SOCIAL SKILLS USE OF ADOLESCENTS WITH LEARNING DISABILITIES: AN APPLICATION OF BANDURA'S THEORY OF RECIPROCAL INTERACTION

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This was a mixed methods study designed to investigate the social skills use of adolescents with learning disabilities through an application of Albert Bandura's theory of reciprocal interaction. Data were collected through ranking surveys, observations, interviews, and school records.

Three questions were investigated. The first question was to determine whether the language deficits of LD students contributed to their general decreased social competency. Through data from the Social Skills Rating System, the seventh grade participants were considered socially competent to some degree by self report, their teachers, and their parents. Factor analysis revealed students were the best predictors of their social skills use from all data sources. In ranking participants' social skills use, students and teachers were more strongly correlated than were students and parents, or teachers and parents. No relationship of any strength existed between the participants' cognitive ability and their social competence.

A use of Bandura's determinants indicated that a relationship existed between some subtypes of learning disabilities and some types of social skills misuse. The participants diagnosed with reading disability, auditory processing disability, receptive/expressive language disability, or nonverbal learning disability all made the majority of their observed social skills errors in the environmental determinant of Bandura's triad of reciprocal interaction. The participants in the four subtypes

experienced their information processing deficits in attending to environmental stimuli, or in attending to inappropriate environmental stimuli. The area of the subtype of information processing deficit aligned with the determinant in which the participants in that subtype's social errors were experienced. Bandura's triad of cognition, environment, and behavior was not equilateral because the balance did not exist between the three determinants in participants with learning disabilities.

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CHAPTER 1

INTRODUCTION

Introduction

Throughout history, many children have encountered problems in learning. The basis of the learning problem might be obvious, such as a vision, hearing or motor impairment, or invisible, such as a deficit in intellectual capacity. Of continuing concern is the child without any deficit in vision, hearing, movement, or cognitive ability who does not readily understand or use language well. In the last 40 years the term "learning disability" has been used (Turkington & Harris, 2002) to denote a certain syndrome of learning problems. Under federal law existing before the mid-1960s, underachieving children could not receive special education services unless they were diagnosed as emotionally disturbed, mentally retarded or physically handicapped (Lyon & Fletcher, 2001). Many parents did not allow special education placement for their child because of the perceived stigmatization of the labels within the existing special education categories.

The term "learning disability" (LD) was first introduced by Dr. Samuel Kirk (1963) to denote problems of the perceptually handicapped child. More than a decade later, learning disability was accepted as an additional special education category in federal IDEA legislation (Individuals with Disabilities Education Act, 1975). Learning disability focused attention on the deficits resulting from the disability rather than the cause of the disability, shifting emphasis from the cause to the effect of the disability. "Learning disability" put the focus on the learning process rather than the emotional, intellectual or physical origin of the disability. The LD student was deficient in being able to process

information through traditional instructional methods. The newly added learning disabled category provided a more precise category for that population of children.

Statement of the Problem

Children with learning disabilities have difficulty with social skills as well as with learning because they do not accurately perceive social signals, cues, and patterns. An example is a child with learning disabilities standing too close to another when asking a question and speaking in an inappropriate tone of voice. The child with LD frequently does not understand a person's negative facial affect as conveying disapproval or may not understand what caused the disapproval. The dual challenge of learning in a classroom, and also experiencing difficulty in learning, acquiring, and using appropriate social skills is a recurring problem for many individuals with learning disabilities (Sturomski, 1995).

Purpose of the Study

The purpose of this study is to determine the social skills use of students with learning disabilities as measured by the triad of components in Bandura's theory of reciprocal interaction. Examining the condition of low social competency among learning disabled adolescents through the application of Bandura's reciprocal interaction is valuable from an epistemological perspective. Bandura theorizes that learning is a continuous reciprocal interaction among the environment, the individual's behavior, and his or her cognitive processes. Determining how others such as peers, parents and teachers perceive the social skills use of the student with learning disabilities presents a richer, more comprehensive picture of the phenomenon. The purpose of this study was to ascertain whether certain types of social skills problems are more frequently associated with certain subcategories of learning disabilities.

Research Questions

1. Does the language processing disorder of children with learning disabilities contribute to their general decreased social competency as viewed through the application of Bandura's reciprocal interaction?

    a) How do 7th grade students with learning disabilities perceive themselves as social beings?

    b) How do teachers of 7th grade students with learning disabilities perceive them as social beings?

    c) How do parents perceive their children with learning disabilities as social beings?

2. Is there a relationship between cognitive ability and social competence in 7th grade students with learning disabilities?

3. What is the nature of the relationship between the type of learning disability and the type of social incompetence shown by 7th grade students with learning disabilities?

Setting

The population of adolescents with learning disabilities in the study is enrolled in a private school specifically for children with learning disabilities. The students all manifest average or above average intelligence as measured by the Wechsler Intelligence Scale for Children® instrument (WISC - III) (Harcourt Assessment, Inc., San Antonio, TX, www.PsychCorp.com) or the Slosson Intelligence Test® instrument (SIT) (Slosson Educational Publications, Inc., East Aurora, NY, www.slosson.com). The school enrolls diagnosed children from early childhood through 12th grade. All of the students have been screened for primary emotional disturbances that could negatively affect their learning or the learning of their peers.

The school offers a curriculum of structured, multi-sensory social skills use that is initiated in Early Childhood and continues through 8th grade. The curriculum titled Choices (Ames & Pickering, 1993) is taught 30 minutes daily through the academic year. The major concepts in the curriculum include responsibility, self-discipline, self-control, consideration for others, and specific social skills. Each major concept expands on the previous year's lessons. During 7th and 8th grade, there is some variability in the curriculum, as Choices includes social dilemmas such as dangerous substances and sexual activity. In 9th through 12th grade, the Choices curriculum transitions into a separate mandatory daily ethics curriculum.

The students in the 7th grade served as the population under study. Seventh grade was selected due to the increasing deviation in the Choices curriculum at 7th and 8th grades from elementary grades, k - 6. In addition, the inclusion of students with sufficient vocabulary and communication skills to communicate on a relatively sophisticated level increased the potential for depth and breath of information relevant to the study of social skills use. Out of 74 potential 7th graders, those who volunteered to participate in the study possessed the following commonalities: scores from the Wechsler Intelligence Scale for Children or Slosson Intelligence Test, enrollment at the school for a minimum of 2 years, and absence of attention deficit disorder (ADD) or attention deficit hyperactivity disorder (ADHD) as their primary learning disability diagnosis. This study focused on learning disabilities and social skills use and the condition of ADD or ADHD would confound the data on the effects of learning disabilities on types of social incompetence.

In order to study the strength of the relationship between cognitive ability and social competence, an IQ evaluation common to all the participants was preferred as a measure of cognitive ability. The school in the study primarily used the Wechsler Intelligence Scale for Children or the Slosson Intelligence Test in their battery of evaluation tests. The Wechsler Intelligence Scale for Children is preferred over the Slosson Intelligence Test. The Slosson is a quick test which measures verbal cognitive ability. Because the Slosson measures verbal ability and many learning disabled students have deficits in the receptive/expressive language category, it is not the optimum measure of cognitive ability for this particular population. The 4 conditions of grade level, enrollment longevity, IQ testing, and absence of ADD/ADHD diagnosis formed the parameters of the potential student population in the study.

Defining Learning Disabilities

A discrepancy definition of the difference between the student's intellectual ability and the student's academic achievement is the general diagnostic measure of learning disability used by the school in which the study was conducted. An adolescent student with an IQ of 115 and who reads on a 3rd grade level and has no visual, hearing, or motor impairment or emotional disturbance is considered learning disabled. Since learning disabilities consist of a constellation of symptoms, great variation exists among the students and the types of learning disabilities diagnosed and ascribed. The federal definition of learning disability (LD) is a disorder in understanding and using language.

The majority of research on learning disability and social competency does not form distinctions between the various forms of learning disability with individuals grouped as LD or non-LD. Researchers (Foss, 1991b; Gerber & Sisterhen, 1989; Harnadek & Rourke, 1994; Morris, 2002; Roman, 1998; Rourke, 1989; 1995; 2000;

1996; San Miguel, Forness, & Kavale, 1996; Telzrow & Bonar, 2002; Vacca, 2001) are increasingly delineating the constellation of symptoms into 2 major LD categories: verbal learning disabilities (VLD) and nonverbal learning disabilities (NLD). Verbal learning disabilities are manifest as an imperfect ability to read, write, think, or spell with the symptoms primarily confined to a focused area. Nonverbal learning disabilities result in a globally low ability to internalize needed skills for commonplace interactions and learning (Rourke, 1995; Rourke & Fuerst, 1996; Thompson, 1997). Researchers have shown that individuals with NLD demonstrate lower social competency in general than those with VLD.

Due to the perception deficits associated with learning disabilities, many LD children's perceptions of themselves in social contexts result in miscues, mismanagement, and misunderstandings of normal social interactions and expectations. There may be collisions with word decoding or attention, trouble organizing time and prioritizing activities, communicating effectively with others, grasping verbal or nonverbal concepts, retrieving data quickly and precisely from long-term memory, recognizing and responding to recurring patterns or perceiving fine detail (Levine, 2003). There may be difficulty in generalizing a concept to other similar situations, or in understanding the social skills use, but not the *need* to perform the skill. The inability to generalize may result in out-of-step children and adolescents who experience difficulties not only in their school classes but in their entire environment of social interaction.

Social and Cognitive Theories

Constructivists believe new information is added to an existing mental schema, or the existing schema is changed to accommodate the new information in light of prior

information and skills. Piaget (1923) believed the individual could learn in social isolation through a process of discovery. Vygotsky shared many of Piaget's learning theories, but sharply differed on the social aspects of learning. Instead, Vygotsky (1978) claims that knowledge of the culture and past is transmitted through social interaction. The interaction allows the learner to exist in the zone of proximal development and results in the learner progressing to succeeding advanced stages as learning increases.

Social cognition theorists attempt to understand how the thoughts and feelings of individuals are influenced by the actual or imagined presence of others (Allport, 1985). Social cognition theory is used to study the individual in a social context and to focus on how he or she perceives and interprets information he or she generates or receives from others (Sternberg, 1988). Social interaction is an important factor in the learning theories of John Dewey (1897), Lev Vygotsky (1978), and Albert Bandura (1986). Dewey's theory states that "education proceeds by the participation of the individual in the social consciousness of the race, the school is primarily a social institution, and the social life of the child is the basis of concentration . . . in growth" (1897, pp. 77-80).

The major theme of Lev Vygotsky's theoretical framework is social interaction's fundamental role in the development of cognition. Vygotsky (1978) states that "every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level" (p. 57). The focus of learning, according to Vygotsky, is the process of mastering the signs and symbols of the culture through interaction with others. Thus language moves from the social to the individual. On the individual internal level, language leads the child to further cognitive development. Social

interaction with knowledgeable adults or peers also establishes shared meaning between them, resulting in learning. Effectively understanding and using language are critical in social interaction.

Albert Bandura (1986) built on Vygotsky's social learning theory, but coined the term "social cognitive theory" (p. xii) due to the actual or imagined presence of others' influence on the thoughts and feelings of the individual. Bandura (1977) believes most of human thought is linguistically based (p. 173) and learning occurs through the dynamic interaction between the individual's intellect, his or her behavior, and the environment: the triadic reciprocal interaction. The individual exists in the environment and is affected by it, but simultaneously the individual affects the environment. Because individuals with learning disabilities have difficulty in information processing, their deficit would potentially disrupt the triadic reciprocal interaction. This disturbance is manifest in learning problems, and also in a generally low level of social competency. Their lower social competency appears as an inability to interpret social cues, patterns, expectations, and general cause and effect of social actions.

The process of language development is critically important in learning and social interaction. The 3 components of Bandura's reciprocal interaction draw on language as a primary form of thought and communication. If the use or understanding of language is impaired, the impairment may affect the continuous, dynamic process of reciprocal interaction.

In Bandura's (1986) social cognitive theory, observing and modeling the behaviors, attitudes, and emotional reactions of others facilitates learning. Bandura theorizes that social learning results from the dynamic and continuous reciprocal

interaction between cognitive, behavioral, and environmental influences. Much of learning results from observation of models in the social setting. Social competence requires both experiential learning and emotional maturity (Crawford, 1996). Appropriate social behavior, as academic subjects, must be learned and can be taught (Osman, 1982).

The theories and philosophic positions presented previously relate to general populations of learners. The current concept of learning disability was non-existent in Dewey, Vygotsky and Bandura's era. However, their theories evoke a need to study and possibly develop new theory regarding the LD learners' triadic reciprocal interactions. In this investigation, it was theorized that information processing deficits in adolescents with learning disabilities impede the accurate triadic interaction necessary for developed social competency. A theoretical framework was developed for understanding social skills use among students with learning disabilities through the application of Bandura's reciprocal interaction model.

Definitions

1. Learning disability definition - Public Law 101-76 (Individuals with Disabilities Education Act, 1997). Specific learning disability is a disorder in 1 or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have problems that are primarily the result of visual, hearing, or motor disabilities, or mental retardation, emotional disturbance, or of environmental, cultural, or economic disadvantage.

2. Learning disability (National Joint Committee on Learning Disabilities definition, 1990) - In January 1981, the NJCLD developed a new definition of learning disabilities that was adopted by all member organizations except the Learning Disabilities Association of America. The 1981 definition read as follows: Learning disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. The disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance), or environmental influences (e.g., cultural differences, insufficient and or inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences (National Joint Committee on Learning Disabilities, 1990).

3. Specific learning disability - A disorder in 1 or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, speak, read, think, write, spell, or do mathematical calculations ("Individuals with Disabilities Education Act," 1975).

4. Nonverbal learning disability - A neurological disorder in which nonverbal information such as holistic processing, visual-spatial perception and reasoning, intuitive responding, and organization are impaired. Individuals with nonverbal learning disabilities lack many concepts and much of the understanding needed for commonplace interactions and learning (Rourke, 1995; Thompson, 1997).

5. Reciprocal interaction – In the social learning view of interaction, behavior, other personal factors, and environmental factors all operate as interlocking determinants of each other (Bandura, 1977).

Assumptions:

1. There is generally lower social competency in individuals with learning disabilities than in the average population.

2. Bandura's assumptions (1999) of the fundamental human capabilities of symbolizing, vicarious learning, forethought, self-regulatory, and self reflective capabilities are accepted.

The following capacities and capabilities are inherent in humans (1986).

a) Symbolizing capacity: "Through symbols people process and transform transient experiences into internal models that serve as guides for future action" (p. 18).

b) Forethought capability: "People anticipate the likely consequences of their prospective actions, they set goals for themselves, and they otherwise plan courses of action for cognized futures" (p. 19).

c) Vicarious capability: "The capacity to learn by observation enables people to acquire rules for generating and regulating behavioral patterns without having to form them gradually by tedious trial and error" (p. 10).

d) Self-Regulatory capability: "Much of their [people's] behavior is motivated and regulated by internal standards and self-evaluative reactions to their own actions" (p. 20).

f) Self-Reflective capability: “Reflective self-consciousness enables people to analyze their experiences and to think about their own thought processes” (p. 21).

Delimitations

A limitation to the study is the participants all attend the school in which the researcher teaches. Due to the non-experimental nature of the study, the results are non-generalizable to other populations. Replication of the study would be impossible due to the great variation between the participants with LD and their differing diagnoses.

The intent and purpose of this study was to examine adolescents with learning disabilities and their use of social skills when viewed through the application of Bandura’s reciprocal interaction components. The phenomenon was observed through a systematic assessment of the participants through individual interviews, surveys, analysis of students’ test scores, and observations of the participants in social situations in the cafeteria.

CHAPTER 2

RELATED LITERATURE

Albert Bandura's social cognitive theory (1986) provides the theoretical framework for this study. Bandura's (1986) research indicates that much of human thought is linguistically based, and a positive correlation exists between language acquisition and cognitive development. Learning occurs when cognitive processing and socialization work in harmony (Bandura, 1977, 1986, 1989). Within this reciprocity, a triad of forces operates together in social interaction. An individual's behavior, cognitive factors, and environmental factors mutually influence each other in a process Bandura (1986) terms "triadic reciprocal determinism" (p. 23).

Bandura has operationalized the triad of factors in reciprocal interaction: personal or cognitive, behavior, and environment. Personal or cognitive features encompass a person's intellect, physical characteristics, beliefs, attitudes, expectations, thoughts, goals, intentions, and emotions. Biological personal factors include sex, ethnicity, temperament, and genetic predisposition (Bandura, 1986). The triad's environment includes the physical surroundings, family and friends, and other social influences (Shaffer, 1996). The environment is not a fixed property that impinges upon individuals, but is generally inoperative until it is actualized by appropriate action (Bandura, 1986, p. 28). Unless some aspect of the environment is attended to, it does not exert an effect on the individual. What part of the potential environment becomes active depends upon a person's behavior. Implicit rules govern behavior, but the rules are

partly formed from feedback experiences (1977, p. 188). Behavior consists of motor responses, verbal responses, and social interactions, all factors that are observable. Behavior encompasses the movements and words of the individual, and how the individual physically relates to those around him or her. Once behavior patterns are well established, the patterns are generally enacted without much conscious deliberation (p. 171). Human behavior is partly determined by the environment (Bandura, 1989). The development and activation of the 3 interacting aspects are all strongly interdependent (Bandura, 1986, p. 24).

In the triad of interaction, humans are active information processors (Shaffer, 1996). A person's cognitive abilities influence both his behavior and his environment (Sternberg, 1988). Conversely, one's behavior and the environment influence his or her cognition. Bandura (1986) explained, "What people think, believe, and feel affects how they behave. The natural and extrinsic effects of their actions, in turn, partly determine their thought patterns and affection reactions" (p. 25). The strength of the reciprocity among the triad of factors can vary by person and situation. Learning disabilities, or disturbances in information processing, may disrupt the triadic reciprocal interaction. Disruption in the *reciprocal* interaction may influence the quality of *social* interaction of the person with learning disabilities.

Does the language processing disorder of children with learning disabilities contribute to their decreased social competency?

A large body of research indicates that social skills difficulties may predict serious adjustment problems later in life (Bergman, 1987; Briney & Satcher, 1996; Court & Givon, 2003; Dawson, 2002; Dieffenbach, 1991; Dumas, 1998; Elksnin & Elsknin, 2001; Fuchs, Fuchs, Mathes, & Martinez, 2002; Goldstein, 2003; Gresham & Elliott, 1987;

Gresham, Sugai, & Horner, 2001; Hayes, 1994; Jarvis & Justice, 1992; Koller & Goldberg, 2002; Lavoie, 1994; Levine, 1990; Lyon & Fletcher, 2001; McIntosh, 1989; Mellard & Hazel, 1992; Moisan, 1998; Morris, 2002; Morrison & Cosden, 1997; Noll, 1997; Peck, 1985; Rosenthal, 1992; Ross-Kidder, 1998; Rudolph & Luckner, 1991; San Miguel et al., 1996; Siegel, 1998; Steele, 1998; Sturomski, 1995; Tur-Kaspa & Bryan, 2002; Vacca, 2001; Vaughn, 1990; Vaughn & Haager, 1994; Vaughn & McIntosh, 1989; Vaughn, McIntosh, & Spencer-Rowe, 1991; Wheeler & Carlson, 1994; Woodward & Fergusson, 1999). Social interaction deficits are also a precursor for overall adjustment and functioning in society (Friedman, 1998; Gresham et al., 2001). The pervasive deficits in interpersonal relationships of many individuals with learning disabilities have been the focus of extensive research (Ames, 1997; Bigelow, Tessson, & Lewko, 1996; Briney & Satcher, 1996; Court & Givon, 2003; Fuchs et al., 2002; Gerber & Sisterhen, 1989; Getty, 2003; Kellner, Houghton, & Douglas, 2003; Tur-Kaspa & Bryan, 2002; Weltsch, 2004).

Successful interpersonal interaction is a life long need (Ames, 1997; Bandura, 1986; Bye & Lee, 1993; Court & Givon, 2003). Students with learning disabilities frequently manifest tremendous problems in social relations. A learning disability affects a student's academic performance, but also has consequences for the LD individual's adjustment to home, work, community, and adult life (Spekman, Goldberg, & Herman, 1992). Deficits in social skills are manifested early and persist throughout life without effective intervention (Mellard & Hazel, 1992). Students with learning disabilities suffer from a low peer acceptance rate (Elbaum & Vaughn, 1999; Elksnin & Elksnin, 1998; Fuchs et al., 2002; Getty, 2003; Vaughn & Haager, 1994; Vaughn & Hogan,

1994) and are perceived as deficient by their teachers (Baum, Duffelmeyer, & Geelan, 1988; Friedman, 1998).

Vaughn and Hogan (1994) conducted a longitudinal study of 239 students with learning disabilities and their social competence. Ten of the students were followed for 6 years from kindergarten through 5th grade, with repeated measures taken of peer acceptance, reciprocal friendship, self-concept, and social skills. Vaughn and Hogan found the social competence problems were not equally distributed across genders, but occurred predominantly with males.

Gresham and Reschly (1986) studied 100 students with LD and 100 students without LD. Teachers, parents, and peers rated all students using the Social Skill Rating System® instrument (SSRS) (Gresham & Elliott, 1990). The group of students with learning disabilities experienced problems in almost all social skills areas, which severely impacted the outcome of social interactions. Deficient social skills areas compared to the non-LD group included accepting authority, helping others, expressing feeling, and possessing a positive self-concept. Gresham and Elliot (1990) cited the difference in social skills functioning between normally achieving children and their peers with learning disabilities may be as large as 2 standard deviations. Some researchers have concluded that children with learning disabilities evoke an extremely negative response from their peer group (Gresham et al., 2001).

Gerber and Sisterhen (1989) studied older adolescents with and without learning disabilities to determine whether the 2 groups differed in social perception abilities. The categories of perceptual social abilities were auditory, visual, and multi-sensory or combinations of them. The 14-, 16-, and 18-year- old students with learning disabilities

proved to be less facile at perceiving and interpreting nonverbal social information than were adolescents without learning disabilities. Whether visual or multi-sensory, the type of nonverbal information did not make a difference in perception and interpretation.

Many children with learning disabilities are deficient in kinesics, proxemics, and vocalic (Lavoie, 1994). Kinesics, the inability to read body language of self or others, results in many unperceived or misperceived social cues. Proxemics, an inability to understand how physical space communicates with others, can result in invasion of another's personal space. Vocalic, an inability to understand how volume and voice pitches communicate to others, may result in speaking in a very loud voice or use of an aggressive or whining voice pitch when none is intended. Body language, personal boundaries, volume and tone of voice are verbal and nonverbal forms of communication that exert a powerful cumulative impact on social competency in social interactions (Hayes, 1994). Jarvis and Justice (1992) studied 90 students, half with learning disabilities and the other half of the students without learning disabilities, to focus on social sensitivity and self-concept. The students with learning disabilities at all grade levels were significantly less accurate at interpreting social situations than were their peers without learning disabilities. Additionally, the students with learning disabilities exhibited significantly lower self-concepts. The LD student's deficit in perceiving and correctly interpreting social situations results in negative social reactions, which may result in a lower self-concept.

Peck (1985) studied risk factors involved in the effect of learning disabilities on emotional health. He evaluated a 3 year period of Los Angeles, California records and found that 50% of the children who committed suicide in LA County during the time

period were identified as learning disabled. Serious secondary problems may be encountered by children with learning disabilities (Tryon, Soffer, & Winograd, 2001). Karacostas and Fisher (1993) studied substance abuse in students with learning disabilities and students without learning disabilities. A significantly higher proportion of LD students were classified as chemically dependent compared to non-LD students.

Hartas and Donahue (1997) studied conversational and social problem-solving skills in adolescents with learning disabilities. They analyzed audiotapes of simulated telephone hotline conversations of adolescent pairs composed of 1 LD adolescent and 1 non-LD adolescent, or 2 LD adolescents, or 2 non-LD adolescents. Adolescents with LD and without LD were equally competent in requesting advice. However, adolescents with LD exhibited significantly greater difficulty creating solutions to interpersonal problems. Problem solving is a strong component of social competency.

Most and Greenbank (2000) investigated the perception of emotions and social skills of 30 LD and 30 non-LD 8th graders who were 14 years of age. The 2 groups were asked to identify 6 different emotions, each presented in 2 modes: auditory, visual, and combined auditory and visual. The participants with learning disabilities scored significantly lower than did the group without learning disabilities in reading and interpreting emotion in all 3 modes.

Almost 90% of jobs lost are because of the lack of occupational social skills (Elksnin & Elsknin, 2001). Lack of social competency has a strong correlation to individuals with learning disabilities (Getty, 2003; Kellner et al., 2003; Tur-Kaspa & Bryan, 2002; Weltsch, 2004), which emphasizes the need for occupational social skills training for students with learning disabilities. Such training should relate to specific

occupations to prepare students with learning disabilities to become independent adults (Elksnin & Elsknin, 2001).

Despite prevailing federal law [20 United States Code (U.S.C.) Sec. 1412(a)(5)(A)], authentic inclusion of learning disabled students into the general classroom may be an illusion (McLeskey, Hoppey, Williamson, & Rentz, 2004). National and state trends toward children with learning disabilities in general education classrooms show that many children with learning disabilities are not full participants. Social skills play a crucial role in facilitating learning and participating fully in interactions (Elliott, Malecki, & Demaray, 2001). A myriad of challenges stem from social skills deficits that prevent full inclusion of learning disabled children.

Porlier, Saint-Laurent and Page (1999) compared the perceptions of 9th and 10th grade students with LD in regular and special secondary classrooms. The 227 students with LD perceived regular classrooms as better organized and more task-oriented than special classrooms. Students with LD in special classes were perceived as more socially competent by their teachers and were accepted more by their peers than students with LD in regular classes. True inclusion of students with LD is problematic in public schools because of a myriad of challenges in social skills use (McLeskey et. al., 2004).

Both general education and special education teachers view social skills primarily in academic terms (de la Cruz, 1995). Coleman and Lindsay (1992) define social skills as the cognitive functions and specific verbal and nonverbal behaviors than an individual engages in when interacting with others. McLeod and Kolb (1989) studied 50 LD and 50 non-LD high school students and 50 high school teachers to determine what

social skills were perceived as important. The teachers rated various social skills as important for success in the classroom. Students with and without learning disabilities perceived the same social skills as important for a mainstream class. McLeod and Kolb explained the similar perceptions of the 2 student groups when compared to teachers' perceptions. The student groups were comparable because they focused on common areas of disagreement between most students, whether learning disabled or not, and teachers. The students' perception of important social skills was more similar to each other than the teachers' perception of critical social skills was to either of the 2 student groups.

Forness and Kavale (1996) analyzed 152 studies linking children with learning disabilities and social competence. Social skills deficits occur in about 75% of students with learning disabilities, to the extent that the social skills deficits differentiate the students with LD from their non-LD peers. Teachers, peers, and students with learning disabilities themselves perceived students with learning disabilities to have lower social skills than non-LD peers.

How do students with learning disabilities perceive themselves as social beings?

An analysis was conducted of research studies since 1990 of the social competence of children with learning disabilities. Learning disabled students perceive themselves and other students with learning disabilities to have lower social skills than their non-LD peers (Forness & Kavalle, 1996; Nowicki, 2003). Children with learning disabilities frequently do not have accurate self-perceptions of their social competence. Morrison and Cosden (1997) found that the LD students' perspective of their disability had a major impact on their self-concept. A major factor in the adjustment to the learning disability was whether the students with LD perceived their learning disability

as all-encompassing compared to students with LD who perceived learning disabilities as a discrete facet of their personal image. Those students who perceived learning disabilities as their entire identity did not make as productive an adjustment to the condition as did those students who perceived their learning disability to be only 1 of the many components that comprised their personalities and identities. Allowing learning disabilities to dominate one's total persona is detrimental to adjustment, but moving to the other end of the continuum and denying the condition and need for any accommodations is also unfruitful. Students with learning disabilities who were in denial of having the disability or with little understanding of LD were more at risk, experiences less resilience, and diminished adjustment to life's inevitable stresses. Those students with learning disabilities who possessed less denial and a greater understanding of learning disabilities had more educational and vocational mentors, made vocational choices more aligned with their skills, were less at risk, more resilient, and experienced a higher level of adjustment than their peers with learning disabilities who denied their condition. Learning disabilities interact with risk factors and positive factors that may facilitate or hinder adjustment. Accepting and understanding the individual learning style is critical for an LD student's adjustment.

