0
Table 16
Amount of Experience Implementing Academic Interventions

<table>
<thead>
<tr>
<th>Experience</th>
<th>AsD %</th>
<th>NonAsD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (0 times)</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>2 (1 - 2 times)</td>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>3 (3 - 5 times)</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>4 (6 or more times)</td>
<td>9</td>
<td>69</td>
</tr>
<tr>
<td>Missing</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 16.

Levels of experience differed greatly between implementation of social skills interventions for students diagnosed with AsD and students who had not been diagnosed with AsD. Reported experience implementing social skills interventions with students...
diagnosed with AsD was lower than experience with students who had not been diagnosed with AsD. Participants with experience with a student diagnosed with AsD reported 0 times or 1-2 times 71% of the time. Participants reporting experience implementing social skills interventions with a student who not been diagnosed with AsD reported 0 times and 1-2 times 22% of the time. The majority of responses related to students without an AsD diagnosis were 3-5 times or 6 or more times, which occurred 75% of the time. (See Table 18.)

Table 18
Amount of Experience Implementing Social Skills Interventions

<table>
<thead>
<tr>
<th>Experience</th>
<th>AsD %</th>
<th>NonAsD %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (0 times)</td>
<td>38</td>
<td>8</td>
</tr>
<tr>
<td>2 (1 - 2 times)</td>
<td>33</td>
<td>14</td>
</tr>
<tr>
<td>3 (3 - 5 times)</td>
<td>16</td>
<td>26</td>
</tr>
<tr>
<td>4 (6 or more times)</td>
<td>10</td>
<td>49</td>
</tr>
<tr>
<td>Missing</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Selection of “Not enough information” and “Other”

Comments written when the respondents chose “Not enough information...” were analyzed and arranged according to themes. Similarly, comments written when the participants chose “Other” were also analyzed and arranged according to themes. Results are presented in the area of academics first, followed by communication and, finally, social skills.
The three themes were: (a) more data or assessment needed, (b) previous interventions, and (c) Mike’s academic skill level and skill deficit areas. Four responses did not fit any of these categories and included statements about a lack of knowledge of AsD, unfamiliarity with the intervention options, and the need to find out about parent involvement and home life. The themes and complete list of written statements are listed in Appendix B.

Comments written when the respondents chose “Other” for Item 1 were also analyzed. However, all eight responses differed and could not be categorized. Comments written when the respondents chose “Other” for Item 2 were also analyzed. However, no themes were found. (See Appendix B for a complete list of narrative items to survey Items 1 and 2.)

Only three respondents chose “Not enough information...” for the communication item, Item 6. Therefore, no additional analyzing or categorizing was completed. Comments included a request for a functional behavior analysis, consultation with a speech and language pathologist, and more information about when his communication is successful. (See Appendix C for a complete list.)

Comments written when the respondents chose “Other” for the communication time were analyzed. Of the twelve participants who selected “Other” for Item 6, one-third recommended at least two of the choices (a), (b), and/or (c). In addition, there were three other respondents who selected more than one answer, (coded as Multiple) who chose this combination. The eight other written comments in “Other” for Item 6 were analyzed; no themes stood out. (See Appendix C.) Comments written when the respondents chose...
"Other" for Item 7 were analyzed; no themes were noted. (See Appendix C for a complete list.)

Only one respondent selected "Not enough information; I also need to know" for the social skills item, Item 11. (See Appendix D.) Three of the eight respondents who chose "Other" for this question selected a combination of at least two of (a), (b), and/or (c). In addition, there were four other respondents who selected more than one answer (coded as Multiple), who chose this combination. Other suggestions included social skills training, Circle of Friends, and social stories. The eight individual comments written for a choice of (d) Other for Item 12 were analyzed. However, no themes stood out. (See Appendix D for a complete list.)

Data for those who selected "Other" were combined and analyzed

Analysis indicated that when the three areas (academic, communication, and social skills) were combined, 68% of those who selected "Other" rated their skill level as High. When choosing "Other" was combined with having high experience, 84% rated themselves as High skilled.
CHAPTER 5
DISCUSSION

The results of the study will be discussed first, followed by a discussion of post hoc research findings. Third, this chapter will address issues related to the number of participants who reported working with a student diagnosed with AsD. Finally, recommendations for future research in this area will be given.

School psychologists most frequently selected the academic intervention “Visual and verbal cues provided by teacher and classmates.” Although there is no research evidence of the efficacy of this intervention, AsD literature suggests that visual cues are often helpful. “Home School Partnership (including but not limited to home-school notes and assignment notebook)” and “Not enough information; I also need to know...” were also selected frequently. Interestingly, few selected self-monitoring protocol for on-task behavior.

When addressing communication interventions, the majority of participants selected “teacher and parents are instructed in how to assist Mike in the use of functional language and social cues” for the communication intervention. Not only does this intervention encompass a larger part of his communication deficits than the other intervention options, but it also generalizes the intervention to include the teacher and parents, two of the student’s main adult contacts.

Data analysis indicated that participants most frequently selected the social skills intervention “Group social skills training with opportunities to practice in multiple settings.” This intervention is popular among practitioners for children with social skills
deficits because of its generalizability and opportunities for practice. Eighteen percent of
the participants recommended that “Adults prompt Mike to use a social skill on an as
needed basis (guided practice).” Fewer than ten percent chose the intervention “Individual
social skills training with the school counselor or school psychologist.” This intervention
is not supported in the literature because children do not generalize the social skills they
learn in individual settings.