Busia (1994) conducted a 12 week program with 16 students with learning disabilities in 4th and 5th grade. The program addressed the social and emotional development needs of the students in adjusting to their learning disabilities. At the end of the program, the majority of the students was aware of their specific learning style's strengths and weaknesses and was able to use their knowledge productively in peer and teacher interactions. The understanding of their learning styles as individuals with

learning disabilities also had a positive effect on student self-esteem. The general public does not understand what constitutes a learning disability. For example, the Institutional Review Board returned this proposal for human subject research because there was no indication the research participants belonged to the category of "mentally impaired" in the provided documentation. LD is an invisible disability. Because of a myriad of symptoms, a fuzzy definition, and diversity within the normal intelligence population affected with learning disabilities, it is difficult for unknowledgeable people to grant accommodations that are freely granted those with specific and observable disabilities. Only 1 in 3 learning disabled college students can effectively communicate the specific nature of their own learning disabilities (Axelrod & Zvi, 1997). The recentness of the learning disability diagnosis, the student's age, and IQ proved to be unrelated to the accuracy of the student's communication ability. The researchers concluded it is critical for a person with learning disabilities to understand and be able to successfully communicate regarding the disability.

Schwean (1992) researched the advocacy skills of children with and without learning disabilities in making requests. Research participants consisted of 2 groups of adolescents and 1 group of preadolescents, with 18 participants in each group. 1 group was composed of adolescents with LD, 1 group was non LD adolescents, and 1 was non-LD preadolescents. The 3 groups' social behaviors were compared when requesting assistance from listeners. The listeners varied in their familiarity to the participant and the degree of power they held over the participant. In articulating their requests, the adolescents with learning disabilities exhibited a developmental delay, acting younger than appropriate for their chronological age. The adolescents with

learning disabilities demonstrated social awareness of social and contextual features such as the power and familiarity of the person to whom they were making the assistance request. The adolescents with learning disabilities experienced a 2 year lag in advocacy skills when compared to the adolescents without learning disabilities. However, the group with learning disabilities was able to modify their requests appropriately to the people to whom they were making the requests. Children with learning disabilities generally manifest developmental delay of several years in their social skills use (Ames & Pickering, 1993).

Perception is reality (Hoerr, 2005) to the perceiver. That perception, whether accurate or inaccurate, is the basis on which individuals form their self-concepts. Gross (1997) found that children with learning disabilities experience great difficulty in forming a positive concept of themselves as learners. All the early experiences, impressions and communications become aspects of the child's self-concept as a learner. Kloomok and Cosden (1994) studied 72 elementary children with learning disabilities. The researchers found that the LD children with a high self-concept, compared to those LD children with a relatively low self-concept, perceived themselves as more intelligent and more competent in non-academic areas. Many children with learning disabilities have very negative self concepts (Spekman et al., 1992).

Smith and Nagie (1995) studied 116 3rd and 4th grade children with learning disabilities. Fifty-nine of the children were diagnosed with LD and 57 were non-LD. The Self-Perception Profile for Learning Disabled Students (Renick & Harter, 1988), a neuropsychological test, was used for assessment of the children's self-perception. The children with learning disabilities perceived themselves as less competent in

intelligence, academics, behavior, and social acceptance than did the children without learning disabilities. Surprisingly, the LD students' self-perceptions were not affected by whether they compared themselves to the LD or non-LD group. That finding was not congruent with the teachers' perception of students with learning disabilities and the teachers' frame of reference in another study (Porlier et al., 1999).

How do teachers of students with learning disabilities perceive them as social beings?

Teacher response to a learning disability is important to an LD student's emotional regulation. In Clark's (1997) study, teachers were provided fictional stories of children with learning disabilities and rated them after hearing of the child's motivation and ability level. Teachers responded with anger to students with learning disabilities, high ability, and low motivation because it was the student's "choice" not to do well. If a student with learning disabilities had low ability and low motivation, teachers responded with pity because it was beyond the student's ability to do well on academic activities. When the low achieving students received the pity response, i.e., little or no punishment, the students attributed it to the teacher's perception that they were incapable of learning and beyond help. When low achieving students with learning disabilities received anger, i.e., punishment, they attributed it to the teacher's perception that they were capable and could improve academically. Because of the students' perception, students with low ability were reading "hopeless" in the well-intentioned teacher's response. Their perception affected students' self-esteem, sense of competence and already low motivation.

Forness and Kavale (1996) found teachers perceived students with LD to have lower social skills than their non-LD peers. A teacher's perception of students with learning disabilities depends on the teacher's frame of reference. Teachers rated

adolescent students with learning disabilities as a group, and then rated the same student with learning disabilities in a mixed group with non-LD peers included. The social competency ratings of the students with learning disabilities dropped in the second rating with non-LD peers (Porlier et al., 1999).

Getty (2003) reports the necessity of social support, social skills, and the educational setting in determining aspects of the learning disabled student's self-concept. The study involved 60 children with learning disabilities in 4th and 5th grades. Getty examined student-perceived teacher and classmate support, teacher and peer preferred social skills, the educational setting, the student's perception of his or her scholastic competence, and social acceptance. If the child perceived he or she had good social skills and social support, the child's self-concept increased. Getty's study underscores the importance of positive social processes within the classroom and how children with learning disabilities determine their self-perceptions from such processes. Children with learning disabilities experience disruptions in their information processing, which may greatly impact perception in reciprocal interaction.

Friedman (1998) utilized the Social Skills Rating System® instrument (SSRS) (J. Gresham & S. Elliott, AGS Publishing, Circle Pines, MN, www.agsnet.com) to compare teacher and LD student perceptions of the LD students' social skills. Students did not perceive their social skills in the same manner as their teachers. Children with learning disabilities exhibited more internalizing and externalizing problems than did students without learning disabilities. Students with learning disabilities were seen as less academically competent, and there existed a confounding of achievement and social skills functioning. Baum, Duffelmeyer, and Geelan (1988) studied 500 teachers and

found that 30% of the elementary and middle school teachers perceived their learning disabled students as needing social skills intervention, and 42% of the teachers in senior high perceived their students with LD needed the intervention. However, in the LD student's Individualized Education Plans, 25% of the plans did not designate a person responsible for implementing social skills remediation. Only a few of the 38% of the students with learning disabilities were receiving the needed intervention.

Fuchs, Fuchs, Mathes, and Martinez (2002) studied 156 children with learning disabilities in 36 6th grade classrooms and found that the students with learning disabilities were judged to hold a lower social standing in class than their did non-disabled peers. The study was concerned with social benefits in peer tutoring rather than academic benefits. The study determined that peer tutoring improved the social standing of the students with learning disabilities. Additional research was needed to determine the length of time for the improved status, whether the status improved because of modeling (Bandura, 1986), or because familiarity between the students with and without learning disabilities increased acceptance. Saborine (1994) studied 38 students with LD and 36 non-LD students. The groups were studied in terms of social-affective characteristics such as participation, integration, isolation, and victimization. Teachers rated the students with learning disabilities as significantly lower in social competency. Most and Greenback (2000), in a study of 30 8th graders with learning disabilities and 30 non-LD 8th graders, found teachers' perceptions of LD individuals' social skills to be lower than their perceptions for matched non-LD individuals. Parents' and children's ratings of the child's social skills agreed more on children's social skills than did the teachers' rating and the children's rating. The acuity in parental rating

when compared to teacher rating may be because parents have a more comprehensive view of their children than the teacher's view, which is typically restricted to a school environment.

Robinson and Hawthorne-Said (2002) studied 221 children with learning disabilities to determine their self-concepts. There were 221 children ages 8 to 13 categorized into LD, low, average and high achievers. Their classification was based on reading age scores from the Waddington Diagnostic Reading Test™ instrument (Waddington, 2000). The students with learning disabilities were 2 years behind their age in reading achievement, the low achievers were a year behind, the average were achieving at their chronological age, and the high achievers were reading at least a year ahead. The Stanley Coopersmith Self-Esteem Inventory™ instrument (Coopersmith, 1978) was used to assess the students' self-esteem. Boys rated themselves higher than girls, with girls rating themselves lowest in global self concept. Teachers rated students with learning disabilities lower than all other groups. However, teacher perception of the LD girls' self-concept was higher than for the boys.

Stone (1997) studied a group of 26 adolescents with learning disabilities in grades 9 through 12. The students, their parents, and teachers rated the LD students' skills in 21 specific areas. The parents' ratings were similar to the teachers in 16 areas (76%) and significantly lower than the teachers' perceptions in 5 areas. The students' self-ratings were generally higher than the ratings of their teachers and parents. The differences between student and teachers in perception were significant in 6 areas (28.5%), with the teachers' ratings lower than the students' rating. The differences between students' and parents' ratings were significant in 11 areas. Although the

parents gave lower ratings of the children's social skills than did the children in absolute terms, the parents' ratings were parallel to their children's ratings (r = .80).

In a synthesis of 32 studies of social competence of children with learning disabilities, Nowicki (2003) found teachers' perceived children with learning disabilities and low achieving peers to be more at risk for low social competence than were their average and high achieving peers. Research has abundantly documented social problems as a phenomenon that often occurs with learning disabilities (Baum et al., 1988).

How do parents perceive their children with learning disabilities as social beings?

Gresham and Reschly (1986) conducted a study of the perception of teachers, parents, and peers of students with learning disabilities. The perception of all 3 groups perceived the social skills of the learning disabled students to be lower than non-LD students of the same grade. When a child has learning disabilities, a lowering of expectations by both parents and teachers frequently occurs. Low expectations may focus in the realm of academics, but include a wider arena of diminished potential and opportunities. Teachers, particularly in science and math, may waive requirements for their students with learning disabilities. Although lowering expectations and waiving requirements are both seemingly realistic and adaptive accommodations, the end result may be to deny a standard of excellence necessary for reaching the LD student's potential (Cunningham & Noble, 1998). Ross-Kidder (2002) found low expectations for achievement to be the greatest parental perception of their child with learning disabilities, followed by sadness, and the opinion that their child was always in trouble.

Latson (1995) found that parents of children with learning disabilities had very elevated scores on the Parenting Stress Index™ instrument (PSI) (Psychological

Assessment Resources, Inc., Lutz, FL, www.parinc.com). The PSI, a 101 item index, comes in a short form of 36 items derived from the PSE which consists of 3 scales: Parental Distress, Difficult Child Characteristics, and Dysfunctional Parent-Child Interaction. Latson used the Parental Distress component of PSI, produced by Psychological Assessment Resources. The PSI scores obtained by Latson indicated the parents perceived far more stress in their role as parents of children with learning disabilities than did parents of children without learning disabilities**.** A constellation of concerns and frustrations were cited for the elevated stress level of parents of children with learning disabilities.

Konstantareas and Homatidis (1989) studied parents of learning disabled children and the stress they experienced as the result of various problems. Both mothers and fathers rated externalizing behaviors, such as missing social cues, as causing more stress than the internalizing behaviors, such as their LD child's lowered self-concept. Parents rated sons with learning disabilities as significantly more problematic and stressful when compared to daughters with learning disabilities. Younger parents reported more stress than comparatively older parents reported. Fathers with lower self-concepts reported greater stress than fathers with higher self-concepts. Mothers and fathers reported the same behavior rating of their child with learning disabilities, but mothers reported greater stress in response to the behaviors. Mothers of middle or upper socioeconomic status who had an external locus of control reported the greatest stress in response to their LD child's behaviors. High academic achievement is generally emphasized in middle and upper class families, and high academic achievement is difficult for a child with learning disabilities to attain.

Extensive research exists on what teachers perceive as essential social skills for students with learning disabilities, and studies revealed teachers focus primarily on skills for classroom success (de la Cruz, 1995). Kolb and Hanley-Maxwell (2003) studied parents' perspectives on what social skills the parents believed were critical for their children with learning disabilities to possess. In a qualitative study, the researchers used a purposeful convenience sample of 11 families of children with learning disabilities and other high incidence disabilities. Parents provided a different perspective, citing interpersonal and intrapersonal skills and moral development as the most critical social skills. Kolb and Hanley-Maxwell believe the parental perspective should be incorporated into social skills interventions, rather than only the perspective of educators who design and create the curricula.

What is the strength of the relationship between cognitive ability and social competence?

A large difference between IQ and achievement forms the basis of the discrepancy definition of learning disability. This study seeks to determine the extent to which intelligence relates to social competence in a population of middle school students with learning disabilities. In addition to traditional IQ tests, there exist theories and tests for emotional intelligence (EI). EI encompasses understanding of emotions, empathy for others, and decoding of social cues. Emotional intelligence may also be called social cognition. Gresham and Elliott (1983), creators of the respected Social Skills Rating System evaluation instrument, also believe that social skills information should be used in deciding whether or not to mainstream a child. Gresham writes that social skills assessment may be more important in educational placement than IQ or achievement level of the child.

Sternberg (1988) posits that intelligence is the cognitive ability to learn from experience. In *The Triarchic Mind*, Sternberg cites the higher cognitive functions as conceptualization, symbolization, generalization, and abstraction. These functions are also critical components of social competency. Low cognitive ability in an individual could preclude these higher cognitive functions, making social competence unlikely.

Reiff and Gerber (1990) studied 32 elementary students with learning disabilities to determine the correlation between cognitive ability and social perception. The study involved 32 students ranging from 9 to nearly 13 years of age. The 22 boys and 10 girls were in grades 4 and 5. The children all received special services for learning disabilities from 1 to 3 years, with a mean of 2 years. The Wechsler Intelligence Scale for Children® instrument (WISC - III) (Harcourt Assessment, Inc., San Antonio, TX, www.PsychCorp.com) was used to evaluate cognitive ability, specifically the picture arrangement and comprehension components. The Profile of Nonverbal Sensitivity (PONS) was used to assess the ability to understand nonverbal communication (Rosenthal, 1979). Using the WISC and the PONS, Reiff and Gerber found a significant correlation between cognitive ability and social skills. The picture arrangement and comprehension components of the WISC require analytic skills to sequence pictures successfully by inferring a whole event from various parts. Focusing on irrelevant details and missing the central meaning is a trait associated with learning disabilities that decreases chances of successful social interaction (Gerber & Harris, 1983). These same qualities of omitting the main concept can lower scores on the picture arrangement and comprehension portions of the WISC and cause problems with decoding nonverbal communication on the PONS. A social setting requires attending to

and interpreting relevant cues, which are the same skills necessary for many cognitive tasks.

Piscitelli (2000) studied 99 children and found in teacher ratings that cognitive ability, determined by the Wechsler Intelligence Scale for Children (Wechsler, 1992), was positively correlated to both language development and social skills. The social skills use was assessed by the Social Skills Rating System (Gresham & Elliott, 1990). Parental ratings revealed that the severity of disabilities had a significant effect on social competence.

Pellegrini (1985) studied 100 children in 4th to 7th grade. Forty-six participants were boys and 54 were girls. He rated their social skills in terms of interpersonal understanding and problem-solving ability and next related social skills to IQ. The Wechsler Intelligence Scale for Children (WISC - III) determined the participants' intelligence. Pellegrini theorized that problem-solving is the ability to plan and coordinate a series of steps to reach a specific goal. Effective problem-solving takes into consideration potential obstacles and alternate plans to reach the goal within a certain time frame. Problem-solving skills and strategies are also necessary to apply in problematic social situations. Thus the same skills that are needed for higher cognitive functions are also needed in complex social interaction. Pellegrini's results indicated that both social skills components, interpersonal understanding and problem-solving ability, were significantly correlated with IQ. His study also revealed some students with high IQs held a very immature understanding of the social world. This phenomenon was also reflected in other studies (Reis & Colbert, 2004). The scenario of relatively high intelligence, but low social intelligence parallels the descriptions of students with

nonverbal learning disabilities. Those students typically do not make connections, isolate major concepts, or perceive and accurately decode social cues.

Stone (1981) conducted research attempting to understand the "reasoning disorder" of learning disabled adolescents. Out of 36 adolescents with learning disabilities and a large discrepancy between verbal and nonverbal abilities, 28% (8) did not utilize a strategy when presented with situations where a problem-solving strategy was needed. However, out of 20 adolescents with LD whose learning disability was limited to reading and written language, 85% of the students (17) spontaneously generated a strategy to use in the problem-solving scenario. Stone's early research pointed to the 2 major categories of learning disabilities: verbal (VLD) and nonverbal (NLD). Individuals with nonverbal learning disabilities have lower social skills, possibly resulting from their inability to generate problem-solving strategies and decode nonverbal communication in social interaction (McLeskey et al., 2004; Meadan & Halle, 2004; Rourke, 1989).

Oliva and La Greca (1987) studied the goals and strategies of 30 boys with learning disabilities and a comparison group of 30 boys without learning disabilities at 2 age levels, 8 and 9, and 11 and 12 years of age. The subjects were videotaped in 4 situations with peer interactions and later interviewed regarding their goals and strategies in the interactions. The boys with learning disabilities in both age levels produced significantly less sophisticated goals and less friendly strategies than did their non-LD peers. The LD participants' quality of formulated goals was strongly correlated with their degree of social competency. The goals spontaneously developed by the group with learning disabilities were similar to the goals of younger children. Oliva and

La Greca suggested there possibly existed in the LD group a deficit in cognitive skills necessary to formulate general social skills used in interpersonal interactions. That possibility would strengthen the premise that a disruption in Bandura's reciprocal interaction (1986) could result in lower social competency of children with learning disabilities.

Nowicki (2003) conducted a meta-analysis of research studies since 1990 of social competence of children with learning disabilities compared to non-learning disabled peers. Of the 1,628 studies, 32 were selected as meeting the requirements of Nowicki's study. In the perception of their teachers, children with learning disabilities and children with low academic achievement are at greater risk for social difficulties than are there average and high achieving peers. Nowicki also found that children with learning disabilities and their low achieving peers did not have accurate self-perceptions of their social competence.

What is the strength of the relationship between the student's type of learning disability and his or her type of social incompetence?

Social skills deficits do not have to lead the student with learning disabilities into a cycle of social failure and rejection. Appropriate social behavior, as with academic subjects, must be learned and can be taught and performed (Gresham & Elliot, 2005; Lewis, Heflin, & DiGangi, 1991; Osman, 1982). There are many social skills curricula, but most interventions meet with limited long range success (Forness & Kavalle, 1996). Great diversity exists among learning disabled children. There are several methods to classify their differences within the disability, with the largest categorization verbal learning disabilities and nonverbal learning disabilities. Briefly, verbal LD involves difficulties with receptive and expressive language, reading, and written communication.

Nonverbal LD encompasses a globally low ability despite normal intelligence. A person with NLD experiences great difficulty in making connections, perceiving patterns, and understanding nonverbal communication (Dimitrovsky, Spector, Levy-Shiff, & Vakil, 1998; Foss, 1991a; Rourke, 1989). Axelrod (1982) studied nonverbal social understanding in adolescents with learning disabilities in grades 8 and 9, comparing them to adolescents without learning disabilities. The Profile of Nonverbal Sensitivity (Rosenthal, 1979) assesses the ability of the individual to decode nonverbal communication. Axelrod found the 54 adolescents with LD had significantly lower social perception skills than did the control group of 93 adolescents without LD. Statistical analysis showed the difference between LD and non-LD groups to be significant at the 0.001 level for all measures.

The least socially competent students with learning disabilities generally are those individuals in the nonverbal learning disability (NLD) category (Dimitrovsky et al., 1998; Foss, 1991; Rourke, 1989; Swanson, 1996; Telzrow & Bonar, 2002). McDonald (2003) found a trend toward lower social skills in children with nonverbal learning disabilities when compared to the control (VLD) children. McDonald found that children with NLD perceived musical tones differently from children with VLD, which perhaps explains the difficulty NLD children have with vocalic, the perception of voice volume and tone in themselves and in others (Lavoie, 1994). Not understanding the effect of voice volume and tone can result in negative reactions from others and a lower quality of social interactions.

Nonverbal language is a secret code that is written nowhere yet understood by everyone (Siegel, 1998). Breaking a nonverbal rule exerts a negative emotional impact

on the other person in the social interaction. Siegel cites the importance of nonverbal language. Frequently these social cues are outside the perception of the individual with learning disabilities. Persons with nonverbal LD do not perceive they have a social processing deficit, and because of their lack of understanding, do not discontinue the inappropriate behavior (Siegel, 1998). Similarly to Lavoie (1994), Siegel categorizes social cues, but groups the areas somewhat differently. Siegel's social cues are the rate of walking, talking or eating, personal space of roughly 18 inches, touching, interpreting facial affect, and body language. The earlier the social skills intervention occurs in the life of the child with learning disabilities, the better (Siegel, 1998). Non-verbal language must be known before the child is 10 years old, or mistakes make other people uncomfortable, diminishing the quality of social interaction (1998). Most individuals with NLD do not learn "the code" without intervention, and some never learn it.

A persistent theme in learning disabilities is the high degree of intra-individual diversity. Using a disparity learning disability definition of a large difference between ability and achievement, gifted students can also experience learning disabilities. Such gifted students have tremendous potential, which may never be realized because of their generally low social competency. Their information processing deficits occur both in academic situations and in social interaction. A program in Maryland enables educators to provide social skills support to those students who are not succeeding in the classroom, despite their high intellectual ability (Shevitz, Weinfeld, Jeweler, & Bames-Robinson, 2003).

To learn the origin of the low social competency of children with learning disabilities, Dimitrovsky, Spector, Levy-Shiff and Vakil (1998) studied children ages 9 through 12 with learning disabilities. The children with learning disabilities were divided into 3 groups: verbal learning disabled (VLD) only, nonverbal learning disabled (NLD) only, and a combination of the first 2 groups (VLD and NLD). A control group of children without learning disabilities was used. The object of the study was to assess the ability of the children with learning disabilities to identify facial expressions of affect: happiness, sadness, anger, surprise, fear, and disgust. The control non-LD group was better able to interpret facial expressions of affect than the 3 groups with learning disabilities. Within the 3 groups of children with learning disabilities, the group with verbal LD exhibited a better interpretive ability than did the nonverbal LD and the combination verbal and nonverbal LD groups. Happiness was the easiest affect to interpret, with the remaining emotions in ascending order of difficulty: anger, surprise, sadness, fear, and disgust. None of the groups with learning disabilities perceived "disgust" and the groups with NLD perceived the disgust affect least of all the LD groupings. An inability to assess facial expressions of affect supports the premise that children with nonverbal learning disabilities have the greatest difficulty in social skills when compared to children with verbal learning disabilities (Dimitrovsky et al., 1998; Foss, 1991; Hartas & Donahue, 1997; Rourke, 1989; Schwean, 1992). Dieffenbach (1991), in a related study of facial affect decoding abilities and social competency of students with learning disabilities, found that students with LD frequently misperceive social interactions and inaccurately decode nonverbal expressions of emotion. Both of these skills are critical for successful social interaction. Nonverbal learning disabilities

have superficial similarities to the autism spectrum of disabilities, but are intrinsically different from them (Rourke, 2000).

Dimitrovsky (2000) studied the effect of gender on recognizing facial expression of affect in children with and without learning disabilities. They studied 48 children without LD and 76 children with LD, all aged 9 through 12 years. The children with LD were categorized (Dimitrovsky et al., 1998) as VLD, NLD, and both verbal and nonverbal (VLD and NLD) combined. All the children were more accurate in identifying expressions from female faces. With affect expressions that were difficult to "read," female faces were more expressive. Since much communication is nonverbal, reading the affect of another is important. A lowered ability to interpret facial expressions of affect disrupts the dynamic, interlocking reciprocal determination that Bandura posits (1986).

Social Skills Interventions

Interventions to improve social skills are generally unsuccessful (Nowicki, 2003). In a meta-analysis of 53 social skills interventions, Fortness and Kavale (1996) found the outcomes from the interventions had a mean effect size of only 0.21. The researchers questioned why the social skills treatments had such a relatively poor outcome. The key to helping students with learning disabilities is identification and intervention when the students are very young (Lavoie, 1994; Lyon & Fletcher, 2001). The intervention should occur before the students' self-concept is damaged and they fall far behind in academic areas. Bandura (1986) stated, "Once established, reputations do not easily change" (Bandura, 1986, p. 417). Academic interventions were much more successful than social skills interventions. Swanson and Hoskyn (1998) found an overall effect of 0.79 in academic interventions. The relative ineffectiveness of social

skills interventions compared to academic interventions may reflect a lack of knowledge about the factors associated with low social skills (Nowicki, 2003).

Bye and Lee (1993) proposed a social skills model that uses the environment, physical factors, and information processing in the acquisition and use of social knowledge. Bye and Lee's model also addresses the role of social knowledge and motivation in social performance. Elksnin and Elksnin (1995) believe the cultural context must be assessed in a social skills intervention program. Also, there may be a difference in what a child with learning disabilities values as a specific social skill and what an adult values (Kolb & Hanley-Maxwell, 2003; Most & Greenbank, 2000). Motivation will be low if the child sees no value in what is taught.

The developmental level of the child should be considered in a social skills intervention. An inclusive educational setting and social skills training seem helpful, according to Moisan (1998), who found, not surprisingly, no *single* cause for social skills deficits in students with learning disabilities. Rudolph and Luckner (1991) developed a social skills intervention for students with learning disabilities to use on the community college level. Elbaum and Vaughn (1999) found that school-based interventions of relatively limited and short duration could have a positive impact on an LD student's self-esteem. Intervention efforts were most significant with middle school children.

Weltsch (2004) reported that children sanction their peers for interacting with rejected children. Weltsch studied 77 students in the 7^{th} and 8^{th} grade, and used 7 vignettes depicting 2 same-sex peers interacting in a way that implied friendship. Weltsch determined the students' social status using peer nominations and peer ratings. He found that peer groups strongly resist increases in the social acceptance of rejected

adolescents and that high status adolescents face disapproval and loss of status for interacting with rejected peers. Weltsch's finding that the status of rejected children was difficult to alter suggests another reason for early utilization of a social skills intervention for children with learning disabilities.

Interventions are varied, but many possible approaches exist. Most social skills curricula use only 1 method of intervention, such as problem-solving techniques, affective regulation, cognitive restructure, behavior modification, or social skills training. Each intervention is based on different assumptions about best practice and about learners (Joseph & Efron, 2005). Other interventions are predicated on the premise that social skills deficits are errors in learning. Therefore, appropriate social skills should be taught directly and actively (Lewis et al., 1991). Formerly, a learning disabled student's Individual Education Plan (IEP) would have 4 core goals to developing social competence. The IEP goals included cooperation, organization, responsibility, and empathy with specific ways to meet goals (Pry & Fletcher-Janzen, 2002). Some of those goals such as managing materials, managing time, predicting consequences of behavior, and identifying perspectives of others remain lifelong challenges for people with learning disabilities.

The Choices: A Comprehensive Social Skills Curriculum (Ames & Pickering, 1993) involves elements of all the interventions in a structured, multi-sensory program that is based on *The Comprehensive Social Values Curriculum*, developed by Shedd (1971). The Choices curriculum is designed to be taught 30 minutes daily through the academic year. The curriculum is divided into 6 areas: communication, attitude, problem solving, community awareness and responsibility, self-discipline and self-

control, and specific social skills. Each of the 6 areas is subdivided into 30 lessons, which can be adapted to the child's developmental age. In a spiral fashion, each lesson builds on the previous year's lessons each succeeding year it is taught. At the school used in this investigation, Choices is taught from 1s though 8th grade (Ames & Pickering, 1993). Choices ends after the 8th grade, but a separate 4 year ethics curriculum is initiated in high school.

The social skills deficits emphasized in Choices parallel those skills deemed necessary for adult success (Hayes, 1994). The social skills deficits include verbal and motor impulsivity, poor visual perception of facial and body language cues, poor auditory perception of vocal cues, invasions of other's personal space, inappropriate touching, untidiness, and disorganization.

Choices (Ames & Pickering, 1993) entails a structured, reoccurring format which features similar, but increasingly complex activities throughout all the various grade level curricula. There are 10 activities, each with a designated purpose. Choices focuses on direct instruction because many students with learning differences, as noted in the review of NLD characteristics, find it very difficult to understand inferences, conclusions, figurative language, metaphors, and subtleties (Rourke, 1989; 1995). Choices curricula activities include presentation and introduction of the concept, discussion, and a story with selected vocabulary that exemplifies the concept. Cause and effect charts constitute an important curriculum component that focuses on the problem, what generated the problem, and the effect resulting from the action. Multi-sensory role-play is used to rehearse the implementation of the values and models a behavior for observational, vicarious learning. A critique of the role-play focuses

students on the main message of the activity, clarifies the message, and checks for students' understanding. The next activities in the Choices curriculum progression consist of different exercises that apply the selected concept to everyday life. For example, a fictitious scenario provides a need to determine a suitable action, or solutions of varying degrees of appropriateness are posited to resolve a social dilemma, and the student must follow a cause and effect sequence to choose the best solution. Supplementary references and additional exercises to utilize in teaching the concept appear at the end of each focus area.

The Choices curriculum teaches a cognitive-behavioral strategy to problem-solving skills. The strategy utilizes the sequence of identifying the **p**roblem, considering the possible **a**ction, thinking about the **c**onsequences, and **t**aking action. The cognitive-behavioral strategy uses the acronym PACT as a memory aid. The method is similar to an intervention designed by Smith, Seigel, O'Connor and Thomas (1994) in providing students the tools to control their own behaviors. Smith's instruction involves the sequential strategy of "stop and think," identify the problem, develop alternative solutions, evaluate the consequences, and implement a solution. In Smith's study, the students were divided into 2 groups. One group received the cognitive-behavioral intervention technique (CBI) and the other group did not receive it. The group that received CBI demonstrated more self-control than did the control group of students. The technique, nearly identical to Choices' use of PACT, helps students control underlying thoughts that affect overt behavior in building a new coping template to utilize in decision making.

Tur-Kaspa and Bryan (1995) studied 13 teachers' ratings of 30 low achieving students with learning disabilities who had lower social competence and school adjustment than did their achieving peers. In junior high, teachers' ratings did not find a difference in social competence between students with learning disabilities and regular students. Their findings suggest the social competency elements were similar for all students, whether LD or non-LD. The researchers advocate teacher rankings be used to screen students at high risk of a possible learning disability diagnosis in elementary school. A later study (Tur-Kaspa & Bryan, 2002) of 201 adolescents compared the LD and non-LD students' teacher rankings. Tur-Kaspa and Bryan found the students with LD received more social peer rejection, were judged by their teachers to exhibit lower social competency, and experienced higher behavior problems than did their non-LD peers. Both studies show the importance of early social skills intervention. The Choices curriculum starts social skills intervention at the earliest level of instruction, a practice supported by Tur-Kaspa and Bryan's findings.

The Choices curriculum is followed in the school where the study was conducted. Choices curriculum in grades 6, 7, and 8 teaches the same values as earlier grades, but employs a slightly different method of instruction than in grades k - 5. In lower school, grades 1 through 5, the entire curriculum is taught by the same teacher to the same class throughout the academic year. In middle school, grades 6 – 8, a teacher instructs only 1 of the 6 concepts, but all the students rotate through each class. Each concept is taught by a specific teacher for the entire grade level. In this manner, both fidelity of curriculum and instruction are maintained (Suzanne Stell, personal communication, February 22, 2005). Researchers of learning disabilities state that an effective

intervention should be developmentally oriented to information processing and emotional abilities needed for peer interaction. The intervention should also use learning disabilities subtypes in the LD population such as verbal and nonverbal LD (Bauminger, Edelsztein, & Morash, 2005). This research examined the relationship between learning disability subtypes and specific social skills deficits.

This study substantiated earlier research involving social competency and adolescents with learning disabilities. The study explored how this particular population perceives themselves as social beings, and how they are perceived by their teachers and parents. An investigation was conducted to determine which data source is the best predictor to assess a student's social skills use. The relationship between the type of social skills misuse and the type of learning disability also was explored. Bandura's triad of reciprocal interaction has been applied to general populations. This study offers a new application of Bandura's triad as it was used with a special population.

CHAPTER 3

METHOD

Selection of Participants

This study involved an examination of the relationship between middle school adolescents with learning disabilities and the subtype of learning disability as it affected their social skills use. Participants were selected from a school for students with learning disabilities with an established testing and evaluation center. Prior to enrollment, students were given a battery of tests and were evaluated to determine the existence of a learning disability. The school used a highly structured social skills curriculum, Choices (Ames & Pickering, 1993), which was taught for 30 minutes daily from early childhood through 6th grade throughout the academic year. In 7th grade the curriculum evolved into types of social dilemmas students may encounter and the curriculum becomes less structured.

Students entering the 7th grade were selected for the study because of the high degree of instructional fidelity in the earlier Choices curriculum, grades k - 6 (Suzanne Stell, personal communication, March 21, 2005). Only those students who were exposed to the Choices curriculum for 2 or more years were considered potential participants. Because of the Choices exposure, all participants experienced a common background of the identical social skills intervention. Seventh graders were chosen

because they had the most Choices exposure before the curriculum is fragmented and altered in various ways in 7th and 8th grades.

The study involved questions of cognitive ability, so only those 7th grade students who were evaluated by the Wechsler Intelligence Scale for Children® instrument (WISC - III) (Harcourt Assessment, Inc., San Antonio, TX, www.PsychCorp.com) or the Slosson Intelligence Test® instrument (SIT) (Slosson Educational Publications, Inc., East Aurora, NY, www.slosson.com) were included as potential participants. The conditions of attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD) frequently exist concurrently with learning disabilities (Friedman, 1998; Wheeler & Carlson, 1994). ADD and ADHD are not included in the current federal definition of learning disabilities. Both conditions markedly affect the behavior and environment not only of the individual with LD, but also that of others exposed to the attention deficit. The ADD or ADHD condition would confound the data on the learning disability and the social skills. For that reason, 7th grade students with LD who were exposed to Choices for at least 2 years and had their cognitive abilities evaluated by the WISC or the SIT were deleted from the study if their primary diagnosis was ADD or ADHD. The students were retained in the potential pool of participants if ADD or ADHD was their *secondary* diagnosis.

There were 78 incoming 7th graders in the selected school for the academic year 2005-2006. One student was removed from the potential pool because he did not have the WISC or the SIT in his evaluation records. Seven students were deleted because they had not been enrolled at the school for at least 2 years and so were not exposed to the Choices social skills curriculum for at least that same time period. Fifteen students

were released from the potential participant pool because ADD or ADHD was their primary diagnosis. The remaining 55 students' parents were mailed the IRB approved parental consent forms to participate in this study. Consequently, the actual participant pool was unknown, but approximately 50 students could potentially have served as study participants.

Student profiles were developed on each participating student using multiple data from testing, demographics, and school designated classifications of learning disabilities. The testing and evaluation records of the 7th grade participants provided an IQ test of either the Wechsler Intelligence Scale for Children (WISC) or the Slosson Intelligence Test (SIT). The evaluation center identifies 6 patterns of deficits in information processing: 1) reading disabilities, 2) auditory processing disabilities, 3) receptive/expressive language disability, 4) dyscalculia, 5) learning disability not otherwise specified, and 6) nonverbal learning disability. In addition, grade point average, gender, age, number of extracurricular activities, self-report on social competency, diagnosis of subtype of learning disability, and presence or absence of ADD/ADHD in secondary diagnosis provided the basis of each student's data profile.

Data Collection

All data were collected between August and November 2005. Each student, parent, and teacher who volunteered to be a study participant completed their specific form of the Social Skills Rating System (Gresham, 1990; 2005). The student form of the instrument was administered in the first 2 weeks of September. Each question was read aloud and provided time for the students' responses. Students were visited in their classrooms where the questionnaire took approximately 15 minutes to complete. The instrument was administered to small groups of student participants. Parents, who

provided their consent for their children to be study participants, were mailed the parent form of the instrument and provided a stamped enveloped in which to return the Social Skills Rating System after completion. Twenty-six parents participated in the study, with 1 father and 25 mothers completing the parent form of the SSRS. There was 1 SSRS parent form for each student participant. Teachers who consented to be study participants were hand delivered the teacher form of the instrument, and returned it through inter-office mail. Ten different 7th grade teachers completed the teacher form of the SSRS because 1 or more student participants were in their advisory. Advisory teachers also taught reading, mathematics, history, social studies, and science to the 7th grade students.

Four times during the period from mid-August through the end of November 2005 the student participant was observed during lunch in the school cafeteria. The observation was for a 10 minute time interval on 4 different occasions with a 3 week interval between each observation. A checklist of categories was used in Choices, and a category for social skills misuse to use in the timed observations of the student. The observations were recorded at 30 second intervals. Each observed category was specified as to the particular component of Bandura's triad of reciprocal interaction it represented. There was no videotaping in the study.

The checklist for observation of social behaviors was constructed from topics in the Choices curriculum. Discussion of these specific social errors was included in the curriculum, along with the correct response in various social interactions. Reasons for avoiding the social errors were provided and possible outcomes predicted in cause and effect charts for different social interaction dilemmas. The behavior inventory was

composed of behaviors exemplifying social skills errors (see Appendix A for Observation Checklist). The Choices curriculum focused on avoiding social skills errors and provided reasons positive social skills were desired. The acquisition and performance of selected social skills constituted the subject of extensive classroom discussion, role-playing, and modeling. The themes in the social skills curriculum determined the grouping on the observation inventory. The predetermined categories were delegated to the triad of Bandura's reciprocal interaction they most represented. The Choices categories of attitude and problem solving involved errors that conveyed emotional state or lack of efficient and effective cognitive processes. The errors relegated to the environmental determinant indicated a deficit in attending to environmental stimuli that contain social cues or patterns. Errors in the behavior triad involved inappropriate observable motor responses. These behaviors would be inappropriate anywhere, not just in a specific environment. Choices is composed of 6 categories of behaviors. Using the observation inventory, Bandura's triad was related to the most closely associated behaviors within the Choices curriculum category.

Maintaining the integrity of the social interactions would not be possible if the observer stood close enough to the participants to easily hear the volume, clarity, cadence, inflections, voice tone, or even words of their conversations. The observation was conducted only of visual behaviors for that reason.

Observations

Instrumentation

To obtain an indication of the types and frequencies of social errors for each participant, a series of observations of each participant formed a component of the research design for this study. A behavior inventory was compiled in accordance with

social skills use in the Choices curriculum. The observations were conducted to record social skills errors by the participants during a specific time interval. The social skills errors in the behavior inventory were operationalized by explaining how they would be exemplified and identified by an observer (see Appendix A for Definitions of Specific Behaviors in Observation Inventory). Prior to conducting the observations in the field, validity and reliability of the observation checklist were determined. To establish reliability, students were videotaped in a social setting while voluntarily interacting with peers and teachers. All of the observations were conducted in the school cafeteria during lunch. Volunteer observers independently viewed the 13 minute film. The filming of students mirrored the setting from which observations were collected during the study.

The teacher volunteers were trained to recognize the social errors cited on the checklist and to measure 30 second time intervals for observations. Each observer was given a watch with a second hand to time the observation intervals and was instructed to watch the film of the social interaction on a laptop computer. All 3 observers followed the identical observation routine when separately conducting their observations. The observation materials were collected and analyzed (see Appendix A for Inter-rater Reliability Data of Observation Instrument).

A structured, taped interview provided data from each student on the student's perception of his or her social skills, how the student believed his or her parents and teachers perceived the student's social skills use, how the student determined what social skills to use, whether the student believed social skills use influenced others' response to him or her, how the student learned new social skills, and an example of

the student's social skills misuse. All the participant's parents consented to the interview and the tape recording, which occurred in a private location in the school. The interview began with a broad, open ended question. The interviewer used a written protocol to guide the participant into talking about topics pertinent to the research questions. The interview lasted for 15 to 20 minutes. To insure greater completeness and accuracy in data collection, field notes were completed immediately after the interview to record significant points, overall impressions, interview context, summary of important points, reflective remarks (Miles & Huberman, 1994) and time spent with the participant.

Data Analysis

A data chart of each student participant was created in a profile that included the student, teacher, and parent forms of the Social Skills Rating System (SSRS) instrument, time spent in the Choices: A Comprehensive Social Skills curriculum (Ames & Pickering, 1993), IQ, grade point average, gender, age, number of extracurricular activities, diagnosis of subtype of learning disability, presence or absence of ADD/ADHD, and information from the coded transcript of the interviews. Students', teachers', and parents' perceptions of the participants' social skills use from the Social Skills Rating System and the observations served as predictors in a factor analysis in SPSS® software for Windows (SPSS, Inc., Chicago, IL, www.spss.com). The factor loading revealed the amount of variability each data source accounted for in the total variance. The factor that accounted for the most variability was designated as the best predictor for the students' social skills uses. The factor that explained the second greatest variability was the second best predictor and the process continued through the predictors.

The interview transcripts were coded using NUD*IST® software (N6) (QSR International, Victoria, Australia, www.qsrinternational.com). NUD*IST (**n**on-numerical **u**nstructured **d**ata-**i**ndexing, **s**earching, and **t**heorizing software) is a computer assisted software program used in code-based inquiry that aids in searches for interpretations and underlying patterns in text data. N6 allowed the text data to be broken apart and reorganized, with the goal of developing new insights. This process is called data reduction (Miles & Huberman, 1994). The text data were broken down using 3 levels of coding: open coding, axial coding, and selective coding (Babchuk, 1996; Coffey & Atkinson, 1996; Strauss & Corbin, 1998). Open coding involves examining the text data to identify subjects, concepts, and themes to generate broad categories. In essence, open coding is the first "sorting" of text data into large conceptual bins. Axial coding uses the sorted data from open coding, which are then chunked and clustered into similar categories. This further sorting of data reorganizes them into smaller, more precise conceptual bins to reveal connections and relationships between the categories. Selective coding is the last stage of text data analysis, in which basic categories are related to other categories to highlight relationships. This breaking, reorganizing, and relating among the categories of text data was used to create themes, and new patterns and ways of seeing students with learning disabilities within a social context.

Multiple perspectives are different ways of seeing that may be expanded into other patterns of meaning (Greene, 1971, 1973; Tyack, 1976). Since all views are partial and necessarily distorting, it is necessary to approach truth by the intersection of multiple perspectives (Cornbleth & Waugh, 1993). Analyzing the text data with 3 levels of coding provided new ways of seeing the issue, which generated a different

understanding of the relationships among the nodes. This study was primarily qualitative in nature, with the quantitative component providing 1 of the methods of exploring the data. Using both qualitative and quantitative elements provided a more comprehensive picture of the research questions. The categories generated by interview transcript coding were examined in relationship to the findings from the quantitative data analysis. The mixed methods revealed congruent information and confirmed some of the findings, but it also supplied different views and ways of seeing the data. Doyle (1891) noted, “It is a capitol mistake to theorize before one has data.”

Instruments

Social Skills Rating System

The Social Skills Rating System (Gresham & Elliott, 1990) uses student, parent, and teacher rating scales to determine the 3 domains of social skills, problem behaviors, and academic competence (see Appendix C for student, teacher, and parent forms of the Social Skills Rating System). This study used the rating scale for the social skills domain. The Social Skills Rating System allowed the evaluator to obtain a more complex picture of social skills use from teachers, parents, and even students themselves. The SSRS evaluates a broad range of socially validated behaviors that affect teacher relationships, peer acceptance, and academic performance (Gresham & Elliot, 2005).

The SSRS from American Guidance Systems is widely used as the instrument of choice in educational research to assess social skills use of students from the perspective of the student, parent, and teacher (Bramlett & Smith, 1994; Demarray et al., 1995; Elliott & Gresham, 1987; Fagan & Fantuzzo, 1999; Friedman, 1998; Meisels, Atkins-Burnett, & Nicholson, 1996; Merrell, 2001; Tryon et al., 2001). Merrell (2001)

researched best practices in assessment of children's social skills and found that first-line choices are naturalistic behavioral observation and behavior rating scales. Data from the SSRS can also be used to tailor specific social skills interventions for the student. The SSRS is the measurement instrument selected for use by the U. S. Department of Health and Human Services (U. S. Department of Health and Human Services for the Administration for Children and Families, 2005). The SSRS's internal consistency is high for preschoolers and secondary-age children at .90 and for elementary-age children .87. Test-retest reliability is .87 (Merrell, 2001).

The student form of SSRS provided a 30 item self-report by the student. The parent and teacher forms of SSRS were also used to evaluate the social skills use of each student participant in the study. There were 38 items on the parent form for secondary levels, grades 7-12, and 30 items on the teacher form. Items for each domain were rated on a 3-point rating scale from 0 to 2. A rating of 0 means *never occurs*, a rating of 1 means *sometimes occurs*, and a rating of 2 means *occurs very often*. The ratings were added as raw scores and then converted into standard scores with a mean of 0 and a standard deviation of 1. The SSRS was used in a prior study at this school in validating the effectiveness of the Choices program.

The social skills domain of SSRS measures assertion, cooperation, responsibility, and self-control. In the parent form, assertion assesses the student's ability to ask others for information, introduce him or herself, and respond appropriately to the actions of others. An example of assertion would be "Starts conversations rather than waiting for others to talk first," or "Appropriately expresses feelings when wronged." Cooperation assesses the student's capability to help others or to comply with rules and

directions. An example of cooperation would be “Accepts correction appropriately from adults,” or “Puts away belongings or other household property.” Responsibility assesses the student’s ability to communicate appropriately with adults and to show regard for work and property. An example of responsibility would be “Informs you before going out with friends,” or “Uses free time at home in an acceptable way.” Finally, self-control assesses the student’s ability to respond appropriately in non-conflict situations that require taking turns and compromising or in conflict situations, such as bullying. An example of a self-control item is “Responds appropriately to teasing from friends or relatives of his or her age,” or “Controls temper when arguing with other children.” The student and teacher forms of the SSRS contain cooperation, assertion, and self-control items; the parent form also includes responsibility items. Adroit appreciation of context and appropriateness are major factors in determining an individual’s social competence.

Flanders Interaction Analysis System

Flanders Interaction Analysis (Flanders, 1970) is a system of classroom interaction analysis. The system in its original and modified forms has been used extensively in classroom observation studies (Wragg, 1999). Flanders Interaction Analysis is a system for coding spontaneous verbal communication. The system is primarily used to provide evidence of differences in teaching patterns and to explain why differences in learning outcomes occurred or failed to occur. Flanders Interaction Analysis System was modified for use in this study and used during students’ lunch period. Rather than verbal communication between a teacher and pupil, the communication was between a study participant and peer or teacher. The observation categories were social incompetence and the 6 categories of social skills taught in the

Choices: A Comprehensive Social Skills Curriculum (Ames & Pickering, 1993) rather than Flanders' original 10 categories of communication. Choices categories include communication, attitude, problem solving, community awareness and responsibility, self-discipline and self control, and specific social skills. The Choices categories were related to Bandura's triads of the environment, cognitive processes, and behavior.

To address validity concerns, the modified Flanders Interaction Analysis in this study matched the primary curriculum topics in Choices. To establish reliability, several paired observations were conducted early in August 2005 to determine the level of agreement in designating Choices categories and type of social skills misuse. The degree of inter-rater reliability was determined using comparisons between groups (see Appendix A for Inter-rater Reliability of Observation Instrument). The instrument was considered reliable and consistent for observing the specified participant behaviors with a reliability rating of .81.

Flanders Interaction Analysis system depends on coding at a constant rate that allows for calculation of the proportion of time spent in 1 or more categories. The time interval used in this study was 30 seconds. Participants were observed in the school cafeteria in order to analyze social interaction. Present in the cafeteria were food servers, teachers, visitors, and many students, so another adult did not disrupt the dynamics of lunch time interaction. The observer was present in the lunch room in the days before observations started in order the additional presence to be routine to the participants. This method hopefully reduced atypical participant behavior during the observations. Limitations were imposed on data gathering because participants were observed from a distance. Participants' word choice, voice tone, cadence, and

inflections were missed because their conversations could not be heard. This component of social interaction would have augmented the data collection, but would have also potentially altered the spontaneous nature of the participants' interactions. Over time, students became aware they were being observed, and several participants asked why they were being watched. The students were told they had done nothing wrong and were participants in a social skills study to which their parents had provided their consent.

Structured Interviews

The participants selected for the study met separately 1 time at the school for their interviews. The interview lasted for approximately 15 to 20 minutes. Using an interview protocol, each student participant was presented the same questions in the same order (see Appendix B for Interview Protocol for Student Participants). The interviews were tape recorded and transcribed. Coding of the text data using NUD*IST software program followed after the student interviews were transcribed (see Appendix B for Node Structure for Coding Interview Data).

Time Schedule

The project began at the start of the new school year, 2005-2006, which resumed in mid-August. The inter-rater reliability of the modified Flanders observation checklist was verified at a reliability of .81. Data were collected during the months of August, September, October, and November. During those weeks, each participant was given the Social Skills Rating System, participated in a structured interview, and observed 4 times using the modified Flanders Interaction Analysis System. The participant's teacher and parents were given the teacher or parent form of the SSRS during the first 2 weeks of October, and subsequently, the data were coded and statistically analyzed.

The text data from the participant interviews were coded to reveal patterns and relationships. Data from the observations, student interviews, and the 3 forms of the Social Skills Rating System revealed whether a relationship existed between the type of learning disability and the type of social skills misuse of the student participant. The factor statistical analysis showed which predictor was strongest in determining the social competency of the student.

The exploration and probing of all the data sources presented a multidimensional picture of each participant and his or her social skills from the perspective of his or her specific learning disability. To quote T. S. Eliot (1942), “We shall not cease from exploration, and the end of all our exploring will be to arrive where we started and know the place for the first time” (part V, l. 26 - 29).

CHAPTER 4

RESULTS

Rationale for Analyses

This was a mixed method study using both qualitative and quantitative methods. The qualitative data were derived from structured interviews. Quantitative data resulted from participant observations, the student, teacher, and parent forms of the Social Skills Rating System® instrument (SSRS) (J. Gresham & S. Elliott, AGS Publishing, Circle Pines, MN, www.agsnet.com), facets of interview data, and information from participants' school records. Quantitative data were analyzed using SPSS® software for Windows (SPSS, Inc., Chicago, IL, www.spss.com) resulting in correlations, descriptive statistics, and factor analysis. Qualitative data analysis of text data was accomplished through various levels of coding that enabled comparison and contrast of data and building theory about that data. The result of using both research paradigms presents a more complete perspective of the research questions by linking quantitative and qualitative data.

Research Questions

1. Does the language processing disorder of children with learning disabilities contribute to their general decreased social competency as viewed through the application of Bandura's reciprocal interaction?

    a) How do 7th grade students with learning disabilities perceive themselves as social beings?

b) How do teachers of 7th grade students with learning disabilities perceive them as social beings?

c) How do parents perceive their children with learning disabilities as social beings?

2. Is there a relationship between cognitive ability and social competence in 7th grade students with learning disabilities?

3. What is the nature of the relationship between the type of learning disability and the type of social incompetence shown by 7th grade students with learning disabilities?

How do 7th grade students with learning disabilities perceive themselves as social beings?

Data, generated from structured interviews and the standardized Social Skills Rating System instrument (SSRS), provided insights into this question.

Data Collection – Structured Interviews.

Eight interview questions were created and presented in a logical progression. The questions ranged from the participant's definition and example of social skills to problem-solving methods in their social interactions when there was misunderstanding. The interview questions were created first and then classified into the parts of Bandura's triad of reciprocal interaction to which they most closely related: cognitive processes, behavior, or environment (see Appendix B for Interview Protocol for Student Participants). Three of the 8 interview questions sought the participant's opinions, estimations, and views, and so were categorized as cognitive rather than environmental or behavioral determinants. Four of the questions focused on factors in the environment, and 1 question was based on behavior of the participant. Each participant was interviewed 1 time. The duration of most interviews was 20 minutes, with some

interviews taking additional time if the student provided detailed responses. The duration of 2 interviews was 10 minutes each because of limited participant responses to the questions and probing. The 2 participants, # 11 and # 17, were compared by their learning disability diagnosis and scores on social competence from various perspectives. Each interview began with a broad, open ended question from a written protocol to guide the participant into talking about topics pertinent to the research questions. Data were sorted into Bandura's determinants and examined.

Framework for Data Analysis.

The interview text data were input into NUD*IST® software (N6) (QSR International, Victoria, Australia, www.qsrinternational.com), a computer assisted software program that afforded code-based inquiry and discovery of underlying patterns. Prior to coding the interview text data, a basic tree-type organizational system of topics called *nodes* was devised (see Appendix B for Node Structure for Coding Interview Data). Demographic information, or base data, noted gender, years in the Choices curriculum, primary learning disability diagnosis, grade average, extracurricular activities, and Social Skills Rating System scores. All base data except extracurricular activities were obtained from school records. The base data were located at the beginning of the organizational structure of nodes.

The designation of tree nodes or primary categories paralleled the progression of interview questions, with related topics and emerging themes subdivided beneath relevant nodes. The hierarchical tree structure was created prior to coding, with "free" nodes created for emerging concepts that were then grouped or chunked into broader categories or tree nodes. Tree nodes were then analyzed for emerging themes and patterns. The interview questions were designed to explore how students with learning

disabilities perceived themselves as social beings and to probe the participants' social competence behaviors.

The interview questions were created first and then classified into the most relevant Banduran reciprocal interaction categories. Banduran (1986) theory states that the cognitive processes of the individual, his or her behaviors, and the environment interact as bidirectional determinants of each other. Primary nodes included base data, social skills, learning social skills, self-perception, social skills influence on others, participant's choice of social skills, and areas of social incompetence. These major node branches contained related nodes subdivided as smaller branches. An example of the smaller subdivisions was "learning social skills" subdivided into "acquisition" and "performance," with acquisition further divided into "trial and error," "observation," and "direct instruction" as more finely defined nodes. The participant's verbal assessment of his social skills was coded anywhere it appeared though the text data.

Bandura's reciprocal interaction triad of cognitive processes, behavior, and environment constituted components of the original tree node structure, with subcategories beneath the 3 categories. Bandura (1986) has stated that the cognitive area is composed of both intellectual qualities and personal traits. Thus the *cognitive* node in the coding structure was subdivided into *intellectual* and *personal* nodes. Further divisions beneath the *intellectual* subnode included beliefs, attitudes, expectations, and thoughts. Beneath the *personal* node were subdivisions of *emotions* and *temperament*. *Behavior* was subdivided into *observable factors* and *verbal factors*. Observable factors entailed *motor responses, facial affect,* and *body language*. Verbal factors involved *voice tone, inflection, volume,* and *rate of speec*h. The *environment'*s

node branch was subdivided into *physical surroundings, human surroundings*, and *social influences*. *Physical surroundings* were further subdivided into *home, school,* and the *public*. *Human surroundings* were subdivided into smaller branch nodes of *family, adults not in the family, friends and peers*, and *strangers*. *Social influences* exerted by the surroundings were refined into *explicit rules, implicit rules,* and *information from social feedback*. The nodes were modified, added, deleted, or joined as needed as the coding and analysis proceeded (see Appendix B).

As themes or patterns such as humor or retaliation emerged, free nodes were created in the data coding. Free nodes were separated from the tree structure because they were topics which were evolving and not necessarily related to the original tree structure. The resulting analysis consisted of 11 categories that were subdivided into an organizational system of 116 nodes, and 10 free nodes. Dated memos were created for hunches, developing gestalts, reflections, and epiphanies.

When coding a participant's interview, some text from a participant's interview was coded at multiple nodes. As an example, multiple coding was used on the following sentence: "I felt very angry when my mother did not believe me, so I went to my room and thought about what to do." This sentence was coded under the node *Bandura's triad: environment*, which was subdivided and coded into *human surroundings*, which was further subdivided and coded into *family*. Next the sentence was coded under *Bandura's triad: cognitive*, which was subdivided and coded under *thoughts*, which was coded and subdivided under *emotions*. Next the sentence was coded under *Bandura's triad: behavior*, which was subdivided and coded under *social*

incompetence, which was subdivided and coded under *self misunderstood*. Finally, the sentence was coded under the free node *anger*.

Some nodes received very little coding, such as *observable factors,* because this node was redundant with *motor responses* and *movement of individual* nodes. Other nodes, such as *humor,* received a large quantity of coding. These nodes were further subdivided into more precise topics concerning humor such as *emotions*, *physical environment*, *humor received,* and *humor expressed*. After the 26 interview transcripts were coded, various analyses were conducted, revealing themes and patterns.

Cognitive Determinant

The cognition component of Bandura's triad indicates a person's application of forethought, with potential effects on future behavior. Throughout this section of the data analysis, responses to interview questions related to the cognitive determinant. The 4 questions related to the cognitive determinant probed the students' understanding of social skills by delving into their ability to apply consideration of the situation and others as they responded. The findings bore out the nature of the cognitive determinant and provided an indication of this populations' perception of social interaction through a lens of cognitive perception.

Protocol Question #1: What does social skills mean to you?

Participants' various definitions of social skills revealed that they primarily perceived the constellation of social skills in somewhat limited terms of "please and thank you" type manners rather than also encompassing functioning in an academic setting, getting along with the teacher, and perceived acceptance by others. Typical student responses included: "That's a hard question. I think it is not being mean, and like helping. Yeah." "Table manners, or something like that. Manners and stuff. Table

manners and regular manners in the open with people." "Somebody is waiting to give you something and you're grabbing for something else. The other person has to wait for you." "It has like information like how you greet people and how you have good manners in front of people." "Holding the door open for someone, having a nice firm handshake." "Etiquette, manners, being decent." "Our classes, we have social skills about manners. Please, thank you, no thank you, thanks for offering." "If you have really good ones [social skills], like proper grammar, they recognize you and they think you're smarter. If you don't have good grammar, they think you're stupider." These comments related to the cognitive determinant because they involved the application of forethought, understanding of consequences, and motivation.

Some respondent's definitions of social skills suggested a limited understanding of the reciprocal nature of social interaction. Explanations ranged from a proficient "interacting with other people, like your co-workers or co-students . . . everybody you are around" to feeble responses "like reading, or enrichment, or something like that" and "social skills is learning all about the alphabet, but in a different way." Out of the 26 definitions, 3 were "I don't know" or "skills when you are being social." Only a few of the responses referred to interaction as a component of social skills. One participant grasped the concept of reciprocal interaction in saying, "If you are kind to your best friend, they won't make fun of you if you get a new haircut." The participant understood the bidirectional influence between the social skills he used with a peer and the manner in which the peer responded to him.