When comparing which academic interventions participants perceived would receive
the most support by the child’s parents and his/her teachers, it was found that about one­
fifth more school psychologists perceived that parents and teachers would be most likely
to support the “Home-School Partnership...” intervention than recommended it
themselves. It is interesting that school psychologists commented that parents and
teachers would choose the intervention for its efficiency, yet selected it as the preferred
intervention less frequently. The literature suggests that the homework notebook is a way
to track homework and to get the parents involved in their child’s education, a goal of
many teachers and school psychologists.

School psychologists perceived that the student’s teacher and parents would be most
likely to select “Individual sessions with the speech pathologist, focusing on pragmatics”
for the communication intervention. Leading researchers in the field of AsD suggest this
intervention if it is used in combination with group practice because children with AsD
have difficulties with generalization. Perhaps some school psychologists knew this.
School psychologists also may have felt that this was too narrow a focus for such a broad
communication problem. Again, the concept of teacher time and someone else taking care
of the problem may explain the difference in choices. Also, school psychologists may have perceived that teachers and parents put a lot of faith in the speech pathologist's level of expertise. Comments related to this question focused on the need for education/training for teachers and parents in these areas so that they better understand the problem and intervention options and are more able (through training) to participate in the intervention. The more settings in which the intervention is implemented, the more likely it is that pragmatics will generalize.

Responses for the social skills intervention were similar to the school psychologists' recommendations. More than one-half of the participants recommended the intervention "group social skills training with opportunities to practice in multiple settings." A nearly equal number perceived parents and teachers would be most likely to support this intervention. This intervention has general research support. Participants perceived that teachers and parents would be most likely to support the intervention "Adults prompt Mike to use a social skill on an as needed basis (guided practice)." Participants reported that teachers and parents would also be most likely to support the "Individual socials skills training with the school counselor or school psychologist" intervention over three times as often as they recommended it themselves (20 to 6). There is no research support for this intervention because skills are not generalized beyond the individualized setting. School psychologists may be aware of this lack of research support.

In general, participants rated their skills above average. Participants reported being most skilled at helping implement academic interventions. Only one subject rated himself/herself as little or less than moderate skilled. This may be because of the multiple
academic problems school psychologists encounter while working in the field. Participants rated themselves lowest in the area of communication. It is likely that participants deemed the communication problems a responsibility for the speech and language pathologist and therefore felt less prepared to implement an intervention in this area.

When skill level and experience were compared, there was generally a match between the two. However, if there was not a match, participants were likely to rate their skill level high when they reported low experience. There are several possible explanations for this. First, school psychologists have training opportunities, as well as access to numerous resources. They may be trained or well-read in a specific intervention but have not experienced applying it in the field. Second, they may have multiple years of experience, thus elevated skill levels, but have not implemented the specific intervention in the field. It is also possible that school psychologists have been very successful in the field and have rated themselves as highly skilled even though they have not had much direct experience with a particular intervention. An alternative explanation is that some school psychologists did not associate experience implementing an intervention with skill level implementing an intervention.

While 21 participants chose “Not enough information; I also need to know” for Item 1, only three chose “Not enough information...” for Item 6 and 12 combined. In addition, 22 participants chose “Other” for Item 1. One explanation that participants chose “Not enough information...” is that the survey instrument was vague, providing no grades or previous interventions. Participants wrote that more data or assessments were
needed. However, such information was not provided in the communication or social skills sections of the questionnaire and subjects did not select the “Not enough information” response.

Nearly half of the participants selected different academic and communication interventions than they perceived parents and teachers would be most likely to support. Nearly one-third of the participants selected different social skills interventions than they perceived parents and teachers would be most likely to support. Many of the written explanations indicated the effect time has on intervention selection and implementation. The intervention which is most appropriate may not be implemented due to time constraints. School psychologists may implement the intervention that is more likely be supported instead. However, in most cases both enough time to implement the intervention appropriately and parental and teacher support must be present for an intervention to be successful. This indicates a need for adapting interventions and making accommodations to meet time constraints in order to implement the intervention with the highest probability of success. Differences in intervention selections may also indicate a lack of collaboration between the school and the Area Education Agency (AEA) personnel such as school psychologists.

Two major themes were present throughout the handwritten comments to the question “If you chose different responses for the above items, what are the implications of this in your practice?” The first theme was teacher time constraints. Teacher time constraints were sometimes reported as “the teacher feels overwhelmed the way it is, somebody else take care of this student’s needs.” However, teachers’ feelings may be the result of a lack
of experience with and lack of confidence in dealing with the needs such as those of the child described in this study. Projecting negative attributions onto teachers negatively affects the working relationship of the team and adds to the difficulty of choosing an intervention.

Another explanation may be the way school psychologists approach interventions during problem-solving. Perhaps the school psychologist has not presented teachers with multiple interventions and allowed teachers to select the one(s) he/she feels will be most helpful and manageable. If a teacher feels she/he has been forced into an intervention it is less likely that she/he will follow-through. On the other hand, if a teacher feels some ownership for an intervention it is more likely that she/he will implement the intervention with integrity.

The second major theme was parent and teacher buying in or receiving additional education, training, or consultation related to the need or intervention. Similar to what was discussed above, the more familiar one is and the more personal responsibility one has with the intervention, the more likely it is to be successful. It was the experience of many of the school psychologists in this study that the more "everyone" supports, believes in, and knows about the intervention, the more success it will likely produce. This raises an important question, "How can you get everyone on board with the most successful intervention, not just the intervention that everyone agrees to?" One way is to provide research evidence of the success of an intervention. Another way is to bring up past success with an intervention, particularly if it is local so that those involved are more likely to relate to its success. Also, if the school psychologist makes a list of interventions that
fit the need area, she/he can be sure to include those which have been researched and found to be successful and leave off those which are not recommended by research. Such suggestions may take extra preplanning time but actually could save time and prevent failure when the intervention is carried out.