In their definitions and examples of social skills, one fourth of the participants reported cognitive factors in their definitions, such as: "It's what people do to solve

problems, like all sorts of problems." "Some type of personality traits, like perseverance, integrity, self-control." "Things that we need to work at, or we need to get self control over. Something like that. We need to learn about life and how we are changing." The comments of the participants reflected their concept of cognitive processes as a component of social interaction. The participants had the capability of forethought, self-regulation, and self reflection within their cognitive processes and reported such traits are basic to social skills use.

Anxiety, another cognitive determinant theme, emerged. A participant voiced great anxiety over pleasing others, such as, "If I ever make a mistake, I'll apologize; I'll do anything it make it up. I'll do anything to, you know, ask for forgiveness." Another participant stated, "I want to make my parents look good. What they do has an effect on me. [If people have a bad impressions of me] that would be like awful." In explaining a misunderstanding, a student related, "So it was my fault. It was awful. It was awful." These students not only interpreted the behavior and predicted the responses of others, but also actively processed this information into a mental schema. The schema involved a cognitive judgment of the effect of the misunderstandings, and a plan was predicated for future behavior to prevent a reoccurrence of the conflict. The comments from the students aligned with the cognitive determinant due to participant's ability to apply forethought.

Other examples of the application of forethought and processing included these statements from students: "You can't always see yourself. And sometimes it's also good just to have another person's opinion." One participant explained his cognitive strategy in stating, "I just walk through what happened in my mind." Another reported

how she decides how to respond to a confusing statement, “I will listen to it again in my head to see what they really mean.” These statements of the respondents indicated their cognition regarding social decisions because they applied forethought, which was a cognitive process.

More than three fourths of the participants reported becoming mad, angry, or annoyed by a social interaction. The following comments represent the general sense of the groups’ responses regarding anger: “That person kept on annoying me in class. I said, ‘Please stop.’ He didn’t get it, so I got really annoyed, so I said ‘STOP!’ And the teacher got mad at me. And the teacher kept on arguing with me again. It got sort of annoying.” “I get really mad at him.” “I was just playing and he got really mad at me.” “She got really mad at me and she wouldn’t listen to what I was trying to say . . . .” “That made me mad. So I was mad just about the whole entire week.” “My friend was mad at me for something and I thought that she was mad at me for something else.” “He got mad at me. I don’t know for what reason.” “[How did that make you feel?] I felt mad.” “They’ll say you’re mad at other people and they’ll get mad at you because you made that one person mad.” “People take it [joking] too seriously and they’ll get really, really mad at me. [What do you do when that happens?] I usually don’t want them to be mad at me so I just get really mad about what I did. [You get mad at yourself, or you get mad at them?] Both.”

No interview protocol inquired about emotions, so the emotional reference was spontaneous. The anger references were noted in the text data after the first level of coding when sufficient data accumulated for a theme to emerge. In the reported social interaction in which anger was cited, a misunderstanding was not always involved. No

participant reported being depressed. One student noted a friend whose quietness was misconstrued by others in a negative way: "My friends thought she was in a bad mood because she was ignoring people, but really she was just trying to hide her sadness." Here sadness was mistaken for anger.

The emotions of anger related to the cognitive determinant because students processed, interpreted, and synthesized feedback from their environment. The feedback, composed of sequences of events over time, provided students meaning. In the cognitive determinant, people actively extracted relevant information from their environment. Anger was a consequence when some types of information were processed and given meaning by the individual. Bandura (1986) noted, "Consequences alone often produce little change in behavior until people become aware of what actions are being rewarded or punished" (p. 229). The respondents reported perceiving another's anger and also experiencing anger as a consequence of another's actions and behaviors. The comments from the students aligned with the cognitive determinant due to their ability to apply consequences to their and others' actions.

The following statements by respondents indicated their response toward their cognitive interpretation of a lack of trust. Participant's examples included: "[I felt] very 'not trusted' because I told them It's not what I said. They didn't believe me, that I wasn't talking to her," and "He thinks like I say one thing, but he is kind of suspicious of me so he takes it the wrong way." [What if you think you didn't do anything wrong and they are making a big deal out of nothing [in a misunderstanding]? "That has happened so many times. You know, I can't even count. I just tell them, 'I didn't do it, and if you don't agree with me, too bad,' and I'll just walk away. It's so annoying when people

accuse you for something you didn't do. And then they make a huge deal out of it." "And I told the coach and he [the boy who hit him] said he was kidding, but I don't think he was." Sometimes the participants were unable to select an appropriate interpretation from their mental schema to fit their environmental stimuli, so they became confused or suspicious of the person in the interaction. The responses from the participants were in the cognitive determinant range because the participants applied future consequences and interpreted others' behaviors.

Another theme in the cognitive determinant was humor. Though intended to be amusing, humor was an area fraught with misunderstanding in the participants' social interactions. In referring to instances in which participants believed *they* were misunderstood, nearly half cited an example involving humor. In providing examples where participants misunderstood *others*, considerably more than half the participants cited humor in their illustrations. In the majority of the participants' examples, humor was misinterpreted by the participant, or humor was generated by the participant and misunderstood by others. Numerous instances were cited: "We were playing around and we started making jokes. I think I was one of the jokes and I got kind of mad and he was just playing around. It kind of got me." "I was trying to joke with her and she got really mad at me." "He said was kidding, but I don't think he was. But he might have been. It didn't seem like it." "He started being really mad and frustrated because he didn't understand our joke."

Generating humorous observations and differentiating between verbal comments as jokes or serious commentary was a difficult process for many in the group. Sometimes the participants intended humorous remarks were construed by peers as

mockery, meaningless, inappropriate, or ineptly chosen commentary. Because of another's interpretations of the remarks, the behavior of the participant altered the existing environment in a negative way. The negative responses affected the cognitive processes of the participant in interpreting negative social feedback.

Bandura's cycle of reciprocal interaction was influenced in all 3 determinants of the triad. An inability to perceive a difference between serious comments or jokes made selection of an appropriate response difficult at best. An understanding of nonverbal social cues is a critical component of expressing or receiving humor. However, among children with learning disabilities whose ability to receive and process cues is impaired, receiving and perceiving the intent of humor remains a continuing challenge.

The limits and liabilities in using sarcasm and jokes in computer emailing and instant messaging were reported by the students. A participant reported, "I was emailing a friend and she was talking about a play we had last year, and she, I thought she said she could have done my part better. In fact, she meant she could have improved *her* part. It was on the computer, it wasn't in person. It was a little bit harder to tell what she meant and I kind of think like she used the wrong words," and "On the computer, when you're typing on IM [instant messaging] and AOL and stuff. You don't have any expression, like to your voice. You can't say things in a sarcastic way. I said something to one of my friends and they like got offended by it. They thought I was serious."

Some participants reported negative perceptions they believed their peers held of them. One student stated others thought she was unfriendly. She commented, "I'm like anti-social or something. I just want to be like quiet and like sit down. They're like, 'Oh

my gosh, what's wrong?' When people ask me what's wrong, it kind of bothers me and I say, 'Nothing.' They go, 'No, really, I know something is wrong.' If I don't want to talk about it, they just keep bothering me. And, like, I really don't care what they think." Another reported a teammate pushed him against the wall, but the participant never understood why. He remarked, "In football the other day, a kid slammed my head against the tile in the locker room. He said he was kidding, but I don't think he was. But he might have been. I don't know why he kept pushing me." Bandura (1989) believed that thought was used to motivate and regulate a person's actions. The participant could not determine the motivation for the bully's actions. A disruption occurred in the student's cognitive process, rendering him defenseless and confused.

Protocol Question #5: How do you decide when to use different social skills?

A variety of responses were elicited by querying the participants on how they decided which social skills to use in an interaction. The original protocol was, "How does your use of different social skills influence how others react to you?" The words "influence" and "react" combined with the participant's selection of different social skills was complicated for the participants to understand, and many requested clarification. One student replied, "Well, some people are nice to me, and some people, will like, say . . . I don't really know." The question was reframed as "How does your use of different social skills have anything to do with the way people respond with you?" The participant then responded, "No, I don't think so."

The majority of the participants relied on *who* was in the social scenario rather than *where* the scenario was in their explanations of social skills selection. When probed further with examples of specific locations, the participants benefited from a specific frame of reference in voicing appropriate social behaviors. A scenario was

provided such as: “What if you are with your friends at lunch, compared to being at a school awards ceremony with the same friends? Would there be a difference in your social skills? Do you treat everybody exactly the same, for example, your friends and your grandmother?” The participant’s response was, “No. I respect my grandmother. I respect my friends, but just in a different way.” One respondent selected vocal behaviors on the location and activity. He reported, “Well, you know, we’re not in a very big of a room [for the interview], we’re in a small room. And if we were in here with people, you wouldn’t want to be like [feigns being rowdy and noisy]. You also wouldn’t want to be like [whispers]. So I’d just use a normal voice. If everybody in the room were louder, like “I HEARD THAT ON MTV!” If everybody is just talking, you might want to use a loud voice to get their attention or bang on the table or something. When you’re outside, like soccer or a football game or something, you want to cheer on the team so the team feels all excited and they think they should win and stuff.” One participant explained neither the people nor the location would have an effect on his social skills, because “I would treat everyone the same.”

Certain occasions had an intrinsic proscribed level of necessary social competence, such as: “When you’re eating, you’ll have to have really good manners” and “You have to act nice whenever you’re with your mom.” Some participants permitted the preferences of the other person to determine their response in reporting, “If they’re weird, I wouldn’t talk to them. Like if they liked Pokey Man.” The type of activities determined another participant’s social skills selection, in explaining, “You treat people in football with more anger. People in church, you treat them more nice.” Selection of social skills by participants involved factors such as the activity, the people

involved, and the location. The student made a cognitive assessment of environmental stimuli, such as people and surroundings that comprised the environment, in order to select appropriate social skills behaviors suitable to the people and place. Inherent in the participants was the ability to reflect upon past experiences and to use forethought to consider possible outcomes of selected actions. Their symbolizing capacity enabled participants to form a mental schema of what were appropriate responses in specific environments such as school, church, sports, or Sunday dinner with grandparents. Their vicarious capability enabled participants to learn from observed behaviors rather than learning everything by trial and error. All of those components of cognition are employed by people as active processors of information.

Protocol Question #6: Give an example of a social situation when you believe you were misunderstood.

Participants discussed interactions in which they believed they were misunderstood, with reported misunderstandings occurring equally at school and at home. In nearly half of the incidents, the conflict was with a friend. A family member or an adult at school were equal subjects of conflict with the other half of the participants. No participant reported a social interaction misunderstanding instance with strangers. When participants recalled their emotion when they were misunderstood, nearly half recalled being angry at the situation and were still angry to some degree. One angrily recalled that, “He purposely sat next to me on purpose just to bother me. And I got in trouble for that. And the teacher said that whatever she said was right and what I said was wrong. She didn’t try to understand. I will never forget that.” When describing what generated the misunderstanding, half of the students provided a cognitive factor as precipitating the incident. Their comments included: “I thought she meant something

else." "And I was like, 'Dad, its disappearing ink!' He started being really mad and frustrated because he didn't understand our joke."

If remedial measures were not taken in response to a social interaction misunderstanding, the participants indicated a conscious choice *not* to respond because of the specifics of the social and physical environment. Some participants reported they recognized a disruption occurred in the interaction ("something was wrong"), but the disruption was just too complicated to unravel and reconcile. Their explanations included: "I don't think it will make any difference." "I let her live with it [the misunderstanding]. It was already past and gone. You couldn't do anything about it. There are people you can't change what you think of you." The participant used his or her ability to foresee the consequences of attempting a reconciliation, which aligned this response with the cognitive determinant.

The interview data examined variability among the participants in their concept of social skills and their social competence with regard to the cognitive determinant. Some participants reported a complete definition of social skills and the various factors such skills entail. There was a lack of variety in expressing emotions, evidenced by the reliance on the emic terms "mean" and "mad." The term *emic* refers to an insider's view point that is judged by the system's own criteria. The opposite of emic is *etic*, which is an outsider's view that provides an external evaluation (Headland, Pike & Harris, 1990). The participants displayed a common understanding of the connotations of the emic terms mean and mad.

Each of the participants provided the definition of social skills in their own words. The definition was formed through the participant's social interaction. The range of

social competence was demonstrated in coping strategies employed by the participants in instances of social interaction misunderstandings. Some of the participants verbalized evidence of self-knowledge and insight in their social interactions. They cognitively reflected on their social experiences and how their cognitions then influenced their behavior and environment. Other participants' statements indicated their minimal insight into the workings of social interactions. Their reliance on "I don't know" evidenced their low understanding. The 4 protocol questions provided a rich perspective of the respondents' cognitive determinant by revealing their interpretations, forethought, inferred consequences, and information processing. A review of the data related to the cognitive determinant revealed that these participants used the cognitive processes of self-reflection, forethought, self-regulation, symbolizing, and vicarious learning in varying degrees. The assumptions of students as active processors of information rather than mere recipients of stimuli lend a deeper understanding into their perception of themselves as social beings. In essence, these 7th grade students with learning disabilities showed some social competence in the area of cognition, albeit limited competence with more complex forms such as humor.

Behavior Determinant

The behavioral component of Bandura's triad includes a person's observable behaviors, including facial affect and body language. Throughout this section of the data analysis, responses to the interview question will relate to the behavior determinant. The question delves into the respondents' ability to behave in ways that solve social misunderstandings and conflict. The findings bear out the nature of the behavior determinant and provide an indication of this populations' perception of social interaction through Bandura' lens of the behavior.

Protocol Question #8: What kinds of things do you do to clear up misunderstanding in a social situation?

Participants reported examples of behaviors which instigated disruptions in social interactions. The conflicts principally involved friends and peers rather than family or teachers. The students' commented, "I said something to one of my friends, and they like got offended by it." "Once I was joking with a friend. He did not understand that I was just playing and he got really mad at me." "Last week I was in my class and a girl was putting her feet on my backpack." "My friend was mad at me for something and I thought that she was mad at me for something else." "I was talking to a friend and she got mad." " My friend told me a joke . . . ." "Well, my friend was really, really mad and she had a real bad day, and somebody hurt my feelings."

A theme emerged in several interviews when participants reported the use of social skills behaviors in the context of defense or retaliation against others, such as "social skills is like learning manners, and like how to defend yourself against bullies sometimes" and "If I used bad social skills, the other people would talk about me behind my back or something. And they won't say it up front, so that I can't fix it." And "If I were rude or grumpy, they would probably talk about me behind my back, and they'll treat me bad. But if you are happy or polite, they won't be so, 'Oh, my God.'" "They probably won't want to pay as much attention and they might want to talk about you and say, 'Oh my gosh, she's so mean and I don't want to be friends with her' and all that stuff. If you are nice to them, then they'll have good things to say about you." "They can kind of bring you down. You can be kind of assertive to let them know, 'Hey, I'm not just a kind of welcome mat where you can step all over me.' "They'll make fun of you."

One fourth of the total group of participants reported they used social behaviors as a defense against people who “will talk about me” if the participant was rude. Their examples included: “You can’t be really nice with a headache and they’ll start talking about you and say you’re mad at other people and they’ll get mad at you because you made that one person mad.” Of the 26 student participants in the study, 13 were males and 13 were females, but twice as many females as males perceived social skills in terms of defense against others. After a misunderstanding, 1 participant said he “would keep his distance” in the future and another stated they [participant and peer] could still be friends, “but I’ll just watch him closer.” Another participant reported being a target of contempt and his response: “If you don’t stand up for yourself, then a lot more people will pick on you.”

The participants’ use of positive social behaviors for protection, defense, and security against aggression was an unanticipated theme in some interviews. Positive social skills are generally used to smooth the path for a variety of social interactions such as introductions, misunderstandings, requests for assistance, communication, and problem solving. The participants’ preemptive use of social skills provided a different perspective from using social skills to ensure positive interactions. In both instances, the social skills use fell within the behavior determinant. From the participant’s comments, it was concluded that their overt motor responses were used in a preventative capacity as deterrents or advance behaviors to avert negative interactions. All of their reports aligned with the behavior determinant in explaining how their behavior was uniquely determined in response to social interactions.

The majority of the participants cited behavior factors in their definitions and examples of social skills such as, “I guess the way you talk to people, or the way you act around people.” “Facial expressions can let somebody know by your facial expressions if you are upset, or not very polite.” “You have to say it to them nicely.” “By watching other people’s reactions to things. Like if somebody said something, I don’t know, and other people are offended by it, if you can tell the other person is offended by it, then you’re not going to keep carry on with the conversation.” These participants reflected their behaviors were learned through both observation and participation. The comments cited negative reinforcement in the form of others’ reactions that decreased the likelihood of particular behaviors reoccurring. Participants possessed both the knowledge and the skill to perform a given behavior.

Some participants articulated alternate modes of communication other than verbal communication, such as through facial expression and secret codes. Examples were: “And then, like if you’re having a good time, and the teacher gives you ‘the little eyes,’ like, ‘Hey, you all need to stop,’ then you need to stop talking and listen,” and “When me and my friend got in a fight, I got online where I knew he would be. I was like, ‘sorry.’ Me and Scott have our own words. Everybody knows their own words. I was like, ‘S-R-Y.’” An inability to understand successfully another’s style of communication was cited by 1 student, in explaining, “My captain on my cheerleading squad, like she doesn’t know how to really communicate to me. Like sometimes she doesn’t word questions right or something to me. I misunderstand her a whole bunch when it is one of those situations. I don’t really know what she is saying, like sometimes it can be offensive to me, but then it’s not.” The responses provided depth to an

understanding to their behavior responses and factors that led them to change or modify their behaviors in order to clear up misunderstandings. Their reports of problem-solving behaviors were examples of the behavior determinant, because observable or audible behaviors such as speaking, motor responses, body language, and facial affect were involved.

Nearly half the participants described a behavior that preceded a misunderstanding, such as: “He pushed me, but said he was playing.” “I was in computer class and it was like really hard. I said ‘Dang’ and somebody said I said ‘Dang, woman’ to the computer teacher. I got in trouble.” “I couldn’t see where they were waiting for me.” “She thought I was doing it on purpose. I was doing it [flopping around in a church mass in the grass] because ants were getting all over me. I was just trying to keep the ants off me!”

Various problem solving behaviors were employed when a misunderstanding occurred in social interaction, whether the participant believed himself to be misunderstood, or he or she misunderstood another person. Less than half the participants maintained they *always* tried to fix the situation, and only a few participants replied they *never* tried to repair the social error. Nearly half reported they *sometimes* tried to solve the difficulty, depending on various factors. Two thirds of the participants reported they *always* informed the person they misunderstood or whom they believed had misunderstood them. One respondent remarked, “I go and tell them what happened. I don’t stay quiet and ignore them, ‘cause I have to get it worked out. Or if I get really mad, I still go and tell them. And then they try to explain to me what happened.” The rest believed the vagaries of the situation determined their response.

One explained that, “I try to settle it, but if I know it is going to take like a ton of time [to settle the misunderstanding] and if it doesn’t work like in a week or something, then I’ll have one of my friends who is friends with them try to talk with them. And if they get really annoyed, I’ll like leave it around for awhile and see if they’re OK.” Most of the participants did not rely on a friend to help repair a misunderstanding, but were self-reliant. A few participants always depended on a friend’s help and a few were guided by the specifics of the particular circumstances regarding whether they sought a friend’s aid. One student explained, “It depends on the issue.”

Individual responses uniquely determined the behavior of the participants in dealing with a misunderstanding. Their problem-solving behaviors evolved through reinforcements from previous behaviors, which increased or decreased the chance of the misunderstanding’s successful resolution. Participants learned their present behavior from successfully or unsuccessfully participating in or vicariously observing previous problem-solving behaviors. Thus they were demonstrating the behavioral component of reciprocal interaction.

Employing adult assistance in a misunderstanding was eminently different from soliciting a friend’s help. Nearly half the participants vowed they would not consult an adult for any reason or under any circumstances, saying, “I don’t really like them [my parents] getting into my social life because they’re like kind of embarrassing.” Adult help would be necessary, nearly half conceded, if it [the conflict] were “really bad.” The participants inferred an ability to clear up or ameliorate misunderstandings among friends. This phenomenon suggested the participants and their peers shared a commonality of behavioral responses that resulted from a group norm for behavior. The

behavioral group norm may have resulted from several shared years of the Choices social skills curriculum. Choices unit on responsibility involves the students' selection of a course of action that requires their determination if a problem can be successfully resolved by them or requires adult intervention. The behaviors in social interactions were all observable or audible responses and so fell within the range of the behavior determinant. The comments from the students reflected their general behavior in resolving misunderstandings in social situations.

Environment Determinant

The environmental component of Bandura's triad includes people and surroundings that compose the social and physical environment. The environment influences the behaviors that are performed and provides environmental stimuli to be cognitively processed. Throughout this section of the data analysis, responses to interview questions will focus on the environment determinant. The 4 questions related to the environment determinant probed the students' understanding social skills acquisition, various ways their social skills effected the environment, and examples of social interaction misunderstandings because of missed or misperceived environmental information. The questions delve into the participants' ability to effect the environment and also to be effected by their environment. Most participants relied more on the environment in taking cues for selection of social skills in interactions. The findings bear out the nature of the environmental determinant and provide an indication of this populations' perception of social interaction through a lens of environmental perception.

Protocol Question #2: How do you learn social skills?

The bidirectional nature of reciprocal determinants involved active cognitive processing, which affected the participants' behavior. Their performed behaviors then

influenced the environment. One student explained: "Like you learn social skills with everyone around you, every second of the day. Like at lunch. I watch them and decide if they are doing something good that I want to do." "[What if you are with your friends, but you are at lunch, compared to being at an awards ceremony with the same friends. Would there be a difference in your social skills?] Just the place, and maybe being around somebody who wasn't my friend, I guess. It is the people and the situation." Another student used various social skills depending on the environment, "Like how to behave at home, how to behave during school, or how to behave outside of school." "Pretty much everywhere you go, you learn something new." "When I'm at a friend's house, I act better than when I'm at my mom's or dad's house and I have a friend over. I act more polite at a friend's house." These comments reflected the student's belief that both the social environment and the physical the environment provided clues for cognitive processing in responding to that environment. After assimilating the environmental information and adding it to or modifying their mental schema, the students responded by performing behaviors that may affect their environment. Participants noted they used social skills appropriate to the environment. The environment afforded them physical and social information in terms of home, school, a friend's house, and "from everyone around you." In attending to certain environmental stimuli and responding to it, the participants were relating to their environment in a meaningful way. All of the students' comments aligned with the environmental determinant because they related to people or surroundings in the participants' environment.

Participants were queried about their social skills acquisition. Three students stated they did not know how they learned social skills: “I don’t know. I learn because at school we have to learn it [Choices Curriculum].” “Skills that you use when you are being social.” [Are there other words you could use to define social skills?] “No.” When asked *where* they learned social skills, the participants were nearly equally divided in reporting learning their social skills at home and at school with teachers. Typical explanations included: “My grandparents, and my parents.” “With my teacher. She gives us a packet, and then we talk about it at the end of the day.” These comments implied that students’ knowledge of where they acquired social skills was dependent on their social environment provided by parents, grandparents, and teachers rather than their physical environment. Students’ comments reflected they learned their social skills from their social environment.

The participants were also divided equally in *how* their social skills were acquired. First, the Choices curriculum was a potential factor in acquisition of social skills because all participants experienced more than 200 hours of classroom instruction in the curriculum. One third of the students cited examples of direct instruction in the social skills of the Choices curriculum in reporting “Social skills is at the end of the day and our teacher sits us down and gets out a folder and tells us it is like, in different categories. Like how to behave at home, how to behave during school, or how to behave outside of school” and “when my mom tells me something,” “When we talk about it in [social skills] class,” and “I learned it [social skills] in school because we have a social skills class and we read this book and highlight things that are important.” The

school curriculum was the direct instruction method most cited for learning social skills. This social environment served as a space for acquiring social skills understanding.

An equal number of participants learned social skills by observing others. Students commented: “I, well, in 4th grade they used to do like do skits because I learn better by visual. They would just do skits instead of just sitting down and talking to us and stuff about it. They would do skits and we would like get to see them. That’s how I learn.” “By watching other people’s reactions to things.” Observation also taught 1 participant what not to do in social interaction. The student reflected, “Sometimes I see something someone or my friends are doing, and I don’t think it is very nice to do. I kind of remember not to do that, like talking back to a teacher. I’ll remember not to do that.”

Only 1 participant reported learning social skills by trial and error, in explaining, “Like you learn skills while you are going into other things or you’re going in life. And you learn how to do things ‘till you learn how to get the hang of it and self control and not so hyped up and stuff” and “you can just do everything by yourself and figure out what to do.” Bandura (1977) theorized that most learning was from observation and modeling. He stated that if everyone learned by “tedious trial and error,” life would be very risky (p. 12). The data from this interview question bears out his thesis. The students in this study were taught social skills as they observed others and copied their social skills use. This finding suggests that acquisition of social skills was primarily based on students’ observations of the environments of home and school and, in the latter environment, perhaps through the Choices Curriculum.

Protocol Question #3: Would you care if you believe your social skills are at 1 level, and others saw you at a very different level? Why?

Students reported a general perception of competence in their daily use of social skills. They were asked if it mattered to them if others perceived their social skills use to be much higher or lower than they believed them to be. Some students responded that a different perception afforded by others would motivate them to change. They remarked: "If it [social skills use] was low, I would try to improve myself, and if it was high then I would feel good for myself." "Yes, 'cause one of my really big priorities is reputation. And I want people to know, 'Oh, this is [name], she's a hard worker, she's a very social girl, she's fun to hang out with, she's fun to talk to.'" "If someone said I'm a low person in social skills, I'd want to fix stuff." "Actually, yeah, I probably would care. If they saw me much lower [in social skills], that would mean I'd probably have to be a little more polite, and help more." "It would bother me because if I'm not acting my best around people because I want to make my parents look good too. What they do has an effect on me. [If people had a bad impression of me] that would be like awful." "I want people to like me and believe that I'm nice and I respect people." [And so if they weren't getting that message?] I'd try harder." A few respondents reported they would only care what people thought of their social skills if they respected the person. They rationalized: "But if they don't know me that well, I wouldn't care. But my sister, or someone I know, I'd kind of want to know how and why they think that." "I would care if they were my friends, but not if it was someone I didn't know."

In contrast, most respondents disclosed that others' opinion of their social skills use would not have any effect on them. They remarked: "No. [Why?] No, that is just their opinion." " Not really. [How come you wouldn't care?] Because it is just like me

being me and, like, I really don't care what they think." "It doesn't bug me like if my parents see something different than I do." " No, not really. [Why?] It probably means you are between what you say and what they saw. You can't always see yourself." "Just because that's just my opinion. They can think what they want, and I can too." "I don't really care what people think about me. [Why does it not matter?] Because if people don't see what I want them to see about me, then they just didn't see me right, or something." "No. [Why wouldn't you care?] They would probably be right, because they are a better judge that I am." " I wouldn't care. I'm used to people judging me." "No, because it is my decision. They might see it differently. They might have a different opinion on it." "No I wouldn't. [How come?] Because people are just people. Because everybody is different, and no one is ever going to be the same." "No. [Why wouldn't it matter?] Because it doesn't bother me what other people think of me." "No. [Why wouldn't you care?] I think that I'm in the middle. Not that bad, and not that good. If they saw me as low or high, I wouldn't care, because they are wrong." "No. [How come?] Because I don't like to do exactly like other people do." "I would probably like to be higher, but I would probably care more what I thought about it."

Nearly all participants interpreted the question to mean others would probably see their social skills use lower than they rank it. Many participants reported they would not care what other people thought, but based their lack of concern on different reasons. Some of them declared their relationship to the person evaluating their behavior would determine their concern. One asserted that her own assessment would be the most important factor. A few remarked they were used to being judged. "People are entitled to their own opinions" was reflected by a few of the students. These

comments reflect the majority of participants' beliefs that others' assessment of them, their social environment, would not matter to them.

A few participants reported concern for how their social skills use influenced other people's response to them. Their response was a form of social feedback provided by the environment. The environment stimulates and encourages, or discourages, certain behaviors such as social skills use. Because of this support or deterrence, some participants reported they would desire to improve their social skills use, and others stated others' evaluations would not influence them. The environment provided conditions, such as social feedback concerning social skills use, that were perceived as demands by some participants and opportunities by several. The environment effected participants differently concerning their social skills use; however most of them understood the environment as a non-cue in their choices for social interaction. Few participants reported their opinion of their evaluator would be critical in their level of concern for social feedback provided by their social environment. These comments by respondents concerning social feedback from social cues aligned with Bandura's environmental determinate and suggested that this component of the triad, among adolescents with learning disabilities, was a weak link in their determination of social competence.

Protocol Question #4: How does your use of different social skills influence how others react to you?