For the academic interventions, only 2 of the participants chose the intervention “Self-monitoring protocol for on-task behavior” and both rated themselves as having low skill level. Because the student assumes major responsibility for following through with this intervention, participants may have experienced failure with it in the past and, therefore, not recommended self-monitoring. Students who need to improve self-monitoring skills often find it difficult and, without adequate teacher supervision, may fail. It is also likely that after reading the case description the participants felt that the student did not have the skills to self-monitor. An alternative possibility is that self-monitoring is new and different to these schools, therefore, avoided because people are often reluctant to try something they are not familiar with and have not experienced.

Based on the results of this study, skill level may be related to choosing “Other.” Participants with high skills, as well as high experience, were more likely to choose “Other.” This may be because school psychologists have preferred interventions that they are most comfortable using and these were not on the questionnaire. It may also be that they have more interventions to choose from in general, so when a specific problem comes up they refer to that intervention. Another alternative is that they have worked with a child with AsD in the past and referred to that intervention. Finally, they may have desired further information before selecting an intervention, which was often a written comment
accompanying the selection of “Other.” School psychologists who reported low skill level also tended to report having less experience. As a result, it is likely that they have fewer intervention options to choose from. Therefore, they may have “had” to select one of the three interventions available.

Seventy-four percent of the respondents (out of those who answered all three of the “how many times have you implemented this intervention with a child diagnosed with AsD” items) reported working with a student diagnosed with AsD. This number was higher than anticipated, however, it may not be accurate. There are two potential reasons for this. The percentage could be inflated because school psychologists who have worked with a student with Asperger’s may have been more likely to return surveys. Alternatively, it is possible that this number underestimated the number of participants who have worked with a student diagnosed with AsD because responses were intervention specific. In other words, participants could have worked with students with AsD but not in the context they reported in this questionnaire. At least one in every three school psychologists has worked with a child diagnosed with AsD. AsD has only been an official diagnosis for 5 years, making the number even more significant. This suggests a need for education of school psychologists in the area of AsD.

School psychologists reported using the interventions in this study for both students diagnosed with AsD and not diagnosed with AsD. However, they had implemented them much more frequently with students who were not diagnosed with AsD. This may indicate that the interventions presented here may be successful across labels and that labels are not indicators for specific interventions. It is also possible that school
psychologists recommended what they were familiar with for treating the student in the case description.

This questionnaire focused on intervention selection for a student diagnosed with AsD. As part of this research the questionnaire asked how many times the participant had “assisted with the implementation” of the selected interventions with a child diagnosed with AsD and his/her skill level. However, depending on individual definitions of “assisted,” participants may have been answering different questions. While some participants may have been judging their skill level at verbalizing recommendations, others may have been judging their skills in carrying out the intervention independently. The addition of an item addressing the type of assistance provided is recommended for future research on this topic. For example, participants could answer whether they: simply recommended the intervention, taught a fellow professional how to implement it, assisted a teacher/parent in carrying out the intervention, team taught the intervention, carried the intervention out independently, or described the steps of the intervention. This information could be helpful when compared with skill level to see whether school psychologists rate themselves lower at tasks which require “higher” skills, how involved school psychologists are in assisting with the intervention, and to help determine if more training is necessary for school psychologists in teaching others to successfully implement interventions.

Seventy-four percent of the school psychologists who answered all three of the items reported having used a particular intervention with a child with AsD, however, a more accurate count would be helpful. Achieving a more accurate count could be done by
including a simple yes/no question in the survey. Establishing a more accurate count of the number of school psychologists who have worked with a student with AsD would provide evidence for the need for future training and research in this area. Also, when the official recognition of the disorder and number of school psychologists who have encountered AsD are factored in, the need for increased training and education in the area of AsD becomes more evident.

More importantly, however, is the need for effective interventions for students with deficits and needs similar to those in students with AsD. This questionnaire did not ask whether or not the interventions used with students diagnosed with AsD were effective. This is an important step for future research. School psychologists need to know as much as possible regarding specific interventions in order to be most effective.

In some cases it was evident that participants perceived that the school and parents would differ in their choice of interventions. For example, several practioners reported that some teachers want to get the students “out of their hair” for a while or have someone else “fix” the child. Although such statements may be common, they create barriers for successful interventions. Perhaps additional team building activities could be used to strengthen the relationship between school and AEA personnel. Understanding others’ jobs and responsibilities is important so that each has a better idea of what and how much the other person is able to contribute. One way to help this process is to assign jobs for interventions. For example, the teacher might collect the baseline data, while the school psychologist completes observations and graphs the baseline data. Finally, developing goals would align the team members and clarify the objectives. Perhaps school
psychologists could work at designing less time intensive interventions and the teacher could work to follow through with interventions more consistently.
References


Case Description

Background: Mike is a 10 year-old male. His mother reported that he reached the major developmental milestones in the normal age range. Mike has an intense interest in fish. For example, by the age of 5 Mike was able to identify 30 types of fish by looking at photographs of them. Mike has a WISC-III Full Scale IQ of 94 with average verbal skills. He was given a diagnosis of Asperger’s Disorder in 2nd grade.

Academic: Mike self-adheres to a very strict schedule and becomes disturbed if it is disrupted. For example, everyday Mike arranges the day’s assignments from his homework folder into the same order and if an assignment is missing he perseverates on it until the worksheet has been replaced. This interferes with timely work completion. Mike has always had difficulty comprehending and following the directions on worksheets which causes him to incorrectly complete his assignments. The teacher’s major concern is Mike’s completion of assignments accurately and on time.