When participants were asked *if* their use of social skills influenced how others reacted to them, nearly three fourths stated their social skills use would influence other's reactions, several responded their skills use would have no effect, and nearly one fourth of the participants were unsure. When explaining *how* the use of social skills influenced

another person's response, the majority believed the other person would decide whether to extend friendship depending on how the participant presented himself or herself. The other person would not want to be a friend if the participant was "being mean." Students explained: "They probably won't want to pay as much attention and they might want to talk about you and say, 'Oh my gosh, she's so mean and I don't want to be friends with her' and all that stuff. You won't get into such trouble than if you were really mean and selfish. Depending where I am, or who I'm talking with or if that person has always been really mean to me, I try to be nice. But if I can't hold it, I'll try to be mean." "Like if I am mean, they might say something really mean back." "She would go like, 'OK, I know she [participant referring to herself] was really MEAN to me that one day, but she's a really fun person to hang out with' and she'd probably invite me back to her birthday party." "They'll probably be mean to you if you'll be mean to them." "If they are mean to you, you don't want to be friends with them anymore." "You don't want to be mean to them or something like that. If I am mean, I don't think they would be nice to me." *Being mean* is an emic concept generally understood by this population and is perceived as a form of social feedback provided by the environment. This environmental feedback of being mean discouraged certain behaviors, such as use of poor social skills, and encouraged other behaviors, such as positive social skills use. In this way, the participants were producers as well as products of their environment. Being mean is a form of social cue used as information emanating from the environment that must be attended to by the participant to insure positive responses from others.

Matching appropriate social skills use to the environment was a concept 1 student aptly expressed: "By the situation. There is a time and a place for everything.

Like you don't use school rules at home. You use social skills in the social situation group every day. They're not just for school." Another participant expressed the concept of appropriateness: "There is a place to be funny or sing, and there is a place where you need to be quiet and do your work." Selection of social skills was a perplexing topic for many in the group. A participant who understood appropriate social behaviors with 1 group may be inappropriate with another group observed, "If I am with my friends, they don't care how I act as much as adults."

The components of the question involved consciously selecting social skills from the medley of possible social skills available, relating the skills or combination of skills appropriately to the people, place and activity, and considering the effect the performance of the selected skills exerted on another's behavioral responses. This was a complicated question. The protocol required clarification and concrete examples as a frame of reference in order for many of the participants to respond. The environment guided participants in how they acquired social skills, in their concern for how their skills were perceived by others, how their social skills use influenced others, and how the environment influenced their misunderstanding of others. Their comments related to the environmental determinant because the comments involved the people and places that surrounded the participants.

The participants' relationship to the social and physical environment suggested they were directed more by their physical environment in their examples, such as a time and place for everything. The participants' comments also implied their use of different social skills would produce different types of social feedback in the form of others' responses to them. The feedback would stem from environmental stimuli such as

nonverbal social cues. Participants expressed their understanding of the concept of appropriateness or matching the social skills use to the social cues provided by the environment. Their comments provided the view that others would react positively or negatively to them if they used appropriate or inappropriate social skills. Yet, in contrast, they did not believe that other people influenced their choice of social skills. Participants espoused their independence from society's influence in bravado statements, though they reported following the guidelines when concrete examples were provided.

Protocol Question #8: Give an example of a social situation when you have misunderstood someone else.

The participants related times they misunderstood another person because they did not attend to environmental stimuli. They commented: "A time I misunderstood someone . . . ." "It was with my friends and I didn't understand." "Well, I was at church one day and someone told me to do something and I didn't do it. The next day when I came, I got really mad at that person, and I said, 'Why'd you make me do that?' He put me in charge every time, and I'm just going to ignore you now." And I had misunderstood that person. That person was really trying to say something else to me. I misunderstood them because I was in a hurry to get back where I was." "My brother, I misunderstand him a lot because he's really complicated. Because he wrestles, he's always serious. There will be times when he'll get really serious and focused or something, and then I can't even talk to him. And then, like he was talking about him losing a competition. 'Yeah, this kid was like throwing me on my head,' and I started laughing. He was like, 'It's not funny.' And he threw a shoe at me because I thought he was kidding around." "When my friend invited me to her birthday party, and like she

said, ‘You can’t go.’ I thought that she was mad at me, but apparently somebody died in her family, so they cancelled the party.’” Participants misunderstood the other person because they did not attend to environmental stimuli, such as directions, details from another person, or a person’s emotional state. In the party cancellation instance, the social environment did not provide the details necessary for the participant to understand.

Participants reported being confused in social interactions. They remarked: “I was talking to a friend and she got mad. I was trying to joke with her and she got really mad at me. But I didn’t know that she was very down at that time and so I took it very seriously, and I thought that maybe she was really mad at me for something that I did. But I wasn’t really sure. I didn’t know what made her angry.” “I misunderstand her [friend] a whole bunch when it is one of those situations. I don’t really know what she is saying, like.” “Sometimes I think, ‘Do they really mean it?’ and they really don’t. And sometimes I’ll get mad, but then they come to talk to me, and they’ll say, ‘I didn’t mean it.’” [Let’s go back to a situation where you have misunderstood someone else.] “‘I really don’t think it has happened. If it did, I probably didn’t recognize it.’” “Like when they’re making a joke, I thought they were being serious, and I got mad at them. I thought they were making fun of me.” “I was trying to help someone, and they thought I was trying to grab something.”

Participants did not attend to social cues provided by their social environment, and so they did not obtain the necessary information to interpret the situation. Nonverbal social cues such as facial affect and body language provide strong information, but if it is not perceived, the information is not communicated for cognitive

processing. Participants reported being confused by what they did to precipitate the other's anger. Students sometimes did not know if the other person was genuinely angry or only teasing them. Environmental information that was not received or understood by the participant resulted in misunderstandings. Some participants maintained they had never misunderstood another person. "[Tell me a time when you have misunderstood someone else.] "I don't think there has been a time. No, not really." "That is kind of hard to think of. Not that I know of." These participants' comments suggested cognitive confusion, limited self-reflection, or an inability to verbalize the misunderstanding. These 2 rationales indicate a problem in cognition and self-reflection or a disruption in the behavior determinant.

The source of a misunderstanding may result from a combination of factors rather than a single cause. Several participants misunderstood someone because they failed to attend to cues from both their social and physical environments. In some of their examples, their social environment consisted of a person employing humor and their physical environment featured food. The students reported: "When I was really, really little, my grandfather went to go get donuts and he said I couldn't have any. I started crying and walked off. And he was just joking." "She had a pizza in her hand and then, I was making a joke out of it. I was just telling her a joke and she dropped her pizza and it flipped over and it went everywhere. She goes, 'You made me lose my pizza.' And then she comes back later and goes, 'I was joking.' I went like, 'You scared me half to death!' I thought she was going to kill me. I was like, 'Oh my God, I thought you were going to kill me!'" "I was with my brother a couple of years ago. We were at Disney Land and we were running around and he threw water on me, like he was trying

to be funny. I had been talking to my dad about, 'What would you do if someone threw water on you?' He [brother] came up behind me and throws water on me. So then I pushed him down because I was really mad. And then he got up and said, 'Hey, that was just a joke' and so I was mad at him. And then he told me it was just a joke and I kind of realized why he did it."

When people came together, food is frequently a part of their physical environment. Congregating increases the opportunities for social interaction within their social environment. The increased social interaction with 2 sources of environmental stimuli to be discerned increased the opportunities for misunderstandings. In the instances reported, the participants later realized the source of their conflict and why the misunderstanding occurred. The comments from the participants indicated they did not successfully elicit pertinent information from their environment, which resulted in a misunderstanding.

The participants conveyed a sense of the importance of the environment, and the information stimuli it provided. Confusion occurred in attending to nonverbal information and other social cues present in the environment. The students' comments provided an indication of this populations' perception of social interaction from the environmental determinant. The exploration of the environmentally related questions provided insights into their understanding of the environment. Together the snapshots rendered a detailed composite of this population's perceptions of themselves. The composite suggested that the participants were conflicted in their social understanding of the cues offered by different environments.

Summary of interview data

The interview protocol probed the students' understanding of social skills by delving into questions related to each of the 3 components of reciprocal interaction. First, the cognitive determinant explored the participants' ability to apply consideration of the situation and others in their responses. Students provided examples of reflection in discussing their motivations for beliefs and behaviors. Their self-regulation was exhibited in explaining their attempts to accomplish a goal or to understand a misunderstanding. Forethought was exemplified when participants predicted future consequences of their proposed actions. Their vicarious capability was demonstrated by their recollections of observational learning. All of these cognitive processes revealed the participants as active processors of information rather than meager recipients of stimuli and demonstrated the nature of the cognitive determinant.

In addition, the behavioral determinant was explored through a protocol to reveal the behaviors participants performed to decipher and resolve misunderstandings in social interactions. The responses of the respondents revealed strategies that ranged from taking no action to communicating with the other party until resolution occurred. The participants understood consequences resulting from their behavioral outcomes. Recognition of future consequences propelled most participants to employ a course of action to mediate negative repercussions from the misunderstanding. Some participants learned their behaviors from observing others, and others learned from directly participating in the reconciliation. Participants' comments revealed their understanding of behavior reinforcements from others as an incentive to solve conflicts. If the other person remained angry or would not accept peace, the participant applied this negative reinforcement to his or her own behavior and decreased use of the failed

strategy. If the other person in the conflict explained, accepted the participant's apology, or continued to remain a friend, the positive reinforcement increased the participant's use of the successful problem-solving strategy. The students claimed they learned from past experience and used those experiences, whether positive or negative, in subsequent interactions.

The environment formed the 3rd component of Bandura's reciprocal interaction. The participants' perceptions concerning their environment were explored and probed through several protocols. Participants reported how they obtained information from the environment ranging from "I don't know," to comprehensive explanations of information constantly supplied by both the physical and social environment. The environment protocol resulted in some confused and uncertain responses. All of the participants were capable of cognitively interpreting when an error occurred because of another's behaviors. They recognized they had made a mistake. Their confusion surfaced when determining what clues, patterns, or signals they did not attend to in their environment, or if they had attended to inappropriate environment stimuli. In recalling the incidents, some participants still could not identify what environmental hint or indications they neglected.

Social Skills Rating System (SSRS) data.

The Social Skills Rating System (SSRS) instrument measured social competence as noted by parents, teachers, and students (see Appendix C for the student, teacher and parent forms of the SSRS). The 3 forms of the SSRS consisted of lists of statements about the student. The 3 sets of scores provided a composite picture of the student with regard to social competence. To address each research question regarding students', teachers', and parents' perception of student social use, each data

source was examined separately and then comparatively. The comparison groups were: student/teacher, student/parent, and parent/teacher. The various groups are presented in subsequent sections of this chapter. Findings from the comparison of the 3 score sets revealed patterns of social competence.

In the student form of the SSRS, the student circled 0 if the specific statement *never applied* to him or her, 1 for *sometimes applied*, and 2 for *very often applied*. There were 39 questions on the student SSRS, 30 on the teacher, and 40 on the parent form. The scores from each statement were then totaled for raw scores of the student, teacher, and parent forms of the SSRS. Raw scores were calculated and converted to *z* scores so the scores could be compared between the various SSRS forms. *Z* scores provided a means by which to standardize rankings from all forms. Consequent to this procedure, all forms were reported with a mean of 0 and a standard deviation of 1.

The student form of the SSRS is a self-reporting instrument (see Appendix C for the student form of the SSRS). The instrument reflected how the student rated himself or herself on the following criteria: getting along with teachers, the degree to which the student perceived himself to be accepted by others, and how well he believed he functioned in an academic setting (American Guidance Service, 2000). These abilities were explored in statements concerning behavior in an academic setting, cooperation and empathy, and self-control and assertion. The scores from each statement were then totaled for a raw score. Student data are reported in Table 1 as both raw and *z* scores.

Table 1

Participants' Raw and z Scores on the Student Form of the SSRS

Participant	Raw Score	*z* Score
1	62	1.95
2	56	1.17
3	53	.78
4	36	1.43
5	37	-1.30
6	60	1.69
7	49	.26
8	55	1.04
9	42	.65
10	54	.91
11	44	.39
12	54	.91
13	48	-.13
14	51	.52
15	46	-.13
16	53	.78
17	49	.26
18	56	1.17

(*table continues*)

Table 1 (*continued*).

Participant	Raw Score	*z* Score
19	62	1.95
20	56	1.17
21	55	1.04
22	44	- .39
23	39	-1.04
24	51	.52
25	62	1.95
26	60	1.69

Using the guidelines provided by the SSRS (American Guidance Service, 2000), a behavior level of below average described the students assessed who ranked below 39 as a raw score. These students viewed themselves as having below average social skills overall. Only 1 student out of 26 ranked herself below average in social skills use. Scores between 39 and 57 described students who had average overall social skills use. Seventy-three percent (19) of the participants evaluated their social skills use within the average range. Nineteen percent (5) of the participants assessed themselves as above average in social skills. A score over 57 indicated above average social skills use. More than 90% of the participants judged they were average or above average in social competence on the student form of the Social Skills Rating System.

Item analysis of the student SSRS was performed (see Appendix D for Item analysis of student SSRS). Every statement represented a potential 52 points across

26 respondents. The most highly rated statements with raw score of 41 or higher were examined for content. Table 2 shows that the 5 statements in which participants rated themselves the highest concerned friends and social interactions with friends.

Table 2

Highest Ranked Items by all Participants on the Student SSRS

Item #	Raw Score	*z* Score
29	46	2.25
13	45	2.46
25	42	1.93
23	42	1.93
1	41	1.75

Item # 29 was the highest ranked statement of all 39 statements. Twenty-three out of the 26 participants stated they very often support friends when they have been unfairly criticized. Advocating for a friend demonstrated a conflict situation, but one in which the student was not a participant in the original clash. This item indicated that students strongly believed they had friends and that they were loyal to their friends under adverse conditions. This statement represented the cognitive determinant because supporting friends and unfair criticism both involved cognitive interpretations and assessments. Item #13 was the 2nd most highly ranked statement. The 26 participants generally believed they not only accomplished their homework, but completed it within prescribed time limits. This statement represented the behavioral determinant. Item # 24 indicated most participants perceived themselves to be friendly,

and indications of this perception represented the behavioral determinant. Another highly rated statement was item # 23 where most participants reported they complimented the opposite sex. This item also was aligned with the behavioral determinant. The last of the most highly rated statements, item # 1, indicated that the majority of the participants believed they not only had friends, but made them easily. This was a cognitive assessment. In the highest rated items, 4 of 5 related to interaction with friends.

These 5 items reflected the participants' common perception that they had friends to whom they were loyal, were punctual in their assignments, and were friendly to opposite sex peers. This finding indicates confidence in their self-concept and interactions with their peers. In classifying the 5 ranked items, these students operated most effectively in the behavioral determinant (3 items) and the cognitive determinant (2 items).

Table 3

Lowest Ranked Items by all Participants on the Student SSRS

Item #	Raw Score	*z* Score
27	19	-2.11
28	19	-2.11
22	22	-1.58
34	23	-1.40
3	24	-1.23

(table continues)

Table 3 *(continued).*

Item #	Raw Score	*z* Score
3	24	-1.23

The 5 statements in which participants ranked the lowest concerned interactions with adults. All of the statements also involved a conflict situation. Item # 27 was the lowest rated statement out of the 39 statements. The majority of the participants believed they had a difficult time accepting punishment from adults without becoming angry. This item represented the cognitive triad. Responses on item # 22 suggested most of the participants did not terminate conflict with their parents in a calm manner. This item occurred in the cognitive determinant, since assessment of emotion requires subjective interpretation. The 3rd lowest ranked item, # 34, reflected that these participants did not believe they stayed calm when they received criticism from their parents. This item was also in the cognitive determinant. Item # 10 revealed that most participants argued or fought when disagreeing with adults. This item was also in the behavioral determinant. The 5th lowest ranked item out of all items, # 3, reflected that when participants were physically threatened by other children, they were reluctant to ask for adult aid. This response was in the behavioral determinant. These 5 lowest ranked statements revealed participants perceived poor interactions between themselves and their parents or adults or both in conflict situations. The students were cognizant of the situation and reported such behaviors as “getting mad,” fighting, and arguing in their interactions with adults. Four of the lowest ranked statements were in the cognitive determinant and 1 in the behavior determinant.

Comparison of interview and student SSRS data.

Three points of comparison emerged between the interview and student SSRS data sources. First, in the interview data, anger, annoyance, and "getting really mad" were emotions frequently reported. The participants cited "getting mad" themselves as well as their interpretation of these emotions in others. These emotions were also prominent in the lowest ranking student SSRS items, such as "getting mad" and [not] staying calm in a fight. Behaviors implied anger in SSRS items, such as fighting or arguing. The origin of the participants' anger was not always a misunderstanding, but erupted from receiving criticism or punishment. Anger and "getting mad" emerged as troublesome areas in the participants' social interactions.

The second comparison point involved interactions with adults. Such interactions with adults were perceived as a participant's last resort both in the interview data and the student SSRS data. Participants revealed their hesitation to consult adults for aid in unraveling misunderstandings. Nearly half the participants would not consult an adult for any reason or under any circumstances, saying, "I don't really like them [my parents] getting into my social life because they're like kind of embarrassing." Adult help would be necessary only if it were "really bad." In SSRS data, even if the participant were physically assaulted, he or she rarely asked for adult help. The participants' statements ranked interaction with adults to be avoided even in the face of violence.

The third point between interview and SSRS data contrasted participants' perceptions on the topic of friends. SSRS data reported confidence in interactions with peers. Examples in the most highly rated items, # 25, 23, 1, were making friendly gestures to others, complimenting the opposite sex, and making friends easily. Expressions of social confusion, lack of confidence, and nervousness surfaced in the

interview data. One participant related wanting to talk to a friend, but the friend was with someone in a more popular group, so the participant did not talk to the friend. Another recounted the friendly remarks traded with close friends, but the noticeable weak response when she tried to banter with someone whom she perceived as more popular. Another revealed she was not in the popular group, but she would rather have friends who were not the most popular because they were nicer. There was a conflict in the data between their words in the interviews and their choices of strength as reflected in the ranking of the student SRSS. Participants reported their confidence in interactions with peers in general on the SSRS. Probing and exploring in the interview allowed participants to voice instances of social hesitation that did not characterize their overall interactions. This highlights the value of a mixed methods study by allowing a more complete perspective of the participants' social interactions.

How do teachers of 7th grade students with learning disabilities perceive them as social beings?

Teachers of the participants completed the teacher form of the SSRS. The form consisted of 30 items regarding the participants' behaviors, such as completing work on time, supporting others when they have been wronged, the ability to compromise in conflict, the ability to express feelings appropriately, and social interaction with the opposite sex. The general themes in social skills use were of appropriateness, cooperation, and acceptance, which are ranked by the teacher concerning the participant. The participants performed well in inclusive social skills behaviors and in classroom routines. Behaviors such as volunteering to help a classmate or accepting another's ideas in a non-conflict situation were skills for which they received moderate

rankings. They were not ranked as highly in handling emotions, conflict, and loyalty in the face of opposition.

Table 4

Teacher Raw and z Scores on the SSRS, by Participant

Participant	Raw Score	*z* Score
1	45	.39
2	34	-.47
3	23	-1.33
4	44	.31
5	42	.16
6	54	1.09
7	28	-.94
8	46	.47
9	43	.23
10	46	.47
11	30	-.80
12	34	-.47
13	52	.94
14	24	-1.25
15	31	-.70
16	46	.47
17	19	-1.64

(*table continues*)

Table 4 (*continued*).

Participant	Raw Score	*z* Score
18	44	.31
19	58	1.41
20	41	.08
21	36	-.31
22	50	.78
23	29	-.86
24	57	1.33
25	38	-.94
26	58	1.41

The raw scores of the teacher's rankings of their students' use of social skills ranged from 19 to 58. The highest possible ranking was 60, with 19 suggesting a participant had very poor social skills use as perceived by his or her teacher. The teacher did not believe the student was inclusive, handled emotions or conflict well, or interacted in a positive way with peers. The high ranking of 58 indicated the student was perceived by the teacher as being inclusive, was appropriate in conflict situations, expressed emotions in an appropriate manner, and interacted well with peers and adults. Teachers' ratings of students social skills use produced raw and *z* scores that suggested a wide range of variability, *z* -1.64 to *z* 1.41. The standard deviation of a *z* score was 1, with a mean of 0, so the highest and lowest student rankings were more than 3 standard deviations apart. The participant group included students who the

teachers believed were very capable in social skills use, and also students whom teachers perceived as socially incompetent in many areas.

An item analysis was conducted on each item in the teacher form of the SSRS (see Appendix D for item analysis of teacher SSRS). Table 5 lists the item, raw score, *z* score and statements of the 5 highest ranked items.

Table 5

Highest Ranked Statements by all Participants on the Teacher SSRS

Item #	Raw Score	*z* Score
1	42	3.07
4	42	3.07
23	42	3.07
16	39	1.92
22	39	1.92

Teachers perceived their students to experience positive social interactions in some areas. Items # 1, 4, and 23 all received equally high teachers' rankings of all the 30 items. All 26 of the participants in item # 1 were ranked by their teachers as producing correct homework. Sixteen students always did so, and 10 produced correct homework some of the time. Producing correct schoolwork represented the behavioral determinant. This item strongly indicated that teachers perceived their students to be successfully conducting the primary responsibility of a student, which is to produce quality schoolwork. This item also suggests that the students were behaving

responsibly in working productively outside of the teacher's supervision in an academic endeavor.

Item # 4 was the 2nd equally highly ranked item. The teachers perceived all but 1 of the participants as initiating conversations with peers. This item is also representative of the behavioral determinant, as an observable motor response. The item indicates teachers perceived their students to have sufficient confidence to talk to others, and to even initiate the social interaction.

Item # 23 was the 3rd equally highly ranked item. Teachers perceived their students to control their tempers in conflict situations with adults. This item represents the behavioral determinant, because it was an observable behavior of the participant that the teacher ranked. This item also suggested that students had sufficient self-regulation to control their observable behaviors, despite conflicting cognitive interpretations of the conflict.

The 4th highest item, # 16, was ranked with *some of the time* or *all of the time* for all 26 participants. These teachers stated their students received praise or compliments from their peers, which was a positive use of social skills. Not only did the students receive praise, but they reciprocated the implied compliment by acknowledging it. This item represented the bidirectional nature of social interaction, and was located in the behavioral determinant as an observable behavior.

The last of the 5 highest ranked items was equally ranked with # 16. The teachers reported their students participated in activities and behaved inclusively by inviting others to join the activity also. Similar to item # 16, this item exemplified the behavioral determinant as an observable motor response. The item suggested

teachers viewed their students as social beings who not only participated in an activity, but actively solicited others to expand the social interaction.

All 5 of the highest ranked social skills uses by the participants were representative of the behavioral determinant. The participants performed observable responses that were positive things to do. These items were not subject to the teacher's cognitive interpretation. The behaviors resulted from the participants' cognitive choice to perform the specific motor responses. The participants attended to environmental stimuli which they cognitively interpreted and responded to by performing motor responses. Their observable behaviors exemplified 1 component of Bandura's reciprocal interaction.

The lowest ranked items were sorted by item number, raw score, *z* score, and statement and are presented in Table 6.

Table 6

Lowest Ranked Statements by all Participants on the Teacher SSRS

Item #	Raw Score	*z* Score
28	25	-1.96
24	25	-1.96
27	25	-1.96
10	28	-1.43
15	30	-1.07 .

Teachers ranked their students lowest in item # 28, when students were diverted from their work. Teachers perceived their students were unable or unwilling to focus on

homework when a peer was acting out. This item involved the behavioral determinant. Others altered the environment, which impacted the student's behavior. Item # 24 reflected teachers did not believe their students defended peers who were unjustly disparaged. This item was an environment determinant because it involved the human or physical surroundings of the student. In item # 27, teachers reported their students were not neat and tidy with their academic materials, an observable response that was located in the behavioral determinant. The next low ranked item, # 15, involved a conflict situation when the student was unable or unwilling to compromise. The issue was not who was correct or responsible in the conflict, but the student's lack of flexibility in a situation needing compromise. This item represented the cognitive determinant because it required the teacher's subjective assessment. Three out of the 5 lowest ranked items concerned conflict situations. Teachers did not perceive their students successfully interacted in scenarios involving conflict. Most of the lowest ranked items, 3 out of 5, fell into the category of behavioral determinant. These data indicate that overwhelmingly, teachers perceive students within the behavioral determinant, approximately 2 standard deviations above and below the mean. These data suggest that behavioral aspects of socialization are relevant to teachers.

How do parents perceive their children with learning disabilities as social beings?

To include another dimension to the participants' social skills use, parents completed the parent form of the Social Skills Reporting System. The statement rankings were totaled and analyzed. The raw scores of the parent form SSRS were transformed to *z* scores for comparison purposes. Results were reported in Table 7.

Table 7

Parent Raw and z Scores on the SSRS, by Participant

Participant	Raw Score	*z* Score
1	67	1.18
2	61	.47
3	66	1.06
4	66	1.06
5	58	.12
6	71	1.65
7	55	-.35
8	40	-2.00
9	53	-.47
10	51	-.71
11	60	.35
12	64	.82
13	46	-1.29
14	55	-.24
15	64	.82
16	65	.94
17	59	.24
18	49	.94

(*table continues)*

Table 7 *(continued).*

Participant	Raw Score	*z* Score
20	69	1.41
21	49	-.94
22	36	-2.47
23	44	-1.53
24	54	-.35
25	61	1.47
26	52	-.59

The items involved household routines such as telling the appropriate person in the event of an accident, helping around the house, attempting a chore without asking help, maintaining a clean room, and controlling angry emotions in conflict. Other items included inviting others to the home, refusing unreasonable requests, and showing an interest in a variety of things. Some items, such as [my child] is liked by others, required cognitive assessment in order to be ranked. Parents ranked their children's social skills use in raw scores from a 36 to a 69. The participant ranked with a 36 raw score was perceived by his parent to have very low social skills use in all areas. The parent who ranked her child with a raw score of 69 perceived the child's social skills use was very competent.

An examination of the *z* scores revealed over 4 standard deviations difference between parents' ranking of their children's social skills. An example is participant # 6, with a *z* score of 1.65, and participant # 22 with a *z* score of -2.47. To explore the

differences in ranking between the participants, an item analysis was conducted of the 40 statements in the parent form of the SSRS. Potential scores ranged from 0 to 80.

An item analysis was conducted on each item in the parent form of the SSRS (see Appendix D for item analysis of teacher SSRS). Table 8 lists the item, raw score, *z* score and statements of the 5 highest ranked items. The 5 items with the highest and lowest ratings on the item analysis were examined.

Table 8

Highest Ranked Items by all Participants on the Parent SSRS

Item #	Raw Score	*z* Score
38	49	1.79
4	46	1.64
36	47	1.49
37	45	1.19
29	45	1.19

Four of the 5 most highly ranked items were observable motor responses and so represented the behavioral determinant. Item # 37 required a cognitive assessment based on observable behaviors such as being invited to activities, having friends to their home, and interacting with peers. The parents generally perceived their children in a behavioral way. The parents did not rank their children highly on matters of adult interaction or conflict situations. The majority of participants' parents reported their child waited for his or her turn, which was in the behavior triad. Participant's most highly ranked items were in the behavioral determinant, with 1 item in the cognitive

determinant. Behaviors resulted from both cognitive choices of action and perception of environmental stimuli.

The 5 lowest ranked items from the parent form are shown in Table 9. The information in the table reveals that parents did not rate their children highly in conflict situations, interaction with adults, self-control, or being helpful.

Table 9

Lowest Ranked Statements of all Participants on the Parent SSRS

Item #	Raw Score	*z* Score
15	15	-3.28
2	18	-2.83
3	23	-2.09
28	24	-1.94
11	26	-1.64

Parents ranked their child the lowest out of 40 statements on items such as room neatness and helping on household tasks. All of the items were represented by the behavioral determinant as observable motor responses. The children performed behaviors that were correct. They attended or solicited environmental stimuli, cognitively processed the information and selected a behavior to perform, demonstrating reciprocal interaction. Parents did not report dissatisfactions with their children in items involving the cognitive or environmental determinants. Parents did not perceive conflict situations or adult interaction as problem areas.

Parents did not perceive their children to be either very capable or very incapable of dealing with conflict situations, interaction with adults, or aspects of emotional self-control. Evidence of high or low rankings in these areas were not noted in the 5 highest and lowest items on the parent SSRS. The rankings centered on household chores and basic routines rather than aspects of social interaction. The majority of the participants' parents believed their child was liked by others. In parents' rankings of the 5 high and 5 low items, 9 items represented the behavioral determinant. These findings indicate that parents, no matter whether they rated their children high or low, saw their children through the lens of the behavioral determinant primarily.

Comparisons between student and teacher SSRS

Teachers generally perceived their students to be skilled in social interactions, a perception also shared by their students. Teachers believed their students controlled their tempers with adults, while the students reported they did not control their tempers with adults. Students were aware they encountered difficulties in conflict situations, particularly involving anger management. Teachers did not find problems with participants' expression of unhappy feelings or questioning of rules, but noted deficiencies in the *appropriateness* of the manner in expressing the feeling or questioning the rules.