1. Place a check in the blank next to the one intervention that you think would be the most effective for Mike’s target problem:
   ______ a) Home School Partnership (including but not limited to home-school notes and assignment notebook)
   ______ b) Self-Monitoring protocol for on-task behavior
   ______ c) Visual and verbal cues provided by teacher and classmates
   ______ d) Not enough information; I need to know: ______________________________
   ______ e) Other: ________________________________

2. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:
   ______ a) Home School Partnership (including but not limited to home-school notes and assignment notebook)
   ______ b) Self-Monitoring protocol for on-task behavior
   ______ c) Visual and verbal cues provided by teacher and classmates
   ______ d) Other: ________________________________

3. If you chose different responses for the above 2 items what are the implications of this in your practice?

-- continued --
4. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #1? (Please circle one number.)

1  2  3  4  5
little skill moderate skill a great deal of skill

5. Please place a check next to one answer for each question. How many times have you assisted others in implementing this intervention:

a) with a child who has been diagnosed with Asperger’s Disorder?
   __ 0 times  __ 1-2 times  __ 3-5 times  __ 6 or more times

b) with a student who has not been diagnosed with Asperger’s Disorder?
   __ 0 times  __ 1-2 times  __ 3-5 times  __ 6 or more times

Social Skills/Communication: Mike is described as passive and a loner by his parents and teachers. Mike does not get along with peers, who often tease him. At recess he walks around the playground with the recess aide and does not play with any children. When Mike is interacting and becomes confused he does not ask for clarification, instead he switches to a familiar topic, i.e., fish. In conversation Mike speaks about one topic, such as types of tropical fish. He is unable to approach another person to make a request, such as when someone is in his way or making a noise that he finds annoying. He seems to lack the ability to engage in collaborative back and forth play; playing a game with peers often necessitates a “referee” because he wants everyone to do things his way. For example, in Parcheesi Mike insists everyone moves his/her “marker” along the left side of the path. If competitors do not comply, Mike moves their pieces to the left side of the path which often results in arguments or physical aggression. Finally, metaphors and figures of speech confuse Mike because he interprets them literally. Note: Mike’s communication and social skills needs will be addressed separately in the following two sections.

Mike’s Communication Needs

6. Place a check in the blank next to the one intervention that you think would be the most effective for Mike’s communication needs:

   __ a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues
   __ b) Teachers and parents reinforce discussion of topics beyond personal interest topics
   __ c) Individual sessions with the speech pathologist, focusing on pragmatics
   __ d) Not enough information; I also need to know: ________________________________
   __ e) Other: ________________________________
7. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:

   _ a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues
   _ b) Teachers and parents reinforce discussion of topics beyond personal interest topics
   _ c) Individual sessions with the speech pathologist, focusing on pragmatics
   _ d) Other: ____________________________

8. If you chose different responses for the above 2 items what are the implications of this in your practice?

9. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #6? (Please circle one number.)

1 2 3 4 5
little skill moderate skill a great deal of skill

10. Please place a check next to one answer for each question. How many times have you assisted others in implementing this intervention:

   a) with a child who has been diagnosed with Asperger’s Disorder?

   _ 0 times  _ 1-2 times  _ 3-5 times  _ 6 or more times

   b) with a student who has not been diagnosed with Asperger’s Disorder?

   _ 0 times  _ 1-2 times  _ 3-5 times  _ 6 or more times

Mike’s Social Skills Needs
11. Place a check in the blank next to the one intervention that you think would be the most effective for Mike’s social skills needs:

   _ a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)
   _ b) Individual social skills training with the school counselor or school psychologist
   _ c) Group social skills training with opportunities to practice in multiple settings
   _ d) Not enough information; I also need to know: __________________________

   _ e) Other: ____________________________

12. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:

   _ a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)
   _ b) Individual social skills training with the school counselor or school psychologist
   _ c) Group social skills training with opportunities to practice in multiple settings
   _ d) Other: ____________________________

   -- continued --
13. If you chose different responses for the above 2 items what are the implications of this in your practice?

14. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #11? (Please circle one number.)

1 2 3 4 5
little skill moderate skill a great deal of skill

15. Please place a check next to one answer. How many times have you assisted others in implementing this intervention:

a) with a child who has been diagnosed with Asperger’s Disorder?

__ 0 times __ 1-2 times __ 3-5 times __ 6 or more times

b) with a student who has not been diagnosed with Asperger’s Disorder?

__ 0 times __ 1-2 times __ 3-5 times __ 6 or more times

- THANK YOU FOR PARTICIPATING! -
APPENDIX B
NARRATIVE RESPONSES TO ITEMS 1 and 2

Item 1

Complete list of written comments to (d) Not enough information. I also need to know
(1) More data or assessment needed

- Why is he losing worksheets, especially given his level of organization. Are usual
schedules, timers, etc., provided?
- What level of instruction is needed to allow him to understand and complete assignments
correctly?
- If he is successful in any settings and under what conditions; if he has any strategies to
request help.
- Some actual baseline data. What types of directions are most difficult to follow? What
is the behavioral definition of perseverates?
- Does the teacher understand the ramifications (educational and other) of a diagnosis of
Asperger’s? Has his work been evaluated/adjusted to appropriately match his capabilities
- Still need to know what the “target” problem is, i.e., is it the same as the teacher’s
concern?
- Is the teacher ensuring he understands all assignments? What is his current completion
rate/accuracy? What else has been tried? What are peer rates and accuracy?
- Reading difficulties? Fluency/comprehension? Auditory/Visual processing concerns?
Visual concerns -- hearing?
- Current percent of assignment completion? Does he start but not finish?

(2) Previous interventions
- What interventions have previously been attempted? [What] modifications [and]
accommodations? Teacher willingness to modify? Is Mike currently receiving special
education services? [Is he] on medication?
- More information on interventions in place, e.g. have TEACCH strategies been used?
- What has been done previously?
- What has and has not been tried? Could “fish” be used as a reward or would he
perseverate on this?

(3) Mike’s academic skill level and skill deficit areas
- General academic skill level. Is he able to complete assignments independently? Skill
deficit versus performance deficit. IQ does not lend itself to this type of information.
- If student has skill deficits in reading/listening comprehension?
- Regular education or special education classes? Academic skill level, teacher instruction
(does it match Mike’s) how adequate was the instruction piece that preceded the
assignments did guided practice time provide adequate practice?
- More about what is happening at home. Because of his comprehension problems, he
probably should have some supervision at home; detailed instructions so parents know
precisely what is expected, etc. Maybe special help/strategies about instructions on
worksheets.
(4) Other comments
- Without knowing the specifics of the above procedures I would lean toward Self-Monitoring but would probably use a combination of procedures.
- More about Asperger’s Disorder.
- Are parents involved in Mike’s education or willing to be involved? Does Mike’s achievement level match [his] IQ? Is it a skill or performance deficit?
- More about the worksheets and how they are assigned ([is] verbal instruction first, then solo work or only solo work). What level [of] work is assigned? Can he do it? Also need more information such as homework folder and the worksheets that he needs to put in order.

Complete list of written comments to (e) Other
- Create color-coded work system for each subject with a clearly labeled “done” area. Work to be done taped to left-side of desk (in an expandable folder) and “done” work on the right side in an expandable folder.
- Modification of instructions; use of color coding of assignment sheets for each subject so if no assignment for that subject still has a sheet to put in the order; system of home school daily checking with a self-monitoring component to build self-reliance (decrease dependency).
- Use Mike’s ownership of his behavior to make changes.
- Work with teachers to make accommodations including: frequent contact with Mike, break assignments into short segments, pair him with a peer partner when beginning assignment.
- Visual schedule using time limits.
- Token economy and other types of reinforcement for work completion.
- Mike needs specialized teaching now!
- Consult with teacher, tell him/her to relax, the kid has enough problems there is little she/he can do to change things.

Item 2

Complete list of written comments to (d) Not enough information. I also need to know
- [Teachers are] more apt to provide only verbal cues, not visual.
- Taped assignments; time-out; long range reward: this number of A’s = this reward.
- Unsure. No information on parent support or home environment.
- Have peer/adult read directions and explain to student.
- Depends on how well child/parent are liked by the school. It is March- cynical thoughts abound.
- Having Mike identify and do what is needed.
- Visual schedule using time limits.
APPENDIX C
NARRATIVE RESPONSES TO ITEMS 6 and 7

Item 6

Complete list of written comments to (a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues
- Through social stories and direct teaching.
- Should be systematically taught throughout daily situations.

Complete list of written comments to (c) Individual sessions with the speech pathologist, focusing on pragmatics
- And language development. . . consult with teacher/teacher prompt learned behaviors in class.

Complete list of written comments to (d) Not enough information; I also need to know
- There is not enough functional behavioral information with peers, [for example] what he does to make a request, how often he is aggressive.
- I would need to consult with a speech and language pathologist who knows much more about his area than myself.
- When he is successful or his better communication and what strategies are used.

Complete list of written comments to selection of (e) Other
(1) At least two of (a), (b), and/or (c)
- A combination of (a) and (c), either by itself in my experience has not been successful.
- (a) with follow-up support with consideration of (c) involving pairs/groups in classroom, playground.
- Direct instruction plus (a) and (b) above!
- Social skill for verbal interaction taught individual as well as in groups; verbal prompts for process until he can initiate simple interactional behavior.
- Develop agreement with Mike about issues of space, control, sharing, taking turns, etc.
- I think (a), (b), and (c) are needed, possibly other interventions- why only one?

(2) Social Stories
- Social stories.
- Social stories.

(3) Other written responses
- Circle of Friends to assist other kids to understand Mike’s problems and then a structured social activity led by teacher.
- Appropriate special education with speech.
- It is more important to accommodate him than try to totally change his behavior.
- Direct social skills and motivation.

Multiple selections
- (a) and (e), group work is also very helpful.
- (a), (b), and (c).
- (b) and (e) Circle of Friends.

**Item 7**

*Complete list of written comments to (d) Other*
- Basic social skills training.
- Direct social skills and motivation.
- Not enough information.
- Appropriate special education with speech.
- Client based decisions work best.
- Consider using social stories to assist.
- Support the parents as they learn how to work with child. The teacher should be a supportive and accommodating as possible within reason!
- I think parents/teachers would support all.
- A combination of (a) and (c), either by itself in my experience has not been successful.
- The Circle of Friends works well and a structured social activity where the kids understand in advance is most helpful.

*Multiple selections*
- (a) and (c)
APPENDIX D
NARRATIVE RESPONSES TO ITEMS 11 and 12

Item 11

Complete list of written comments to (b) Individual social skills training with the school counselor or school psychologist
- (b) using scripts

Complete list of written comments to (c) Group social skill training with opportunities to practice in multiple settings
- Social skills taught in a 1:1 session with a predictable adult lack the variety, unpredictability, and emotional component of group peer interaction.

Complete list of written comments to (d) Not enough information; I also need to know
- What are the environmental demands/expectations? Which social skills are priorities to parents/teachers? How often he is placed in a social setting?