An examination of the highest and lowest item ratings on the student and teacher forms of the SSRS revealed the students' most highly rated of the 39 items was supporting friends when they have been unfairly criticized. However, teachers rated participants in this same statement the second to the lowest of all 30 statements on their form. There was a vast difference in student and teacher perception of students

supporting their friends when the friend has been unjustly criticized. Comparison of the student and teacher SSRS rankings exposed another difference in perception. The students rated the statement of not becoming mad when adults punish them as the lowest out of 39 statements. However, the teachers most highly rated item concerning the participants was not losing temper with adults when there is conflict. Teachers and students reported very different perceptions of the students' supporting friends from unjust criticism and control of angry emotions. Standing up for friends and observable evidence of control of emotions represented Bandura's behavior category. In contrast, the subjective cognitive choice of not "getting mad" was in Bandura's cognitive determinant. Teachers rated their students third lowest out of 30 statements in putting materials away. This item occurred in the behavioral determinant. Parents and teachers considered tidiness more of a problem than did the participants.

Teachers produced low rankings for participants' appropriateness in expressing disagreement. Appropriately expressing feelings and questioning rules both received low ratings. Expressing feelings when wronged or questioning possibly unfair rules was not the problem. The method of expressing the disagreement was the negative element in the interaction rather than the feelings themselves. Lower ranked items in the student SSRS also entailed the method or manner of disagreeing as the source of the problem. Examples were remaining calm, not becoming angry, fighting, or arguing. Appropriately interacting in a conflict situation was a relatively low participant skill according to both the participants and their teachers.

The student and teacher forms of the Social Skills Reporting System examined academic environment behaviors in student/peer/teacher interactions. The 2 reporting

systems were not composed of identical questions. The student and teacher SSRS had eleven analogous statement sets had in common (see Appendix D, Table 31, for item analysis of statement sets with greatest divergence in student and teacher SSRS). In Table 10, the similar statement sets were examined for points of commonality.

Table 10

Item Analysis of Analogous Statements in Student and Teacher SSRS

Source	Item #	*z* Score
S	13	2.46
T	19	.00
S	18	.00
T	15	-1.11
S	19	-1.23
T	24	-1.66
S	23	1.93
T	28	-2.03
S	26	1.40
T	21	.74
S	29	2.63
T	25	.74
S	30	1.05
T	22	.55

(table continues)

Table 10 *(continued).*

Source	Item #	*z* Score
S	34	-1.40
T	23	1.11
S	34	-1.40
T	11	-.74
S	35	1.40
T	29	.37
S	38	1.23
T	4	1.11

Across the 11 analogous statements sets, the teacher used all the other students as a frame of reference in providing a cognitive interpretation of the general group norm. Consequently, the teacher observed and interpreted the participant's behavior compared to all the other students. The student relied on his or her own cognitive process to actively construct his or her own interpretation of reality. The different frames of reference of the people performing the evaluation influenced their response to the statements.

The data in Table 10 specifies points of agreement between teachers and students. In student item # 19 and teacher # 24, both negative student and teacher rankings, *z* scores -1.23, and -1.66, revealed this item set was perceived by both teachers and students as a weakness in social understanding with regard to ignoring class distractions. In student item # 38 and teacher item # 4, close agreement occurred

between students and teachers in their perceptions. The students ranked item # 38 with a *z* score of 1.23, and teachers ranked item # 4 with a *z* score of 1.11. Both of these analogous statement sets represented the behavioral determinant because there was no subjective interpretation.

Other analogous statement sets showed disparity between students' and teachers' perceptions. Separated by nearly 4 standard deviations, student item # 23 and teacher item # 28 were opposites in students' and teachers' perceptions. Students highly ranked their complimenting of members of the opposite sex with a *z* score of 1.93. Teachers ranked the same item low with a *z* score of -2.03. This range of 4 standard deviations reflected that students perceived themselves as aptly interacting with members of the opposite sex, but teachers who relied on their observations of the behavior did not rank them as interacting well. Giving compliments was a verbal behavior, but what constituted a compliment entailed a cognitive conjecture.

In another example of difference in student and teacher rankings, student item # 29 had a *z* score of 2.63: In contrast, the teacher version of the same item, # 25, had a *z* score of .74. In this item set, students' and teachers' perspectives were very different because the students ranked the item very highly, and the teachers awarded the same item a comparatively low *z* score of .74. The students' ranking resulted from cognitive assessment of what entailed standing up for a friend, which could range from a sympathetic look to physical assault. Unfair criticism also requires a cognitive assessment depending on whether the student considered the friend was correct or incorrect, or whether the criticism was a misperceived helpful instruction. This item is rife with social cues, body language, and reflection, and so involves the environment

and cognitive processes. The teacher must rank the same statement from the participant's observable motor responses. Also, the teacher's assessment of what is unfair, what constitutes criticism, and what is a supportive behavior may differ markedly from the participant who is ranking the same scenario. The teacher is using the behavioral determinant and also the cognitive determinant. Different perspectives and different determinants are used to rank this statement. There is a great disparity in the resulting *z* scores.

The largest student and teacher ranking discrepancy was between student item # 34, *z* score of -1.40, and teacher item # 23, with a *z* score of 1.11. Becoming angry was an emotional state interpreted in the cognitive process that did not necessarily result in an observed behavior and can only be judged by overt student behaviors observed by the teacher. The students' cognitive assessment of their emotions indicated their ranking of the item, which was in the cognitive determinant. Students saw themselves as inept at cognitively processing what was needed to deal with adults. The behaviors observed by teachers suggested otherwise, therefore creating the disconnection between teacher and student perception of the same phenomenon.

Bandura (1986) theorized that social cognitive learning was the dynamic, continuous reciprocal interaction between the determinants of cognitive processes, behavior, and the environment. The students based their ranking in the SSRS statements on their cognitive processes, and the teachers based their ranking on observation and interpretation of the students' behavior. Observable behaviors of motor responses were the only way teachers were able to assess the situation. The different

perspectives or frames of reference of the students, teachers, and parents explained the difference in the rankings, agreements, and disagreements across the items.

Comparisons between student and parent SSRS.

None of the lowest ranked statements involved conflict with parents over punishment, criticism, or differences of opinion. In contrast, all of the students' lowest rated statements involved these types of conflict. Parents did not believe interactions with them entailed conflict, while their children perceived conflict to be their lowest ranked areas of behavior. Low scoring statements in parents' ratings included housekeeping areas such as a clean room and belongings neatly stowed. In themselves, these activities did not involve interaction or conflict. Social interaction and conflict evolved when the desired activity failed to occur unless a parent intervened.

The majority of the parents believed others liked their child. This statement was 4th highest out of 40 items ranked by parents. In the parent SSRS, this was item # 37, with a *z* score of 1.19. Students ranked making friends easily the 5th highest out of the 39 behaviors. In the student SSRS, this was item # 1, with a *z* score 1.75. Both parents and their children believed the child was liked and accepted by others. None of the statements on which parents rated their children most highly involved conflict situations or neatness. Getting along with adults was not specifically targeted in the 40 statements. Current research literature asserts parents and their child with learning disabilities perceive the child to be deficient in making friends and is less liked than other children. The findings from the student and parent SSRS do not support this perspective.

Comparisons between teacher and parent SSRS.

The statements in the teacher form of the SSRS were not echoed in the parent form, but general concepts in both forms were similar. Teachers ranked their students higher on social interaction type behaviors than did the parents. In contrast, parents ranked their children highest on home routines rather than on social interaction behaviors. Teachers also ranked their students lowest in areas of social incompetence. In contrast, parents ranked their children lowest on aspects of household practices. Parents and teachers consider tidiness more of a problem than do the participants. Students, teachers, and parents may hold different perspectives on the same issues.

Individual differences in scores between students and their parents ranged from a *z* score of .02 to fifty times that amount, encompassing more than a standard deviation of difference. Six of the parents and their child's rankings were very close, within .25 standard deviation between them. This result indicated they shared similar perceptions of the child's social skills use. Analogous statement sets were identified between the student and parent SSRS, and a comparison was made on the entire group's scoring for the student and parent SSRS.

Table 11

Item Analysis for Analogous Statements for all Participants in Student and Parent SSRS

Item	*z* score
S – 11	.70
P – 13	1.04
S – 14	.70

(table continues)

Table 11 *(continued).*

Item	*z* score
P - 15	-3.28
S – 16	1.23
P – 4	1.64
S – 26	1.40
P – 40	.15
S – 31	.18
P – 7	.15
S – 38	1.23
P - 1	.00

Analogous statements sets revealed both differences and similarities in rankings between students' and parents' perception of the same item. The student and parent pairs with more than 1 standard deviation from the mean in their SSRS scores were examined through the use of similar statement sets from the student and parent SSRS. The variability in student and parent responses to the paired statements was much greater than variability between the same statements for the entire group of participants. Both students and parents ranked the student the same concerning the student's use of free time. This was student item # 31, with a *z* score of .18, and parent item # 7, with a *z* score of .15. The item set concerning free time represented the cognitive determinant, for which an evaluative, cognitive assessment was made concerning "good" and "acceptable" use of time. Another item set roughly equivalent in student and

parent ratings was student item # 16 with a *z* score of 1.23 and parent item # 4 with a *z* score of 1.64. The 2 items concerned involvement in activities and clubs. This set belonged in the behavioral determinant because the item was not a subjective judgment for either the student or the parent.

Several item sets were very different in their student and parent ratings when their *z* scores were compared. The largest difference in rank position was in student item # 14, with a *z* score of .70 and parent item # 15 with a *z* score of -3.28. The rankings differed by 4 standard deviations. The item was "I keep my desk clean and neat" for the student and "keeps room clean and neat without being reminded" for the parent. This item represented the behavioral determinant. The students' and the parents' perspectives varied considerably on what constituted clean and neat.

Another analogous item set with more than 1 standard deviation between the 2 *z* scores was student item # 26 and parent item # 40. The students ranked the statement with a *z* score of 1.40 and the parents ranked it with .15. This item set occurred in the cognitive determinant and involved cognitive assessment on the part of the student and interpretation of observable behaviors which were then interpreted by the parent. A student who appeared self-confident may have experienced uneasy or nervous emotions in social interactions with friends of the opposite sex. This emotional state may have been unobservable. The rater and his or her expectations, inferences, and interpretations allowed the same scenario to be perceived very differently by the child and parent. For the purposes of presenting a profile of each participant by the 3 forms of the SRSS, Table 12 includes the *z* scores for all 3 forms, by participant.

Table 12

Participant's z Scores on Student, Teacher, and Parent Forms of SSRS

Participant	Student SSRS *z*	Teacher SSRS *z*	Parent SSRS *z*
1	1.95	.39	1.18
2	1.17	-.47	.47
3	. 78	-1.33	1.06
4	1.43	.31	1.06
5	-1.30	.16	.12
6	1.69	1.09	1.65
7	.26	-.94	-.35
8	1.04	.47	-2.00
9	.65	.23	-.47
10	.91	.47	-.71
11	.39	-.80	.35
12	.91	-.47	.82
13	-.13	.94	-1.29
14	.52	-1.25	- .24
15	-.13	-.70	.82
16	.78	.47	.94
17	.26	-1.64	.24
18	1.17	.31	.94

(table continues)

Table 12 *(table continues).*

Participant	Student SSRS *z*	Teacher SSRS *z*	Parent SSRS *z*
19	1.95	1.41	.94
20	1.17	.08	1.41
21	1.04	-.31	-.94
22	-.39	.78	- 2.47
23	-1.04	-.86	-1.53
24	.52	1.33	.35
25	1.95	-.94	.47
26	1.69	1.41	-.59

Figure 1 provides a graphic outlook of the *z* scores noted in Table 12. Discrepancies in agreement among raters on the social skills of the 26 participants were apparent. The figure shows the *z* scores of the participants. Participants # 6, #16, and # 23 had close agreement of social skills use among the 3 data sources. The student, teacher, and parent all shared similar perspectives. Conversely, student # 22 received a relatively high teacher rating above the mean, while the parent ranked the child nearly 2.5 standard deviations below the mean. Students # 8 and # 25 also revealed discrepancy between the 3 views of the child. In # 8, the parent reported the lowest ranking, but in # 25, the teacher ranked the child's social skills use the lowest. For some students, this figure revealed the similarities in the 3 perspectives provided of the child's social skills use. In other instances, there was a dramatic difference in the 3 views of the same child. Students and parents reported the greatest differences in their

scores. Teacher ranking were more moderate, which indicated the extremes may not be representative of that child's social skills use. Most importantly, the chart shows the great diversity in different perspectives.

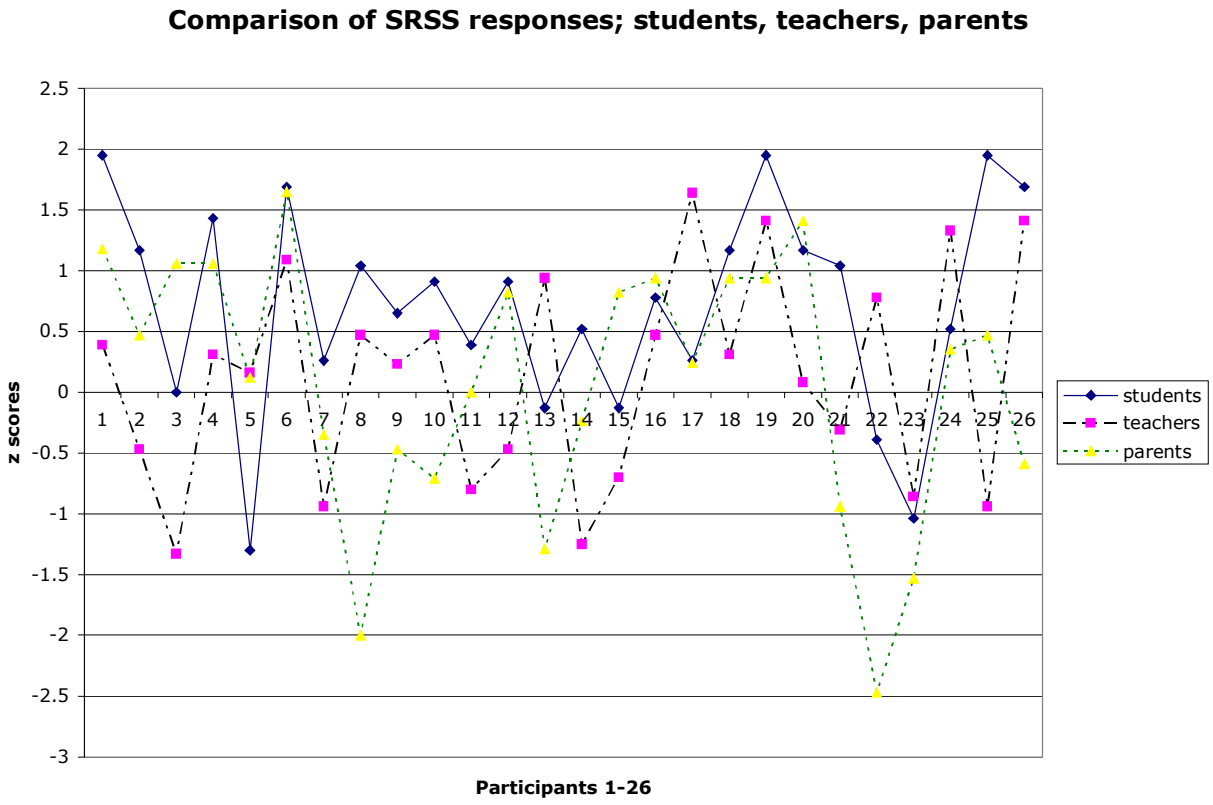


Figure 1. Comparison of SRSS responses: Students, teachers, parents.

The transformation of raw scores to *z* scores for the student, teacher and parent forms of the Social Skills Rating System made comparison between the forms possible, despite different numbers of items, different means, and standard deviations in each form before standardization of scores. The averaged rankings for each form revealed students ranked their social skills at a higher level than did their parents or teachers. Students ranked themselves the highest, and the teachers ranked their social skills use the lowest among the rankings of the 3 forms. Bandura (1986) states, "Self efficacious children tend to attribute their successes to ability" (p. 402). The participants' SSRS

rankings reflect they believe they possess the abilities necessary for social competence. Teachers were evaluators with different frames of reference than the students and did not rank the students' social skills use as highly as did the students. The students used the cognitive determinant for their evaluations, and teachers use the behavioral determinant for their rankings. An examination of the rankings showed great diversity between the rankings of the same participant. Nine of the participants had differences of more than 1 standard deviation from the mean among their 3 *z* scores.

Participants' self-rankings ranged in *z* scores from -1.30 to 1.95, which spanned 3.25 standard deviations. Teachers ranked the students from -1.64 to 1.41, a span of 3.05 standard deviations. Parents ranked their children's social skills with the greatest diversity, from -2.47 to 1.41 in *z* scores. This range in rankings spanned 3.88 standard deviations. The highest ranking among the seventy individual rankings was 1.95, and the lowest ranking was -2.47.

The child with the lowest ranking by a parent, -2.47, was ranked more than 3 standard deviations higher by his teacher with a *z* score of .78. Only 1 student ranked below the mean on all 3 rankings, including his own. The child, parent, and teacher all perceived this child to have lowered social competence. In addition to differences between participants, teachers, and parent's social competence rankings of the student, there appeared to be tremendous differences between various raters' expectations and perspectives. In general, as observed in figure 1, there was considerable discrepancy as to how students, teachers, and parents perceive the same student.

Summary of SSRS: comparisons of student/teacher/parent forms

All 3 forms of the Social Skills Rating System provided a view of the participant's social skills use from the perspectives of the participant, his or her teacher, and parent. Together these views provided a view of the student's social competence. Correlations across all 3 reporting groups revealed a significant correlation between the parent and student SRSS.

Table 13

Correlation Data from Student, Teacher, and Parent Forms of the SSRS

	Student SSRS	Teacher SSRS	Parent SSRS
		(*N* = 26)	
Student SSRS	-	0.274	0.516*
Teacher SSRS	0.274	-	-0.140
Parent SSRS	0.516*	-0.140	-

* $p < .05$

The correlation data revealed that the student's and teacher's perceptions of the student as reported through the student and teacher forms of the SSRS were weakly correlated at .274. In contrast, the parent's perception of the child in the parent SSRS had a moderate correlation of .516 with the student's perception in the student form of the SSRS. As noted in the item analysis of analogous items from student and parent forms, there were both areas of agreement and disagreement between students and parents. The smallest standard deviation occurred in the students' *z* scores from the

student SSRS, and the largest standard deviation, 1.11, in the parents' *z* scores from the parent SSRS.

The interview data painted a detailed word picture of the student's general optimistic image of himself or herself as a social being. The interviews also revealed areas of doubt in what caused participants' social interactions to progress smoothly or become derailed. Anger or "getting mad" was a theme in both the interviews and the student SSRS. The students reported that interactions with adults were difficult, particularly in conflict situations. Teachers generally believed their students were socially competent, but had reservations about their appropriateness in expressions and reactions in conflicted circumstances. Parents revealed great differences in their ranking of their child's social interactions. They generally believed their child was liked, but were most satisfied with the child's adherence to household routines.

Bandura's triad of reciprocal interaction was evident in presenting the composite picture of the child's social interactions revealed by the child, parents, and teachers. Students reported the most confusion in interpreting their environment composed of both people and physical surroundings. The behaviors students performed did not present as many difficulties as did attending to and interpreting stimuli from their environment. The environmental determinant occurred more frequently in low rankings by students than did the behavioral determinant. When a student interpreted a situation and rated his or her responses, the responses did not parallel the responses of adults.

The interlocking determinants of the participants' reciprocal interaction were not always equally reciprocal and bidirectional factors in times of unsuccessful social interaction. The dynamic and continuous interactions of the 3 components of Bandura's

triad were needed for both learning and social interaction. The data revealed that students, teachers and parents perceived the students to be somewhat successful in social settings. Teachers and parents considered the behavioral aspect of the student, while the student considered the cognitive aspect. Bandura's social cognitive learning theory utilized reciprocal interaction among an individual's cognition, behavior, and environment as its cornerstone. The students in their interviews revealed understanding of all 3 factors, demonstrating limited strengths in any of the 3 determinants. SRSS scores suggested that the students' greatest strengths lie in cognition. Their challenge seems to be in the area of reciprocation across the 3 components of the triad. Also, the divide between parents, teachers, and students on the issue of behavioral views of the student denotes a situation that lends itself to missed opportunities for reciprocal interaction.

Is there a relationship between cognitive ability and social competence in 7th grade students with learning disabilities?

Cognitive ability is best measured by a combination of tests, just as social competence is most comprehensively rated by a combination of tests and procedures. Participants' cognitive ability scores were obtained from the testing records of the school where the study was conducted. The participant's IQ was evaluated by the Slosson Intelligence Test® instrument (SIT) (Slosson Educational Publications, Inc., East Aurora, NY, www.slosson.com) and the Wechsler Intelligence Scale for Children® instrument (WISC - III) (Harcourt Assessment, Inc., San Antonio, TX, www.PsychCorp.com) with separate assessments of performance IQ and verbal IQ. Performance IQ was assessed by how the child performed on various tasks that did not require verbal expression, for example the Peabody Picture Vocabulary Test™

instrument (PPVT – III) (L. Dunn & L. Dunn, AGS Publishing, Circle Pines, MN, www.agsnet.com), the Goodenough-Harris Draw-a-Person™ test (D. Harris and F. Goodenough, Harcourt Assessment, San Antonio, TX, www.harcourtassessment.com), and the Bender–Gestalt Test® instrument (L. Bender, Pearson Assessments, Eagan, MN, www.pearsonassessments@pearson.com). These tests required the participant to point to the appropriate picture, draw a person, or indicate direction. None of the tests required verbal expression. Verbal IQ was measured by the Slosson and the Wechsler intelligence tests. These tests had an oral question and answer format over general information, vocabulary, conceptual reasoning, spatial reasoning, analogies, and short term memory. Of the 4 IQ measurements in each participant's evaluation records, performance IQ was considered the most accurate portrayal of that participant's measure of intelligence. Performance IQ did not depend on auditory processing or verbal expression, a component of several LD subtypes. The Slosson test provided a quick estimate of general verbal cognitive ability, but was not the most accurate measurement of IQ (see Appendix E, Table 32 for each participant's performance IQ from the WISC FS, with *z* scores with comparison to other instruments).

Students' performance IQ evaluations ranged from 76 to 126, with a mean IQ score of 101. One standard deviation in the WISC was 85 to 115, so the participants had an IQ spread of nearly 2 standard deviations from the IQ mean of 101. A participant's IQ measurement between 85 and 115 was considered within the average range. About 95% of a sample fell between 2 standard deviations; consequently all of the participants were in the average IQ range.

Table 14

Descriptives of Participants' IQ, Student, Teacher, and Parent SSRS

	Minimum	Maximum	Mean	*SD*
		(*n* = 26)		
Participants' IQ	76.00	126.00	101.00	13.80
Student SSRS	-1.30	1.95	.74	.86
Teacher SSRS	-1.64	1.41	.01	.89
Parent SSRS	-2.47	1.65	.10	1.11

In examining the participants as a group in table 15, there was a very small standard deviation between the groups of scores for the student, teacher, and parent forms of the SSRS. The smallest deviation occurred in the student form. The student SSRS mean was .75, and the minimum and maximum scores fell outside the range of 2 standard deviations. The parent form of SSRS evidenced the largest minimum score by far, at nearly 2.5 standard deviations below the mean.

Data were correlated across each student's 3 Social Skills Rating System scores and his or her evaluated performance IQ. The scores of social competence were derived from the student, teacher, and parent forms of the SSRS (see Tables 1, 4, and 7 for each participant's student, teacher, and parent SSRS scores).

Table 15

Correlations between IQ, Student, Teacher, and Parent Forms of SSRS

	Participant IQ	Student SSRS	Teacher SSRS	Parent SSRS
		(*N* = 26)		
Participant's IQ	-	.198	.119	.039
Student SSRS	.198	-	.274	.516**
Teacher SSRS	.119	.274	-	-.140
Parent SSRS	.039	.516**	-.140	-

***p* < .01, two-tailed.

Weak correlations existed between the participant's IQ and the student, teacher and parent forms of the SSRS. Correlation data obtained from the student, teacher, and parent forms of the Social Skills Rating System and IQ measurements from the school's evaluation records reveal that there was an extremely weak correlation between cognitive ability and social competence in this participant population. This finding indicates that intelligence and social skills use are not related in the participants, perhaps because the participants are all of average or above average intelligence and do not exhibit serious emotional disturbances. Cognitive ability and social competence do not involve the same information processing areas, and so do not exhibit a relationship. The cognitive determinant controls cognitive ability, but social competency is not controlled by the cognitive determinant.

What is the nature of the relationship between the type of learning disability and the type of social incompetence shown by 7th grade students with learning disabilities?

Each participant's learning diagnosis was derived from the school's testing and evaluation records. The 26 participants were diagnosed with 1 of 6 different learning disability categories: reading disability (13), receptive/expressive language disability (5), auditory discrimination disability (1), nonverbal learning disability (NLD) (3), learning difference not otherwise specified (LDNOS) (3), and incalculia (1).

The learning disabilities are defined as follows: *Reading disability* results in poor decoding and/or poor comprehension, poor spelling, and weakness in written expression. This disability is characterized by dyslexia and related disorders. *Receptive/Expressive language disability* results in difficulties in understanding oral language and semantic relationships or in recalling and formulating sentences and expressing word classes. *Auditory discrimination disability* denotes a lack of phonological awareness, which is the ability to process individual sounds in the language. It is very difficult for a person with this disability to differentiate words with similar sounds at the beginning or end and to process oral language. *Nonverbal learning disability* primarily is a delay in verbal language, diminished global understanding, and social skills deficits such as interpreting cues from body language and expression. *Learning difference not otherwise specified* utilizes the discrepancy definition between ability and achievement, but the disability is not pronounced in any 1 specific category of LD. Consequently, LDNOS is not a specific learning disability. *Incalculia* (math disability) is a deficit in understanding or manipulating numerical

symbols. In research literature, this type of learning disability is also referred to as *dyscalculia*.

Observation Data

To address the question of the relationship between type of learning disability and type of social behaviors observed in students, a social skills inventory was developed, evaluated for reliability, and employed. The instrument was used to record and categorize observed behaviors of students in social settings that, for the purposes of this study, were students socializing in the cafeteria. Categories based on the tenets of Choices were used to create items on the inventory. The items were then related to the Bandura's triad components. As noted in chapter 3, the instrument was found reliable at the .81 level.

Data from 104 field observations yielded indications of behaviors related to Banduran principles. The field observations were made between August 22 and November 16, 2005 (see Appendix F for observation schedule). The recorded social errors were tallied within each of Bandura's categories and reported in Table 16. It is important to note that at each observation, the patterns of category of observed social skills errors remained consistent. This finding suggests the reliability of the instrument sustained throughout the study, with only a slight variation in the second observation during which 31 errors were observed in the cognitive category. Otherwise, there are no significant differences in the patterns of behaviors observed across time and category. The similarity in behavioral patterns indicates that both the behaviors and instrument remained consistent. The consistency suggests that the data provided a reliable depiction of the subjects under observation.

Table 16

Social Skills Errors and Determinant Grouped by Observation Round

	Cognitive	Environmental	Behavior	Total
Observation #1	22	56	49	127
Observation #2	31	60	42	133
Observation #3	21	50	41	113
Observation #4	16	58	47	121
Total	90	224	179	494
	19%	42%	39%	100%

The observed, recorded and categorized social errors from the 104 observations netted 494 social errors (see Appendix F, Table 33 for 4 observations totaled by associated determinate and number of social skills errors). Bandura's environmental determinant had the most observed social errors (225), followed by errors in the behavioral determinant (179) and least errors in the cognitive determinant (90). The determinant in which there was a disruption was designated the determinant in which the observed social error occurred. For example, if a student made social errors by clowning or being destructive, both errors were recorded in the behavioral determinant. If an observed student was unable to determine the cause of a problem or did not consider possible actions or consequences, the error would be recorded in the cognitive determinant.

Errors in social judgment were made in all 3 categories of Bandura's triad. Participant's observed errors ranged in number from 4 to 57, within a combined 40 minute time period. The majority of all errors occurred in the environmental determinant, which indicated the students had problems attending to or interpreting environmental social cues or patterns. The next lowest concentration of errors occurred in the behavioral determinant. Observed motor responses in the behavior triad were social errors such as leaving the lunch area dirty, being dishonest, or bullying another student. These were errors in behavior, not cognitive based errors resulting from misperception of environmental stimuli. The behavior errors were deliberate and incorrect under normal environmental conditions. The smallest number of errors occurred in the cognitive area, which indicated students could control their emotions and consciously select their actions (see Appendix F, Table 33 for individual participant's errors and determinants, and Table 34 for each participant's diagnosis and observation score). Table 17 details the relationship between the diagnosed groups and their observed concentration of errors in each Banduran category.