Complete list of written comments to (e) Other
- As above, I think a combination of (b) and (c).
- Individual social skills training (b) with structured opportunities in (c).
- (a), (b), (c), together designed individually for Mike.
- Individual practice and Circle of Friends.
- Social stories.
- Appropriate special education to reverse integration.
- Have Mike identify social target skills to be worked on with others.
- Individual difference training for his person how to deal with Mike.

Multiple Responses
- (a), (b), and (c) no one thing will totally work.
- (a), (b) and (e) I don’t think it is possible to use only one intervention that will be best.
- (a) and (c).
- (a) and (c), but more so (c).

Item 12

Complete list of written comments to (b) Individual social skills training with the school counselor or school psychologist
- If someone other than teacher was doing.

Complete list of written comments to (c) Group social skill training with opportunities to practice in multiple settings
- Depending on who is leading the group and how long the group is being run.

Complete list of written comments to (d) Other
- Not enough info.
- They have supported Circle of Friends.
- Social stories.
- Appropriate special education to reverse integration.
- Individual social skills training (b) with structured opportunities in (c).
- Use Mike's identified goals to improve behaviors with support from others.
- Most teachers and parents are unaware of what works and therefore they believe social skills with counselor/psychologist will work.
- [No written response].

Multiple selections
- (a) and (c).
APPENDIX E

NARRATIVE RESPONSES TO ITEMS 3, 8, AND 13

If you chose different responses for the above 2 items what are the implications of this in your practice?

Item 3

1) Parents and Teacher Buying In
- Need to make it easy on teacher and parent to build in component of responsibility for Mike [chose (c) self-monitoring].
- I don’t do interventions unless the teacher and parents are willing to support them because in reality, it is the teacher who does it.
- Most parents and teachers are willing to work together to help school be as effective as possible.
- A lot of consultation time would be needed to educate and persuade those involved as to why self-monitoring might be the most effective intervention.
- School staff tend to support the interventions that they are most familiar with and that are the least intrusive. Training and encouragement would be needed to go beyond the typical interventions.
- Education for teachers and parents are as (or more) important than the intervention.
- Nothing significant, any intervention plan should be multifaceted, both or all could be components that all agree to try.
- I must consult, provide resources/samples and demonstrate other instructional options and interventions that might be most appropriate for Mike.
- One needs to select an intervention that has the most potential to result in benefit and will be supported by those responsible for implementation.
- Teacher and parents often have a need for active participation and control when something as important as a child’s education is involved (this is most of the time).
- Consulting with teachers and parents to develop a program that works for Mike.

2) Teacher Time/Effort Theme
- Teachers would be more willing to support an intervention that does not require a great deal of extra time and effort for them.
- Self-monitoring may involve less teacher time, but also less teacher “ownership.”
- Teachers might not understand the mechanics of a schedule, not use the schedule, or be unwilling to use the schedule.
- The most user friendly intervention [here marked (a) Home School Partnership] is not always based on data or likely to be effective but it is the path of least resistance.
- It would take a great deal of pre-planning lessons in order to create visual cues. Whereas, a home-school notebook would require less effort. I am basing this on the majority of schools I work in, but there are always exceptions and more cooperative schools.
- Teachers typically indicate they don’t have enough time to make visual schedules, etc. So my job as a practitioner is to tell/show/demonstrate how much more effective it will be for the student now and in the future.
- I don’t think the teacher’s going to want to make sure he has a sample problem for each worksheet (after this person suggested it above).
- Teachers seem to have accepted the home-school systems in my buildings but often are not very creative or specific in their use or in augmenting this with other individualized strategies so I attempt to assist in moving beyond the norm.
- I generally chose to implement the intervention that the teacher is willing to do/support. It is important to have an intervention done properly and followed through on. If the teacher thinks it is too time consuming he/she will not follow through.
- The majority of teachers are willing to try an intervention they feel they have some amount of control over. I would not start with the intervention I marked in #2 (home school partnership) because that gives Mike yet one more piece of paper as a distraction but teachers would likely support it. Sometimes it takes patience in practice to find an intervention that “fits”.
- Teacher willingness to try interventions is always a major consideration. Collaborative, not expert role, is needed to ensure cooperation.

3) Questions
- If [self-monitoring] was implemented without consideration of [more questions about work] there may continue to be problems, especially if there are some concerns with frustration due to difficulty level of work and/or some escape box. Must look at all aspects of his environment and the demands of the task before implementing an intervention.
- If I had this many questions about the best way to intervene, I would know to ask more questions and try to foster agreement on a collaborative intervention.
- I need more information to make a sound decision, but if forced to choose- home-school and visual/verbal are commonly used and would assist in gaining more information on the student (signs of frustration, ability to complete assignments in one area more so than another, additional environmental factors impacting ability to do assignments.
- Gather more data!

4) Skill versus Performance Deficit
- My first determination is whether the child is capable of doing the work assigned-performance versus skill deficit.
- That interventions are often designed due to perceived behavioral deficits (i.e. task behavior) versus skill deficits and if student had difficulty with the skill identified completing work sheets would be less of a concern.