Table 17

Participants Grouped by LD Diagnosis, with Determinant of Errors from Observations

Diagnosis	# of Participants	Cognitive	Environment	Behavior
LD not otherwise specified	3	2	13	16
Nonverbal LD	3	18	42	17
Reading disability	13	32	92	78

(table continues)

Table 17 *(continued).*

Diagnosis	# of Participants	Cognitive	Environment	Behavior
R/E language disorder	5	24	54	35
Incalculia	1	11	13	16
Auditory processing disability	1	2	10	7

The concentration of errors was greatest in the environmental determinant in 4 of the 6 groups: nonverbal LD, reading disability, recessive/expressive language disorder, and auditory processing disability. Students in these 4 diagnosis groups manifest their information processing deficits in areas which would affect attending to environmental stimuli or would lower their ability to gather the appropriate environmental information necessary for the social interaction. The groups diagnosed with LDNOS and incalculia manifest their error concentrations in the behavioral determinant because their learning disability does not impact their ability to attend to and gather appropriate environmental stimuli (see Appendix F for participants grouped by diagnosis, with observation scores).

An examination of the diagnosis and concentration of errors revealed learning disability not otherwise specified participants (3) experienced their concentration of errors in the behavioral determinant. Participants with LDNOS did not have a focused, pronounced area of learning disability; rather a discrepancy between their intelligence measurement and their achievement formed the basis of their learning disability diagnosis. For this group with LDNOS, the participants did not perform correct motor responses such as attempting to trip a peer, or throwing food onto the floor. The participants acquired information concerning acceptable behaviors from many hours of

Choices social skills instruction, so the deficit was not in the acquisition of the behavior, but in its performance.

The group of participants with nonverbal learning disability (3) manifested their error concentrations all in the environmental determinant. These students had problems receiving needed environmental stimuli such as social patterns, social cues, body language, and facial affect. Their lack of useful information from the environment paralleled criteria for the NLD diagnosis in which an individual exhibits diminished global understanding and social skills deficits such as interpreting cues from body language and expression. Deficits in understanding concepts, patterns, and social cues resulted in the NLD participant's concentration of errors to occur in the environmental determinant.

The group of participants with reading disabilities error concentrations occurred in the environmental determinant. Observed environmental errors in the group of participants with reading disabilities included not using acceptable manners, not following stated rules, lack of facial affect, gestures that are rude and confusing, and invading another's personal space. All of these errors resulted from behaviors inappropriate to the environment in which they were performed. The participants were unable to attend to environmental information or attended to information that was not relevant to the interaction. They had deficits in attending to social cues and "reading" other people and places that composed their environment. Their decoding deficits in their learning disability were reflected in decoding errors in their social skills uses. Observation data indicated that participants with reading disability incurred problems in attending to and gathering appropriate environmental stimuli.

The group of 5 participants with receptive/expressive language disorder incurred their concentration of errors in the environmental determinant. The participants experienced difficulty attending to environmental stimuli or extracting appropriate and useful information from their environment. Their learning disability entailed difficulties in understanding language and difficulties in verbal expression or in both areas. An inability to understand conversations effectively and efficiently caused problems in attending to environmental stimuli in the form of verbal communication. Similarly, participant's incapacity to effectively communicate with others resulted in a lowered quality of their social interactions.

One participant was diagnosed with incalculia, an inability to understand and manipulate numerical symbols. This participant's errors were concentrated in the behavioral determinant, which indicated he did not perform acceptable behaviors. The behavior may have been acquired, but not performed, or not acquired and so impossible to perform. The connection between deficiencies in symbolic reasoning and behavioral cues remains elusive and unanswered.

An auditory processing disability was characterized by an inability to differentiate the difference to words with similar sounds at the beginning or end and to process oral language. The 1 person with an auditory processing disability committed the most errors in the environmental determinant. The inability to process oral language resulted in diminished useful environmental stimuli extracted by the person. This participant's errors in the environment included lack of facial affect, gestures that were confusing or rude, and interrupting others. These errors could have resulted from an inability to attend to verbal social cues in the environment.

The data from the learning disability subtype paired with the determinant in which most observed errors occurred indicated that in some types of learning disabilities, the subtype of LD related strongly to the type of social skills errors committed by the participants. A relationship existed between the type of learning disability and the determinant of observed miscuing in social interaction.

Participants with receptive/expressive language disorder, reading disorder, auditory processing disorder, and nonverbal learning disability had problems perceiving patterns in their environmental stimuli and understanding social cues which originated from their environment. In the participants' diagnoses with a learning difference not otherwise specified (DLNOS) and incalculia, the greatest concentration of errors was in Bandura's behavioral determinant. These 2 groups did not perform appropriate behaviors for successful social interaction. The 2 groups may have known the acceptable behavior, but did not perform it well. The motor responses they performed were confusing or inappropriate. All 3 participants' diagnoses with a nonverbal learning disability presented their major number of social errors in the environment category. All of the participants with nonverbal learning disabilities made more errors in the environmental than in either the cognitive or behavioral determinants. The participants were unable to attend to or correctly perceive environmental stimuli. Because of this deficit, their behaviors were inappropriate to the environment. Students with NLD were classified because of their deficits in global understanding, altered perceptions of patterns, social cues, nonverbal communication, and lowered social competence. Students with NLD manifested a diminished ability to perceive or utilize environmental social cues effectively and were able to gain little useful social information from their

environment. Because of the importance of the environment and others' behaviors for providing social cues, the participants with NLD made the major number of social skills errors in Bandura's environmental determinant. The same neurological dysfunction that caused their learning disability may be the basis of their observed diminished social competence.

Observation data were transformed to *z* scores for ease in comparison to the rankings from the 3 forms of the Social Skills Rating System. Table 18 reports subtypes of LD, their observation scores represented as *z* scores, and descriptive statistics that provided insight into the relationship between the diagnosed LD subtypes and their observed behaviors (see Appendix E, Table 34 for participants LD type and observation scores).

Table 18

LD Subtypes' Observation z Scores

LD Diagnosis		Minimum	Maximum	Mean	*SD*
LD not otherwise specified	(*n* = 3)	.14	1.07	.59	.47
Nonverbal learning disability	(*n* = 3)	-1.71	.93	-.71	1.43
Reading disability	(*n* = 13)	-2.14	1.00	.25	.79
Receptive/expressive language disability	(*n* = 5)	-2.71	2.14	-.26	2.08
Incalculia	(*n* = 1)	-1.57	-1.57	-1.57	.00
Auditory processing disability	(*n* = 1)*	.00	.00	.00	.00

Note. The auditory processing participant's errors equaled 19, the mean for all the participants' errors.

Participants in the learning disability not otherwise specified group (LDNOS) had the smallest standard deviation from the mean for a group with more than 1 participant, suggesting that there was the least amount of variation between participants of observed behaviors in this group. The largest standard deviation was .96 in participants diagnosed with nonverbal learning disability (NLD), suggesting that there was greater variability in observed behaviors among those students. The mean score was lowest in participants with recessive/expressive disability, which accounted for the range of scores from -1.8 to .57. In addition, the standard deviation of .96 suggested considerable variability in this group. Although the range of *z* scores for reading disabilities ranged from –1.44 to .67, the standard deviation from the mean of .17 remained low at .53. The low standard deviation suggested only a few members of this largest group, 13 students, were outliers to the rest of the group. This indicated a consistency in behaviors noted students with reading disabilities.

Comparison of SRSS and observation data

Five different data sources derived from observations, student, teacher, and parent forms of the SSRS, and IQ measurements allowed a multifaceted perspective of the participants' social competence (see Appendix F, Table 36 for *z* scores for student, teacher, and parent SSRS, observations, and IQ).

In order to explore the relationship between the subtype of learning disability and the different perspectives of the students' social skills use as ranked by the student, teacher, and parent forms of the SSRS and the observation scores, descriptive statistics

were conducted on each of the LD subtypes and the participants' *z* scores who were diagnosed with that specific subtype.

Table 19

Reading Disability Diagnosis Comparisons

	Minimum	Maximum	Mean	*SD*
		(n = 13)		
Student SSRS	-1.30	1.95	.82	.81
Teacher SSRS	-1.33	1.41	.17	.98
Parent SSRS	-2.00	1.65	-.03	.99
Observations	-2.14	1.00	.25	.79
IQ	-.57	1.79	.43	.75

Table 20 revealed widely divergent means for the 4 measures, with the parent SSRS rankings of their child reporting the lowest mean, and the student form of the SSRS reporting the highest mean. This indicated parents and their children were .85 standard deviation apart in their perceptions of the child's social skills use, with children perceiving their social skills use much more positively than did their parents. All 4 perceptions of the 13 students diagnosed with reading disabilities were generally positive, with the most difference in rankings in the parent SSRS. Participants with a reading disability incurred fewer observed social errors than did students in the other 4 diagnosed groups. The data revealed that parents of participants with a reading disability perceived their child's social skills use to be lower than did the teachers or the participants, who viewed their skills use the highest of all. Teachers ranked students

higher than did the parents, but lower than did the participants. Participants with this LD subtype were perceptive of environmental stimuli and performed appropriate motor skills. None of the participants in the reading subtype experienced their concentration of errors in the cognitive determinant.

Table 20

Receptive – Expressive Language Disability Comparisons

	Minimum	Maximum	Mean	*SD*
		(*n* = 5)		
Student SSRS	-1.04	1.17	.08	-.89
Teacher SSRS	-.86	.78	-.16	.74
Parent SSRS	-2.47	.94	-.35	1.55
Observations	-2.71	2.14	-.26	2.08
IQ	-1.64	.71	-.84	.91

The 5 participants in the group diagnosed with recessive/expressive language disability were widely divergent in many areas. There were large differences among the standard deviations of the observations and parent form of the SSRS measures, indicating wide differences in observed errors by participants within this group and very different parental perspectives held by different parents of their children. The mean for 3 of the 4 measures was negative, indicating most of the scores in the teacher and parent forms of the SSRS and the observations were below average compared to all of the other participants in the other groups. The students in the recessive/expressive language disability group ranked themselves somewhat higher in social skills use than

did most other participants. The means indicate the students perceived themselves higher in social skills use than did their teachers, parents, or observer. Parents of students diagnosed with receptive/expressive language disability ranked their children the lowest of the 4 measures of social skills use. The students comprising the group with recessive/expressive language disability were very dissimilar in their number of observed social errors. One student was nearly 3 standard deviations below the mean, and another was more than 2 standard deviations above the means. Though these students shared an LD subtype diagnosis, they were particularly different in their social skills use according to observation data. This group of 5 students presented their concentration of social errors in the environmental (3), cognitive (1), and behavioral (1) determinants. The majority of errors in the environment indicated an inability to attend to environmental stimuli or not attending to the appropriate environmental stimuli for their situation. The information deficits that define this type of LD are an inability to process incoming information effectively or to express language effectively or both deficits occur concurrently.

Table 21

Nonverbal Learning Disability Diagnosis Comparisons

	Minimum	Maximum	Mean	*SD*
		(*n* = 3)		
Student SSRS	.26	1.95	1.13	.85
Teacher SSRS	-1.64	.08	-.83	.86

(table continues)

Table 21 *(continued).*

	Minimum	Maximum	Mean	*SD*
Parent SSRS	.24	1.41	.71	.62
Observations	-1.71	.93	-.71	1.43
IQ	-.50	.36	-.19	.48

The group with nonverbal learning disability contained 3 members. The largest difference between perceptions of these 3 participants occurred in the observations, and was next lowest between teachers of this group. The negative mean indicated the number of social errors was high for this group, but 1 member scored more than a standard deviation above the mean. Teachers reported a low means in social skills use for this group with NLD, which contrasted with the high rankings the students gave themselves. This difference indicated students perceived their social skills positively in this group, but generally the teachers did not share the students' perception. No student with NLD perceived themselves to have low social skills use. All members of this group committed their concentration of errors in the environmental determinant (see Table 20 for participants grouped by LD diagnosis, with triad of errors from observations), which suggested they did not attend to social cues from their environment or they attended to the wrong environmental stimuli relating to their social interaction.

Table 22

Learning Disability Not Otherwise Specified Diagnosis Comparisons

	Minimum	Maximum	Mean	*SD*
		(*n* = 3)		
Student SSRS	-.13	1.95	1.00	1.05
Teacher SSRS	.31	.94	.55	.34
Parent SSRS	-1.29	1.18	.28	1.36
Observations	.14	1.07	.59	.47
IQ	-1.79	.93	.26	1.39

Three participants were in the group diagnosed with LDNOS. They were perceived positively in all 4 measures. The teachers' lowest rank for a participant in this group was still above the mean. There was most divergence in rankings between parents of the different participants in this group. However, students, teacher, parents and the observer all ranked these participants above the mean. This group had 2 members whose greatest error concentrations were in the behavioral determinant, and 1 whose errors were equal for both the behavioral and environmental determinant. Participants with LDNOS did not experience deficits in the cognitive triad, but most problems occurred in the behavior triad. They did not perform behaviors that were acceptable for social interaction. One participant could not effectively gather information from his environment, which equaled his errors in motor responses in the behavioral determinant.

Table 23

Auditory Processing Disability Diagnosis Comparisons

	Minimum	Maximum	Mean	*SD*
		(*n* = 1)		
Student SSRS	1.43	1.43	1.43	--
Teacher SSRS	.31	.31	.31	--
Parent SSRS	1.06	1.06	-.03	--
Observations	--	--	--	--
IQ	2.00	2.00	2.00	--

Only 1 participant was diagnosed with auditory processing disability. This participant was ranked above the mean by all 4 measures. The student ranked herself higher than the rankings of the other 3 measures. The determinant of most observed errors by this participant was the environment (see Table 20 for participants grouped by LD diagnosis, with determinant of most errors from observations). People with auditory processing have difficulty decoding and understanding verbal communication. Verbal communication constitutes an important component of stimuli provided from the environment.

Table 24

Incalculia Diagnosis Comparisons

	Minimum	Maximum	Mean	*SD*
		(*n* =1)		
Student SSRS	.39	.39	.39	--
Teacher SSRS	-.80	-.80	-.80	--
Parent SSRS	.35	.35	.35	--
Observations	-1.57	-1.57	-1.57	--
IQ	-1.29	-1.29	-1.29	--

Only 1 student was diagnosed with math disability, incalculia. This student was ranked above the mean by him and his parent, but below the mean by the teacher. This student made more errors than average and so was ranked below the mean in observed errors. The errors were concentrated in the behavioral determinant. Errors in the behavioral determinant indicate performance of incorrect motor responses.

The data sources are organized by learning disability subtypes with student, teacher, and parent forms of the SSRS rankings, observation rankings, and IQ. The data sources were correlated within the LD subtypes represented by more than 1 participant.

Table 25

Correlations of Data Sources within LD Subtypes

Data Source	R/E language	Reading	NLD	LDNOS
Student/teacher SSRS	.21	.41	.45	-.88
Student/ parent SSRS	.70	.12	.23	.95
Student SSRS/ observations	.83	.01	.77	.98
Student SSRS /IQ	-.66	.40	.88	-.56
Teacher/ parent SSRS	-.27	.05	.97	-.98
Teacher SSRS/ observations	.56	.21	-.23	-.78
Teacher SSRS /IQ	-.70	.14	-.03	.09
Parent SSRS/ observations	.18	.21	-.44	.89
Parent SSRS/ IQ	-.40	.30	-.26	-.29
Observations/ IQ	-.64	-.32	.98	-.70

Correlations within each subtype of learning disabilities yielded many comparisons between the different data sources. Only 4 of the 6 subtypes are represented here because the subtypes auditory processing disability and incalculia had only 1 participant each. The correlations within the subtypes were compared. Because all the data were transformed to *z* scores, comparisons were possible between the various subtypes.

In the 5 participant group diagnosed with receptive/expressive language disability, the strongest relationship existed between the student SSRS and observation rankings. The students' assessment of their social skills use closely aligned with their

observed social skills use with a *z* score of .83. Students and parents, as reported in their SSRS forms, exhibited a strong correlation in their perceptions of students' social skills use with a score of .70. A strong, but inverse relationship existed between the teachers' perception of the students' social skills use and the participant's IQ with a *z* score of -.70. In this group, the teachers' high ranking of the participants' social skills use did not indicate a high IQ. This group committed the majority of their observed errors in the environmental determinant (see Table 17).

There were 13 members in the group diagnosed with reading disability. There were weak correlations in all comparisons. The strongest correlation was .41, between the students' and teachers' perceptions as reported in the SSRS. This group was composed of participants with the disparate reading proficiencies of decoding and comprehension. The lack of more than moderate correlations among participants with reading disability indicated that their social skills use was not consistently perceived among the 4 data sources. This group committed the majority of their observed errors also in the environmental triad.

There were several strong relationships between the data sources in the 3 member nonverbal reading disability group. The teachers and parents shared nearly identical perceptions of the participants' social skills use, with a *z* score of .97. Another strong relationship existed between the observation rankings and the participants' IQ in this subtype, with a score of .98. A strong correlation of .88 occurred between the student SSRS data and the students' IQ. Students' perceptions of their social skills use were strongly related at .77 to the observation rankings. The environment was the

determinant in which most participants in this group made their social skills errors (see Table 17).

The last group with more than 1 member consisted of 3 participants diagnosed with learning disability not otherwise specified (LDNOS). Of the 10 different combinations of data sources compared, 7 combinations revealed strong correlations. Out of the 7 correlations, 4 of the combinations were inversely related. A strong negative relationship existed between the teachers' and parents' perceptions as reported in the SSRS forms. Their views were nearly opposite of the students' social skills use, with a *z* score of -.98. Also strongly unrelated were students' and teachers' perceptions, teachers' perceptions and observations, and observations and IQ. However, students' rankings of themselves nearly paralleled their observation rankings, with a score of .98. Student and parents' rankings were strongly related, as were parent and observation rankings. The number of strong correlations within the group with LDNOS indicated that their social skills use was perceived consistently among several of the data sources, with the exception of IQ measurement. This group committed the majority of their social skills errors in the behavioral determinant (see Table 17).

The group correlations were compared to the group correlations of the other LD subtypes. The student and teacher SSRS data on the participants' social skills use did not have more than a moderate correlation. However in the groups of R/E language disability and LDNOS, the student and parent SSRS were strongly related. Student rankings and observations were strongly correlated in 3 of the 4 groups: R/E language disability, NLD, and LDNOS. The participants' perceived social skills use and IQ were strongly related only in the NLD group. Teachers' and parents' perceptions were

strongly related in the group with NLD, and even more strongly *not* related in the LDNOS group. Also in this group, teachers' perceptions of the participants' social skills use and observation rankings were very different. Teachers' perceptions were inversely related to IQ in the group diagnosed with R/E language disability and were not correlated in the other 3 groups. Only in the LDNOS group did parents' perceptions strongly correlate with observation rankings. Parents' perceptions of their child's social skills use were not correlated to their child's IQ in any of the groups. Observations were strongly correlated to IQ in the group with NLD. In contrast, observations were very weakly correlated to IQ in the group with LDNOS. The most consistent ranking of social skills use were between students' perceptions as reported in the SSRS and observation rankings in the R/E language group, and groups diagnosed with NLD and LDNOS.

The 5 data sources from the student, parent, teacher SRSS scores, observations, and IQ provided *z* scores that were subjected to a factor analysis using SPSS® software for Windows (SPSS, Inc., Chicago, IL, www.spss.com). The factor analysis used the extraction method of maximum likelihood.

Table 26

Factor Analysis of z *Scores from 5 Data Sources*

	Component	Initial Eigen values	
		% of Variance	Cumulative %
1	Student SSRS *z* scores	36.29	36.29
2	Teacher SSRS *z* scores	25.25	61.54

(table continues)

Table 26 *(continued).*

	Component	Initial Eigen values	
		% of Variance	Cumulative %
3	Parent SSRS *z* scores	21.67	83.21
4	Observations *z* scores	9.64	92.84
5	IQ *z* scores	7.16	100.00

The results of the analysis indicated there were 4 Eigen values greater than 1.00. After inspection of the scree plot, a 3-factor solution was deemed appropriate. Participants' IQ was deleted as a factor because of its low correlation to the other factors. The first factor, student form of SSRS, accounted for 36.3% of the variance. The second factor, teacher form of SSRS, accounted for 25.2% of the total variance. The third factor, parent form of the SSRS, accounted for an additional 21.7% of the variance. The 3 factors cumulatively explained 83.2% of the total variance. The participants' observation and IQ scores explained 9.6% and 7.1% respectively of the variance. In this factor analysis, the 3 forms of the Social Skills Rating System were the best predictors of a student's social competence. Observation scores and IQ measurements were not as meaningful for predicting a student's competence as the SSRS.

Summary

This study explored the social competence of adolescents with learning disabilities using the theoretical framework provided by Bandura's theory of reciprocal interaction and asked the questions*:*

1. Does the language processing disorder of children with learning disabilities contribute to their general decreased social competency as viewed through the application of Bandura's reciprocal interaction?

   a) How do 7th grade students with learning disabilities perceive themselves as social beings?

   b) How do teachers of 7th grade students with learning disabilities perceive them as social beings?

   c) How do parents perceive their children with learning disabilities as social beings?

2. Is there a relationship between cognitive ability and social competence in 7th grade students with learning disabilities?

3. What is the nature of the relationship between the type of learning disability and the type of social incompetence shown by the 7th grade students with learning disabilities?

This was a mixed method study using both qualitative and quantitative methods. The qualitative data were derived from structured interviews. Quantitative data resulted from participant observations and from the student, teacher, and parent forms of the Social Skills Rating System (SSRS), facets of interview data, and information from participants' school records. Quantitative data analysis was conducted using SPSS for correlations, frequency counts, descriptive statistics, and factor analysis. Qualitative data analysis of text data was accomplished through various levels of coding that enabled comparison and contrast of data and building theory about that data.

Findings from the interview data revealed as much diversity among the participants as existed in their constellation and severity of learning disabilities. The students attended daily social skills classes for at least 2 years, but definitions of social skills ranged from very weak to excellent. The majority of participants reported a lack of concern about others' perceptions of their social skills use, but also believed that a competent use of social skills provided a defense against negative responses from their peers. Participants stated they learned most of their social skills from observation of others, and direct instruction was a smaller component of their social skills acquisition. Students reported angry emotions, confusion, and misunderstandings in social interactions involving humor and in their interactions with adults. Participants' comments indicated their ineffective and insufficient gathering of information from their social environment resulted in conflict in their social interactions. They derived most of their environmental information from their physical environment rather than their social environment. Most participants reported attempts to resolve misunderstandings in social interactions, but were very reluctant to involve adults in their problem solving behaviors. Bandura's triad of reciprocal interaction was represented in participant's comments, with most difficulties originating primarily in the environmental and cognitive determinants. According to interview data, acceptable behaviors in the behavioral determinant were not reported as problems, but cognitive processing of environmental stimuli resulted in misunderstandings. Problems were primarily focused on an inability to attend successfully to environmental stimuli in the form of social cues, patterns, and nonverbal communication.

The Social Skills Rating System provided information from the student, teacher, and parent about the student's social skills use. The various perspectives created a more comprehensive picture of the participant's social skills use than only 1 data source. Students ranked themselves highest with a mean of .82 than did the teacher or parent survey groups. The students ranked anger management and adult interactions as their lowest social skills use, and loyalty to friends and certain types of social interactions as their highest skills use. Teachers also presented a positive perspective of their students' social skills use with a mean of .17. However, the teacher's perspective was not as positive as the students' view. Teachers believed their students were inclusive in their interactions and were generally socially competent. Teachers ranked their students lowest in *appropriate* expression of anger and in voicing a*ppropriate* disagreement with rules. Parents deviated most from each other in their perspectives of their own child's social skills use. Parents diverged with a standard deviation of .99 and were barely below the mean in their ratings of the child's social skills use. The highest ranked statements on the parent SSRS centered on following home routines such as phone answering method and notification of appropriate people in accident situations. The lowest ranked items involved room tidiness and helping family members around the house. Parents did not cite either management of emotions or adult conflict as very competent or very incompetent areas of their child's social skills use. Both of those areas were ranked lowest by their children.

Participant observations provided data on the number of social skills errors committed by each participant and the Banduran determinant in which most errors occurred. Most errors were committed in the environmental determinant, followed by

the behavioral category. The cognitive determinant was a very distant third in recorded participant errors. Most observed errors resulted because of inattention to environmental stimuli or attending to inappropriate environmental stimuli. Correlation of the participants' *z* scores from observed social errors to their IQ measurement showed a very weak relationship between them.

Quantitative data from the participants' observations scores were used to explore the relationship between social behaviors and the participants' subtype of learning disability. The participants were grouped by their LD subtype. A frequency count of participants in each group and their errors were conducted to determine the total number of social errors committed in each determinant of members sharing the same diagnosis. The specific types of information processing deficits in the LD subtype diagnosis were compared to the major determinant of the group. Participants whose learning disabilities subtypes involved deficits in gathering information from the environment also experienced deficits in information processing from their environment in their social interactions. A relationship was indicated between the LD diagnosis and their social behavior in the groups with nonverbal learning disability, receptive/expressive language disorder, auditory processing disability (1), and with reading disability.

A factor analysis was performed to determine which of the 5 data sources was the best predictor of social competence. The 3 forms of the Social Skills Rating System accounted for 83% of the variability. IQ measurement and observation errors were not as strong predictors of the participants' social competence.

Bandura's reciprocal interaction theory provided a theoretical framework connecting all the data to create a composite picture of the participants in the study. The next chapter will discuss additional findings and implications regarding this specific population. Limitations will be discussed, along with suggestions for further study.

CHAPTER 5

DISCUSSION

The present study considered the social skills use of adolescents with learning disabilities through the application of Albert Bandura's theory of reciprocal interaction. The following discussion examines the results of the study and illuminates the findings. The discussion includes consideration of the assumptions and limitations of the study that offer relevant information. Implications for future research and the value of the findings to the existing body of research on social competence in adolescents with learning disabilities will close the discussion.

Bandura's triad of reciprocal interaction was instrumental in exposing differences in social skills use among students with LD. The 3 determinants in reciprocal interaction were used to create a system of differentiating and recording the participants' types of social skills errors. The triad also provided a theoretical structure from which to examine differences. The application of reciprocal interaction determinants revealed a possible link between the participants' social skills use and some subtypes of learning disabilities in this population.

In a mainstream student with no major information processing deficits, the 3 determinants operate reciprocally and continuously. One determinant acts upon the other, which together influence the third determinant. Bandura (1986) used an equilateral triangle to schematically illustrate the cooperative, "mutual action between

causal factors" in this reciprocal causation (p. 24). An equilateral triangle symbolized the equal contributions over time of the 3 factors in cognitive learning. This study applied Bandura's reciprocal interaction theory as a framework for exploring social skills use in 7th grade students with a major information processing deficit. Based on the findings from this study, the triangle was no longer equilateral because the 3 determinants no longer provided equivalent input over time. The 7th grade students with learning disabilities experienced 1 of 3 areas of deficiency in his or her social skills interactions, resulting in distortion of the triangle. A student with a type of disability that affects cognition was not capable of processing information to add to or modify an existing mental schema. All of the participants had information processing deficits that affected the behavioral determinant or the environmental determinant**.**

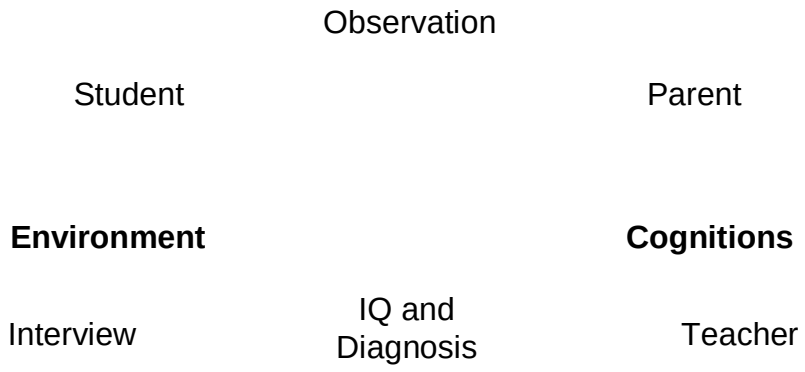


Figure 2. Balanced reciprocal interaction.

The value of using Bandura's theory of reciprocal interaction in the study was demonstrated by 3 findings. First, focusing on the triad of factors that worked together in social skills use allowed specific differences in the skills use to emerge from the data.

Findings indicated a difference in social skills use existed between the different subtypes of learning disabilities represented in the study. Second, by using Bandura's triads, it was possible to measure the difference in social skills use in the participants with various subtypes of LD. Third, the results from observations of participants' social skills use indicated a possible connection existed between the participants' social skills use and some subtypes of learning disabilities.