5) Other
- I would need to provide visual cues and help arrange the system (or another support professional would help do this). Visits to classroom to see that the system was being used as designed would probably be necessary.
- It really depends on the parents which I would use.
- Too few Asperger type students going through the rural school district that I serve and teachers want them in special education.
- Teacher and students would cue to the task completion and assist with Mike’s attention to self-monitoring protocol.
- Perhaps that schools and teams do not consistently look at a broad perspective, but focus in on discrete behaviors.
- The home school partnership activities are generally more effective, but take more time and organization for teachers to do well. Therefore, I usually try to help with setting up the system and connecting to rewards/consequences. This takes time for consultations and follow-up. Often I don’t have adequate time. Also, part of the intervention would likely include visual structure, cues, prompts, schedules, etc.
- Create an intervention which combines components of “supported” intervention with “most effective”. Also, assist in creating and implementing “most effective” until its success is seen and it becomes more supported.
- Modifications in curriculum, instruction, and environment are more productive than forceful attempts on the learner or parents. (a) and (c) above should be used and would be of some help.
- I think teachers need to be reinforced and possibly prompted to involve home components in interventions. I see my role as one that can aid in the facilitation of more home involvement.
- Sometime intervention takes place before all information is gathered. This is reality.
- The teachers in my buildings have received informational and skill building workshops. On implementing visual cues and restructuring work at all grade levels.
- It is something to do and at least improves communication between home and school.
- If Mike had received appropriate special education at age 5 he would appear very normal by age 10- if you spend another year trying interventions as described, Mike will be very handicapped for the rest of his life.
- None what ever- use common sense.
**Item 8**

1) **Additional Training**
- This is a difficult area for teachers (and parents) to understand. Making another professional responsible would solve the dilemma.
- Teachers and parents need more training on how to implement intervention.
- Would need to make sure the teacher and sufficient information and support to instruct student regarding language and social areas. Speech and language Pathologist would work as consultant to teacher.
- Consultation skills to assist in convincing parents and teachers that this cannot/should not be "fixed" by someone else in a pull-out program would be very important.
- I think the confidence, time, and competence that parents and teachers feel would be needed would seem overwhelming to them and they would prefer to have an expert take over.
- Education of parents and teachers is as important as intervention design.
- Unfortunately, due to time, people tend to look to someone else to do the intervention. Then my time is needed to re-educate as to the appropriateness of each intervention.
- Unsure, there are many unknown variables. Teacher and parents may not be educated enough about AsD to effectively intervene.
- Adults working with Mike need to be aware that there is little likelihood pragmatic skills will carry over from isolated speech therapy sessions to need life situations.
- Very limited generalization.

2) **Teacher Time**
- Often if the intervention is more cut and dry, i.e. pull out instruction of skills, teachers are more likely to support it, especially if they don't have to provide the intervention.
- To do (a) requires considerable investment of teacher time which often would be preferred left to someone else. I tend to encourage collaboration, i.e, involving speech therapist, counselor with group work, myself helping with social skills, etc.
- Sometimes it's difficult to convince teachers that interventions can be carried out more effectively in the classroom rather than "sending them away".
- I find teachers, if given the opportunity, would like someone else to take the problem and work with it even if the best solution would be helping the student in the general education environment.
- I have found that teachers prefer interventions in which they do not have to do any extra work. It is important to have teacher support.
- Teacher won't have time to do this, and both parents and teachers would need much coaching to proceed.
- Many teachers seem so overwhelmed with significant special needs students that I think any relief the teacher can have with the student out of the room is much welcomed. Teachers and parents also feel that any specialist that can teacher their child individual will also help.
- I know what will be effective for kids- but often you have to work with what teachers are willing to try and do somewhat reliably. It's sad to think kids aren't getting what they really need.
- Most teachers would prefer to have Mike "follow" with class instruction/topics than to individualize "something different" for Mike. I often need to spend time with the teacher to have them spend a little extra effort for individual remedial efforts.
- Again, teachers say they don't have enough time, difficult to help them implement.

3) Multiple Interventions and People Involved
- Since the direction was to choose only one that is what I did. However, in my practice, none of the students with AsD use this intervention alone. We always combine it with individual sessions with a Speech and Language Pathologist.
- Discussion, consensus building, staff development, or speech therapy services to try and see if it's effective.
- Try to reach some sort of consensus - find a way to combine these methods so no one party has all the responsibility.
- Again, discussions need to take place... what's best/most effective for Mike versus what's easiest for teacher and parents.
- Need to development intervention collaboratively, educate teacher.
- The teacher, parents, and Speech and Language Pathologist will work together and share expertise to assist Mike. This team approach is most effective.
- One intervention above will not be most effective. In addition to pull-out for language instruction, there also needs to be cross-over instruction and follow-up both in the regular classroom as well as at home.
- There are various factors to consider and methods that should be tried. Need a lot of information about how he functions in the environment, strengths and weaknesses.
- Development agreement with Mike about issues of space, control, sharing, taking turns. Client based decisions work best.
- Often the support staff, teaching staff, and parents compromise on what interventions can and will be attempted. Different parents, different teachers perceive implementation and efficacy different than support staff, therefore what I believe would be to be most effective may not be the intervention first attempted. Support staff must keep in mind that they do not deal with the student 7 hours a day/5 days a week.

4) Other
- I think that the Speech and Language Pathologist is readily available in the school and would be readily accepted in an inter plan for this difficulty. If the psychologist would be able to provide teacher and parent training - my teachers would be willing- especially if it provided visual cues (Boardmaker) and consistent communication between psychologist and parents/teacher. This may be a choice that is not favored by teachers due to a time (ongoing) investment; but they have been open to it with visual cues to help them with implementation and parent support.
- Speech pathologist has been in this district for 20 years.
- Best option may be more time intensive for planning, instruction, follow-up.
- The offered interventions might be viable for students with social skills deficits other than Asperger's but such students need to have scripts available to assist in teaching social skills.
- Assist in the direct social skills instruction if necessary.
- None. School psychologist or any other kind of psychologist's best tool is her/her ability to be reasonable, use basic sense, and recognize they cannot be all things to all people.
Item 13

1) Teacher Time and Competence
- Same as #8, often teachers want someone else to do it, when it is more appropriate or effective in the classroom.
- Both teachers and parents are likely to be happy for someone else to deal with the problem.
- Less time involvement for teachers if #12 chosen [individual social skills training] however, Mike would likely benefit in social skills training with peers in various settings in which he needs to function.
- You need to go with what people are willing to do.
- Teachers seem to feel a bit overwhelmed when faced with additional disruptions in an already overcrowded classroom. So it seems the easiest thing to do would to put the responsibility on the school counselor/psychologist.
- I think the confidence, time, and competence that parents and teachers feel would be needed would seem overwhelming to them and they would prefer to have an expert take over.
- Again, it is easier to want to place responsibility with someone else.
- Again, teachers would see this as a responsibility beyond their training.
- Planning, instruction follow-up time for #11 (e) all of the above would be problematic.

2) Focus on the Helping Process
- Through the process and encourage a collaborative approach.
- Helping the teachers understand how the generalization is easier and deeper if social skills are taught with other children with practice in many settings.
- Discussion, consensus building, staff development or short-term services to try and see if it’s effective.
- (b) Individual social skills training is easiest and you have to make involvement in intervention practically possible and demonstrate progress.
- Would require time to assist student that could be implemented in regular education.
- How to get teachers/others to support “carry over” activities?

3) Teacher/Parent Education/Training/Consultation
- Education of parents and teachers.
- Teacher/parent training needed.
- Convincing others that Mike’s peers could be the best “teachers” for this could be a challenge.
- Not giving the perception that the school psychologist is trying to “get out of it” may mean developing a group for Mike.
- Minor- would require discussion with parents.

4) Individual training followed by group training
- Individual training followed by opportunities to practice social skills in a group setting will greatly assist his progress.
- Again it would be helpful if these skills could be taught one-on-one as well as in a group situation. I don’t think any of these interventions in isolation will be effective.
- Child must have the chance to practice in multiple settings with whatever prompts that it takes for them to initiate the appropriate behavior. Use of behavior modification and skill training is seldom preferred by teacher in regular classroom.
- Parents/teachers/janitor/school psychologist/cooks/administrators should all be informed on how to prompt appropriate behavior and reinforce the behavior in a meaningful way to Mike.
APPENDIX F

TALLIED QUESTIONNAIRE RESPONSES

1. Place a check in the blank next to the one intervention that you think would be the most effective for Mike’s target problem:
   a) Home School Partnership (including but not limited to home-school notes and assignment notebook)
   b) Self-Monitoring protocol for on-task behavior
   c) Visual and verbal cues provided by teacher and classmates
   d) Not enough information; I need to know: ________________________________
   e) Other: ________________________________

2. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:
   a) Home School Partnership (including but not limited to home-school notes and assignment notebook)
   b) Self-Monitoring protocol for on-task behavior
   c) Visual and verbal cues provided by teacher and classmates
   d) Other: ________________________________

3. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #1? (Please circle one number.)

   1 little skill  
   2 moderate skill  
   3 a great deal of skill

4. Please place a check next to one answer for each question. How many times have you assisted others in implementing this intervention:

   a) with a child who has been diagnosed with Asperger’s Disorder?
      0 times  
      1-2 times  
      3-5 times  
      6 or more times
   b) with a student who has not been diagnosed with Asperger’s Disorder?
      0 times  
      1-2 times  
      3-5 times  
      6 or more times
Mike's Communication Needs

6. Place a check in the blank next to the one intervention that you think would be the most effective for Mike's communication needs:

a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues
b) Teachers and parents reinforce discussion of topics beyond personal interest topics
c) Individual sessions with the speech pathologist, focusing on pragmatics
d) Not enough information; I also need to know: ________________________________
e) Other: ________________________________

7. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:

a) Teacher and parents are instructed in how to assist Mike in the use of functional language and social cues
b) Teachers and parents reinforce discussion of topics beyond personal interest topics
c) Individual sessions with the speech pathologist, focusing on pragmatics
d) Other: ________________________________

9. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #6? (Please circle one number.)

<table>
<thead>
<tr>
<th>Little Skill</th>
<th>Moderate Skill</th>
<th>A Great Deal of Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>14</td>
<td>34</td>
</tr>
<tr>
<td>28</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

10. Please place a check next to one answer for each question. How many times have you assisted others in implementing this intervention:

a) with a child who has been diagnosed with Asperger's Disorder?
   - 0 times
   - 1-2 times
   - 3-5 times
   - 6 or more times

b) with a student who has not been diagnosed with Asperger's Disorder?
   - 0 times
   - 1-2 times
   - 3-5 times
   - 6 or more times

Mike's Social Skills Needs

11. Place a check in the blank next to the one intervention that you think would be the most effective for Mike's social skills needs:

a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)
b) Individual social skills training with the school counselor or school psychologist
c) Group social skills training with opportunities to practice in multiple settings
d) Not enough information; I also need to know: ________________________________
12. Place a check in the blank next to the one intervention that you perceive teachers in the school and parents would be most likely to support:
   9   a) Adults prompt Mike to use a social skill on an as needed basis (guided practice)
   20   b) Individual social skills training with the school counselor or school psychologist
   51   c) Group social skills training with opportunities to practice in multiple settings
   8   d) Other: ____________________________________________

14. How skilled do you believe you are in the procedure needed to implement the intervention you selected in question #11? (Please circle one number.)

   little skill  moderate skill  a great deal of skill
   1   4   32
   1   37   15

15. Please place a check next to one answer. How many times have you assisted others in implementing this intervention:

   a) with a child who has been diagnosed with Asperger’s Disorder?
      35  0 times  30  1-2 times  15  3-5 times  9  6 or more times

   b) with a student who has not been diagnosed with Asperger’s Disorder?
      7  0 times  13  1-2 times  24  3-5 times  24  6 or more times

  *Cases where no response was provided were not included in this record.