General discussion

A large amount of data was generated from 4 perspectives by the student, teacher, parent, and observer. A factor analysis was applied to the data garnered from the 3 forms of the Social Skills Reporting System® instrument (SSRS) (J. Gresham and S Elliott, AGS Publishing, Circle Pines, MN, www.agsnet.com), observation rankings of the participants, and IQ measurements. The participant emerged as the best evaluator of his or her social skills use, accounting for more than 36% of the total variance among the predictors. The reciprocal interaction triad was represented most equally in the participants' self rankings because they exercised the capability of reflection as active processors of information while experiencing the environment and living their behaviors. Other raters were part of the environment that surrounded the participant in which the behaviors were performed. However, the other raters were only able to evaluate the participant through observed behaviors and were not direct participators in the participant's cognitive processes. The teachers and parents relied on rankings of the participant's social skills use from their *interpretations* of the participant's cognitive processes as demonstrated through the participant's observable behaviors. Teachers and parents relied primarily on 2 determinants for information sources in their rankings.

Consequently, their perceptions of the students reflected ratings in the area of behavioral determinant. Parents and teachers are interested in what they can observe children performing, accordingly, children are seen through a behavioral lens regularly. The SRSS teacher and parent data supported this finding and confirmed that student behavior remains the main primary perception of children by adults. The teachers' SSRS rankings were not the best predictor of the participants' social skills use, but accounted more than 25% of the total variance parceled by the factor analysis (see Table 26). The teacher did not have access to a particular student's cognitions, but had all the other students from which to construct her frame of reference for cognitively ranking the participant's social skills use. The teachers' mental schema of social skills use was constructed from the group norm including all the other students, which became the criteria to which the student's skills use was compared. Parents' rankings were not as reliable predictors as students' and teachers' rankings, but explained more than 21% of the variance in the factor analysis. The parent's frame of reference did not include the teachers' group norm of the other students from which to make a comparison of their child's use of social skills. The majority of the parents had other children not learning disabled as a component in their frame of reference for their ranking of social skills use by their child with learning disabilities. Perspectives were unique to each evaluator and his or her relationship to the participants. However, the perspective was affected by the degree to which all the triad determinants of cognition, behavior, and the environment were involved.

Discussion of diagnosed groups

This study used the 6 learning disability subtypes defined by school-based evaluations. The 6 subtypes identified for this study included reading disability, receptive/expressive language disability, nonverbal disability, auditory processing disability, incalculia, and learning disability not otherwise specified. The 26 participants were grouped by diagnosed subtype. Exploration and probing of the 26 participants suggested the specific learning disability and its attendant information processing deficits were related to the type of social skills deficits in some of the subtypes. These subtypes of learning disabilities included reading disability, receptive/expressive language disability, nonverbal learning disability, and auditory processing disability. In 2 other subtypes, incalculia and learning disability not otherwise specified, no relationship was found between the subtype of LD and the social skills use.

This study, through its interrogating, probing, comparing, and contrasting of the 26 participants, revealed many findings about the 6 subtypes of learning disabilities represented by these participants. The theoretical framework from which these 7th grade students were scrutinized was Bandura's model of reciprocal interaction between the individual's cognition as an active processor of information, the environment, and the person's behaviors performed in the environment. The data sources were subjected to a factor analysis which revealed the participant was the best predictor of his social skills use. The participants accounted for 36% of the variance in their rankings from the student SSRS. Teachers' rankings, in the teacher SSRS, explained 25% of the variance. Parents were the third best predictors of their child's social competence, accounting for 22% of the variance. Observations of participants resulting in social error rankings were surprisingly limited as indicators of a participant's social skills use,

explaining just 10% of the total variance. This finding indicated that observing motor responses exhibited by the child were not as important predictors of that child's social interactions as the self-report in the student SSRS, which explained over 3 times that amount of variance. IQ was the least important predictor, with 93% of the variance already accounted for before IQ was considered. IQ was representative of the cognitive determinant and was not represented by any of the subtypes as their concentrated area of social errors. The limited number of errors of social judgment in the cognitive area supports the factor loading's low importance of IQ as an indicator of social skills use.

Reading Disability

Half of the population in this study was diagnosed with reading disability. Because reading is fundamental to academic achievement, an inability to read is 1 of the primary indicators that precipitate a child's testing and possible diagnosis. .The 13 students with reading disabilities were grouped together because of their diagnosis, but their commonality did not extend to all areas. Several participants were the highest ranked in social skills use of the entire study according to data from the 3 SSRS forms and observations. Another participant was nearly the lowest in all data sources from this group. The group diagnosed with reading disability committed the majority of their observed errors in the environment component of Bandura's triad. This finding indicated they experienced difficulties in attending to or selecting appropriate information from their environment. Disruptions in processing environmental stimuli resulted in errors of social judgment in ways that aligned with their diagnosis. The students with reading disabilities were diagnosed with deficits in decoding written words and also experienced deficits in decoding social cues in social interaction.

The types of social errors made by participants in the reading disability group involved invading another's personal space, messy personal appearance, not waiting for their turn, and not using acceptable table manners. These types of errors were representative of disruptions in the environmental determinant because the errors were inappropriate to the specific environment. As indicated by the teacher, parent, and student SSRS, these students were all perceived in a positive manner by their teachers and parents and ranked themselves nearly a standard deviation above the mean. *Z* scores were used in all rankings. The observed errors for the group together were nearly a standard deviation below the mean. Within this diverse group of participants with reading disabilities, 1 student had the second lowest ranking of all the participants, nearly 2.5 standard deviations below the mean.

Correlation data indicated students and teachers were the most closely related to each other in their perceptions of the students' social skills use. The data sources, when compared in correlations, did not reflect agreement in their perceptions of the students. These students made their observed concentration of errors in the environment, and their reading disability was affected by imperfect decoding of environmental stimuli in the form of letter symbols. The errors of social judgment in the environment aligned with their diagnosis of information processing deficits in the environment. Bandura's equilateral triangle of bidirectional equilibrium was disrupted by the information processing deficit of participants in this group. Because of this disruption in the environmental determinant, their social interactions were distorted by the imbalance between the components of the triad.

Receptive/Expressive Language Disorder

There were 5 participants in the group diagnosed with receptive/expressive language disabilities. This group made the majority of their observed errors in the environment. These errors resulted from not attending to environmental stimuli or attending to inappropriate environmental information. Examples of such errors included gestures that were confusing, not waiting for turns, and interrupting others. Symptoms of this disability subgroup were deficits in receiving information from the environment and in expressing information proficiently into the environment. A participant in this group might extract information more efficiently and effectively from the written word rather than from oral communication. A participant might also be more capable of succinct written rather than oral communication. The capability to communicate verbally with others in the environment is critical to social competence. The errors in social skills from the environmental determinant which this group represented aligned with this diagnosis.

This group perceived themselves below the mean in social skills use. However, their teachers, as reported in the teacher form of the SSRS, perceived the students much more positively with a *z* score of .74. Parents displayed a wide difference in their perceptions of their child in this group. One child, as reported in the parent SSRS, was ranked -2.47, the lowest in any data source for any child. The observed errors rankings for this group were below the mean, though their IQ was nearly a standard deviation above the mean. Students and parents in the SSRS had very similar perceptions of the students' social skills use. Students' own perceptions also correlated highly with their observation rankings. Teachers' perceptions were strongly inversely related, so a high teacher ranking related to a low IQ, and a high IQ was related to a lower teacher

ranking. This group was more consistent in its perception of the students' social skills use across data sources, suggesting the sources were reliable. Students in this diagnosed group experienced problems with receiving and expressing communication in the environment, and the concentration of observed errors supported that finding. Bandura's equilateral triangle, representative of people without major disruptions in information processing, would be skewed in this group. The environmental determinant of information processing was deficient, which distorted the balanced equilibrium between the 3 determinants. This imbalance between the determinants resulted in lowered social skills use.

Nonverbal Learning Disability

The group with nonverbal learning disabilities had 3 members whose concentration of observed errors was overwhelmingly in the environmental determinant. The symptoms for this diagnosis were a deficit in perceiving and understanding relationships, patterns, and social cues. This group's concentration of errors in the environment supported their diagnosis' symptoms of misperceiving social cues and relationships. Their lack of perceived social cues and relationships occurred in the participants' environment, where the information was conveyed as information stimuli. The environmental errors of social judgment for this group included lack of facial affect, not looking into another's eyes when speaking, invading another's personal space, and interrupting. All of these errors involved not understanding social cues appropriate to the environment.

This group was perceived consistently in its social skills use as indicated by high correlations between data sources. Students' rankings of their social skills use were highly correlated to the observation rankings. Teachers and parents, as reported on the

SSRS forms, perceived the students' social skills use extremely close, with a correlation of .97. The student's self-report in the SSRS, the observation rankings, and the participant's IQ were highly correlated. Students in this group received below the mean rankings in the teacher SSRS and in IQ. These students' errors in social judgment aligned with their diagnosed nonverbal learning disability. The symptoms of the disability were supported by the type of environmental errors committed by the participants. The members of this group committed errors in information processing in the environment, which resulted in lowered social skills use because of the imbalance of reciprocal interaction in Bandura's triad.

Auditory Processing Disability

There was only 1 representative of the diagnosis of auditory processing disability. This participant committed her concentration of observed errors in the environment. In the SSRS, the student ranked her social skills use in the SSRS as 1.43 standard deviations above the mean. The teachers' perception of this participant's social skills use was lower, at .31. The parent perceived the student's social skills use to be much higher than perceived by the teacher, but the use was not as highly ranked as the student perceived it. This student had the second highest IQ of all the participants. The student's errors of social judgment occurred in the environment, which was also the determinant affected by deficits in understanding verbal communication. The area of skills misuse was related to the area of information processing deficit of this participant. The optimum equilateral triangle provided by Bandura to symbolize mainstream reciprocal interaction was distorted in this case because the environmental determinant was not an equal factor in this participant's interactions.

Learning Disability Not Otherwise Specified

The 3 participants in the group diagnosed with LDNOS made the preponderance of their errors in Bandura's behavioral determinant. Such errors were bullying, dishonesty, and not respecting self, others, or property. These participants did not have information processing deficits concentrated in a specific area, but were considered LD because of their discrepancy between ability and achievement. Their errors were not in misperceiving the environmental stimuli or attending to inappropriate stimuli or in deficient cognitive processes. These students performed the wrong motor responses. This group's concentration of observed errors was markedly different from those participants with a specific subtype of learning disability.

These students' social skills use was perceived consistently by themselves and their parents, as indicated by a .95 correlation between their SSRS rankings. The students' perceptions of their social skills use was highly correlated to the observation rankings with a score of .98. The parents' rankings were also strongly related to the observation rankings with a score of .89. Data sources of students in this group did not indicate much difference in their rankings, which suggested a consistency in their perceived social skills use among the sources. Bandura's equilateral triangle was disrupted and skewed in this group by their deficits in the behavioral determinant.

Incalculia

There was 1 representative of incalculia diagnosis. This person committed the majority of observed errors in the behavioral determinant. The inability to understand and manipulate mathematical symbols is a type of decoding disability. This student had a relatively low IQ and committed many errors in observations. His teacher, as reported in the SSRS, perceived his social skills use to be low. The student and parent were

very similar in their assessment of this child's social skills use, with the parent slightly lower than the student. The relationship between the behavioral determinant and math deficits was unclear. This student was the only representative of incalculia, making conclusions between the symptoms of the disability subtype and the errors of social judgment inconclusive. The only possible conjecture that can be made about this student is that behavioral choices are ones that are more visceral, requiring less cognition. Consequently, this participant, who was functioning low in all areas including IQ, may have displayed inappropriate behaviors due to miscuing and limited cognitive abilities.

The different types of learning disabilities in the compared groups indicate the specific subtype of learning disability entails information processing areas that are critical to social skills use. This finding suggests social skills use is affected to a greater or lesser extent by the deficits presented by the specific type of learning. In contrast, the information processing deficits associated with incalculia characteristics differ in the input required in social understanding, making this finding somewhat unique and unclear. Participants frequently have different secondary diagnoses, which also differ in severity from their primary diagnosis. Rather than suggesting that the diagnosis has no relationship to the tenets of social understanding, the influences of the combination and severity of subtypes in the same student may confound the data and also the findings in some instances.

The study participants with diagnoses of incalculia and learning disability no otherwise specified presented their concentration of social skills errors in the behavioral determinant (see Table 17). The focus of errors in the behavior determinant indicated

these students had deficits in that factor of their reciprocal interaction. The students performed motor responses that were incorrect. The 4 other groups of participants committed the concentration of their observed errors in the environmental determinant. This finding suggested the students in the other 4 groups were deficient in attending to or selecting the appropriate environmental stimuli for the social interaction at that time. For example, widely spreading a lunch sack of food around a plate is not incorrect in itself. However, if many other students are also seated at the comparatively small table, the food spreading becomes an error. Skipping is not intrinsically wrong, but the behavior is inappropriate in a crowded lunchroom with people carrying loaded trays. The information provided by the environment of crowdedness or closely packed people was either not perceived or the student was possibly paying attention to the flags across the ceiling and engrossed in determining their countries of origin.

In summary, most participants, observed through all measures, exhibited imbalance in the environmental component of the triad. Socialization requires the ability to assess, attend, and respond quickly to spontaneous events of behavior in an environment. High IQs, as noted in this study, did not aid these participants in their ability to respond instantly to the stimuli observed in the environment. Their IQs provided them with the ability to process intellectually, but not socially. The distortion in the environment leg of the triangle of reciprocal interaction was exacerbated by the inability to process incoming information quickly enough to respond in a socially accepted manner. These data support the supposition that students diagnosed as learning disabled are equally disabled in both academic and social realms due to

disruptions in processing. These findings would suggest that the Choices curriculum focus more heavily on reading, understanding, and responding to environmental cues.

Seven distinctions separated highest and lowest ranked participants: comprehensiveness of social skills definition, perception by others, recognition of social cues, willingness to inform, empathy, confidence, and ability to know. These peculiarities crossed lines of diagnoses and provided a sense of the learning disabled learners as they perceived themselves as social beings. A high scoring student with learning disabilities was reported in interviews, observable behaviors, and SRSS rankings to approximate more closely the equilateral balance of the Banduran triad. In contrast, the lower scoring students' triangular balance appeared more scalene-like, with at least 1 longer line connecting to the other 2 parts of the triad.

The participants with the highest combined social skills scores articulated a more comprehensive definition of social skills compared to those participants with the lowest scores. Some high scoring participants introduced the concept of interaction between themselves and others in social skills. A qualitative difference existed in social skills definitions between the 5 highest and 5 lowest ranked participants in social skills use. The highest ranked students explained interaction as a component of social skills and mentioned the necessity of selecting the appropriate social skills to fit the particular environment of people and surroundings. The participants also reported that social skills occurred constantly in all places and that understanding emotional intelligence was a form of social skills use. In contrast, the lowest ranked students provided short answers or reported social skills were manners or a class at school. The insufficient responses suggested a disruption in cognitive processing involving reflection or a poor

mental schema of social understanding from which to construct their responses. The difference in the quality of social skills definitions reflected the span of social understanding that existed among the participants.

Participants with the highest social competence scores all reported concern for how they were perceived by others. Four of the 5 lowest social competence participants stated they did not know or did not care how others perceived them or both. All participants with the highest combined social skills rankings articulated how their social behaviors influenced others. Those students with the lowest social competence could not verbally express how their social skills use affected others. Understanding the consequences of a specific behavior is necessary in order to understand what caused a social interaction to proceed smoothly or to be disrupted. Similarly, if the participant did not care or understand how his or her social skills use affected others, no motivation would exist for the student to improve in this area. Students with the lowest ranked social skills use were impaired in their cognitive processing. The participants exercised their vicarious capability to understand another's point of view or their self-reflective capability. Failure to make cognitive connections or to perceive relationships is a symptom of nonverbal learning disabilities, and these findings support research in the literature. The original supposition was that all participants would respond that they cared very much how their skills influenced others' perceptions of them. The highest socially skilled participants reflected this supposition, but the less socially skilled participants did not cite this concern.

All the participants with the highest social competence rankings recognized the precipitating factor that went awry in a social interaction misunderstanding. Participants

with highly ranked social skills reported they did not listen carefully, they were in a hurry, or they were using email where nonverbal communication was impossible to perceive and ultimately led to misunderstandings. Through their active cognitive processing, the students exercised their self-reflective capability and defined the cause of the misunderstanding. Those participants with the lowest social skills explained others became angry and they didn't know why, or when others were angry with them, the participants responded by becoming angry also. Failure to diagnose the origin of a misunderstanding renders resolution of the conflict difficult at best. This finding supported the literature concerning students with learning disabilities in general, which suggested an inability to perceive relationships is a common deficit in these students with low social competency. Those participants with high social competency understood the relationships between events that occurred to precipitate the resulting misunderstanding.

All the participants with the highest social competence rankings reported they would inform the person with whom they were in conflict if a misunderstanding occurred. This choice of behavior applied whether they misunderstood another person or they believed they were misunderstood. Exercising self-regulation is a component of cognitive processing that is necessary for social understanding. Informing others of the conflict was a motor response resulting from cognitive self-regulation. Four of the 5 participants with the lowest social scores stated they would not notify the other person with the goal of resolving the misunderstanding. The lowest rated students experienced a disruption in the behavior determinant of Bandura's triad because they did not perform the behavior necessary to resolve, or attempt to resolve, the misunderstanding. They

may not have understood what caused the misunderstanding or they failed so often in social interactions that a misunderstanding was the expected outcome. The lowest scoring participants did not understand how to unravel the misunderstanding, or did not understand that they had the power to make things right again. This lack of action indicated low self efficacy, poor problem-solving behaviors, or an ineffectual perception of themselves as social beings, a finding associated in the literature with LD students. Bandura (1997) posited, "Self-belief does not necessarily ensure success, but self-disbelief assuredly spawns failure" (p. 77). This belief was born out in the lower functioning group.

The differences between the highest and lowest ranked participants in social skills use included empathy toward others. The highest ranked participants explained how they could determine whether a friend was unhappy, or how their cheerful behavior would improve the mood of others. As demonstrated by the highest ranked participants in social skills, understanding the other person's point of view was a component of successful social skills use. A student in the lowest ranked social competence group reported satisfaction in mocking a student with low social status in order to elicit laughter from peers and expressed no concern for the peer's resulting emotional distress. Another participant explained he used certain social skills if the other person could potentially be of use to him. This flagrant use of another person in order to achieve the participant's own ends indicated low social skills and also suggested a deficit in the participant's behavioral determinant. Not understanding another's emotions is reported in the literature as a symptom of nonverbal learning disabilities. This symptom was born out in the study.

A connection evolved in the interview data between the highest ranked participants and their confidence and belief in their own ability to improve their social skills use and influence the way others perceived them. The participants with the highest social competence approached social interactions with an attitude of self-confidence. People who believe they are capable act, think, and feel differently from those who perceive themselves as without efficacy (Bandura, l986, p. 395). The theme existed in the highly ranked participants' interviews of a capability to exert some control in their social interactions and possession of skill to know how to exercise that influence. This confidence was representative of the cognitive determinant. The participants exercised self-reflection and vicarious capability in perceiving themselves as capable in a specific situation of performing certain behaviors to achieve desired results.

Those students with the lowest scores did not perceive themselves as being able to alter a social interaction nor did they understand how to do so. Bandura (1986) stated, "Judgments of adequacy involve social comparison processes" (p. 360). The participants did not see control of their interactions or impressions they made on others as residing within themselves. A participant in the lowest social skills use group reported, "They can judge things better than I can." Participants with an external locus of control did not perceive themselves as capable of making desirable things happen, but also did not reflect to determine how they could affect the environment to facilitate better results. The literature reports people with learning disabilities in general have a lower quality of problem-solving strategies. Those participants in the high ranked social skills group used their cognitive processes to reflect and search their mental schema for effective strategies to produce desired outcomes. Those students with disruptions in

their cognitive information processing were not as successful in selecting appropriate solutions and so did not maintain a high level of confidence or efficacy. The findings in this study supported the literature.

Various aspects of social skills use were explored in the interview data. In the responses of the participants with the highest social skills use, there was no instance in which they responded, “I don’t know.” These participants used their cognitive processes for reflection. However, in the lowest scoring participants, “I don’t know” was reported by each participant, sometimes multiple times. This phenomenon may suggest a lowered capacity for reflection, or it may be a symptom of their subtype of learning disability, such as receptive/expressive language disability. Deficiencies in verbal expression, confidence, self-reflection, and comprehensive mental schemas from which to extract appropriate answers were all suggested by the lack of participants’ responses. Such deficits contributed to a lowered social skills use. However, proficiency in verbal expression and self-reflection combined with confidence and an ability to interrogate an informed mental schema constitute elements of social competence. The “ability to know” was the major discrepancy between those participants with high and low social competence, in their ability to identify, distinguish, and recognize what was occurring in their cognitive processes, their environment, and to know the appropriate behaviors to perform.

The differences between the 2 groups in the previous discussion would not have been revealed without data from the 3 forms of the SSRS and observation rankings in social errors. The quantitative data were used to interrogate the qualitative data in a new way. A different perspective of the participant emerged from which to view the

complex and largely unexplored area of social skills use of adolescents with learning disabilities through the application of reciprocal interaction. Use of Bandura's theoretical framework refined and focused the direction and findings in this study.

Limitations to the study

This was an exploratory study using mixed methods to investigate and probe the social skills use of adolescents with learning disabilities. The relationships were viewed, explored, and probed from a perspective provided by the theoretical framework of reciprocal interaction. In reviewing research literature, no evidence was found of Bandura's reciprocal interaction theory's application to people with learning disabilities. The nature of the relationship between social incompetence and students with learning disabilities has formed the basis of many studies. However, the application of Bandura's triad to define the relationship between the child's subtype of learning disability and his or her social skills use was novel. The dearth of research literature in this area restricted access to other findings, potential problems, possible strategies, and avenues of thought that possibly would have provided guidance in this study.

All research with human subjects involves consent, so this study used a volunteer sample of participants. The study of social skills use was very touchy for parents whose children with learning disabilities also experienced significant social skills deficits. Several parents did not provide their consent for their children to be exposed to what they feared would be further highlighting of their child's social incompetence. Additionally, after the objectives of the study and their child's short time commitment were explained, several parents responded they would check with their child to see if they thought participation would be "fun." With this criterion for evaluating the study,

some potential participants did not perceive it as fun and were no longer potential participants. The school's permission for this study to be conducted was tentative at best, so great care was exercised in all areas.

All observations for the study were conducted in the school's cafeteria. If observations were also conducted at another location or event, the collected data could have varied from what was garnered in the cafeteria. Each participant participated in only 1 interview. Additional interviews could have increased the depth and breath of data collected.

Contributions to the Literature

This study juxtaposed certain elements of inquiry in a possibly innovative way that diverged from published research on the social skills use of adolescents with learning disabilities. The results suggest a different research perspective relating students with learning disabilities, their LD subtypes, and associated types of social incompetence. Bandura's theory of reciprocal interaction was the vehicle which supported, organized, and propelled the analysis in this study. The results suggest that adolescents with certain subtypes of LD in the population studied were deficient in attending to and processing information from their environment, which, in turn, negatively influenced their social interactions.

In this study, with this particular population of adolescents with learning disabilities, the participants were viewed by themselves, their teachers, and parents as exhibiting varying degrees of socially competency. Both the frame of reference which sets the standard and the relationship of the evaluator to the participant were critical in the ranking and assessment of social competence. Similar to other research, there were no findings that related cognitive ability to social competence in this population.

However, there were 494 observed errors, which indicated numerous instances, both large and small, of social incompetence (see Table 16). These instances occurred mostly in the environmental and behavioral areas (see Table 17). The findings from the 2 sets of data conclusively indicated the participants experienced most of their errors from disruptions in their processing of environmental information and from selection of incorrect motor responses. These students, as reported by all data sources, were socially competent to some degree. However, the students' social skills use was affected by deficits in their information processing in 2 of Bandura's triadic determinants: environment and behavior. The disruptions in those determinants interfered with the nature of the bidirectional action among the components. A balance between the determinants was necessary for the system to exist in a state of dynamic equilibrium and to enable successful social interaction. When any 1 of the determinants was disrupted, equilibrium was not maintained, and errors occurred in social skills use. The findings suggested the participants experienced disruptions in the environmental and behavioral determinants that related to their social competence. Their errors of social judgment aligned with the symptoms of the examined subtypes of learning disabilities. This finding indicated the type of social incompetence was related to the subtype of learning disability in these participants.

Recommendations

Hundreds of thousands of school children and adults are learning disabled. The phrase suggests a negative bias to a condition that is more appropriately termed *learning different*. These children are only truly disabled if diagnosis and remediation are delayed until a wide divergence becomes apparent between the child's intellect and

achievement. In many cases, low social skills use coexists with the learning disability, exacerbating the problems. If the learning disability diagnosis is not made until the student has experienced significant failure, the gap between ability and academic achievement may never be bridged. Similarly, if social skills interventions are not instituted early, the child may be stigmatized by social interaction failures both in and out of the classroom.

In this study, the participants' subtypes of learning disabilities were categorized with a perspective focused on necessary instructional strategies to facilitate their academic success. The type of social skills curriculum used at the school in which the study was conducted is recommended. The positive perceptions of the participants' social skills use as indicated by the data sources suggested the participants recognized the components in the curriculum. This finding was noted in their interview comments, particularly when queried about where they learned about social skills. To further enhance the effectiveness of a social skills curriculum, such as Choices, a specific subtype definition and diagnosis with focused curriculum and instructional methods tailored to the designated information processing deficit would benefit the child, his or her social skills use, and accelerate his or her learning process. The findings from this study, with emphasis on triadic components, could serve as the basis of those curricular decisions.

Further exploration of the Banduran triad in which a child with learning disabilities experiences social miscuing could prove fruitful. If research identifies the type of social behaviors the child is deficient in performing due to a specific learning disability, then social skills interventions could be more effective and efficient. A blanket type of social

skills intervention for all students with learning disabilities is akin to an identical prescription for everyone. Conversely, investigating children within a learning disability subtype could help define areas of possible social incompetence that would be basic to social skills intervention efforts. In these areas, further exploration is needed.

Further study could be conducted to investigate the relationship between learning disabilities in adolescents and depression. Additional research on social skills of adolescents with learning disabilities with a focus on gender could provide valuable information. This study involved intense scrutiny of 26 participants for several months. A longitudinal study to collect data over an extended period of time could provide an additional perspective on the social skills use of adolescents with learning disabilities. This study's participants had at least 2 years exposure to the social skills curriculum, Choices. Additional study could be conducted with similar participants and methodology, but without consistent, long term exposure to a social skills curriculum. The additional data 's comparison to this study's data could be useful to determine the affect of the social skills curriculum on the findings of research question 1: Does the language processing disorder of children with learning disabilities contribute to their general decreased social competency as viewed through the application of Bandura's reciprocal interaction? Social interaction and academic achievement of adolescents with learning disabilities may be improved through application of Bandura's theoretical framework of reciprocal interaction.

APPENDIX A

OBSERVATION CHECKLIST

DEFINITIONS OF SPECIFIC BEHAVIORS IN OBSERVATION INVENTORY

INTER-RATER RELIABILITY OF OBSERVATION INSTRUMENT

Observer_____ Participant_____
Date_____ Duration_____ Time interval_____

Observation Checklist

Choices Category	Triad Category	Specific behavior	Occurrence
1. Communication	**Environment**	**Verbal**	
		Tone of voice overly excited or angry	
		Speaking too loudly or softly	
		Words difficult to understand	
		Speaking too rapidly, or too slowly	
		Voice pitched too high or whining	
		Inappropriateness of words; wrong time & or place	
		Nonverbal	
		Lack of facial affect, disinterested	
		Not looking into other's eyes when speaking	
		Gestures that are confusing or rude	
		Walking too rapidly, marching, or foot dragging	
		Touching inappropriately	
		Proximity invades another's personal space	
		Personal appearance is dirty or messy	
2. Attitude	**Cognitive**	Negative outlook shown by words and mannerisms	
		Too low or high self-esteem – pitiful me syndrome	
		Lack of consideration: low empathy or sensitivity	
3. Problem solving	**Cognitive**	Cannot determine cause of problem	
		Do not consider possible actions or consequences	
		Do not take positive action to solve problem	
4. Community awareness & responsibility	**Behavior**	Not listening to others: talking egocentrically	
		Bullying	
		Boasting	
		Dishonesty	
		Clowning	
		Not caring for self	
		Not caring for others	
		Not caring for things (destructive)	
5. Self-discipline & self-control	**Behavior**	Being too timid, not appropriately self-assertive	
		Not displaying respect for self, others or property	
		Not displaying integrity or truthfulness	
		Not staying with a task until completed	
		Not communicating feelings, or inappropriate communication	
6. Specific social skills	**Environment**	Not waiting for turn	
		Not apologizing when wrong	
		Interrupting	
		Not using acceptable table manners	
		Not asking permission for exemptions to rules	
		Not following stated rules	
7. Social skills misuse	**Environment**		

Operationalized Definitions of Specific Behaviors in Observation Inventory

1. Tone of voice overly excited or angry:

   Voice tone not calm, but emotional or overwrought.

2. Speaking too loudly or softly:

   Voice too loud for circumstances, or difficult to hear.

3. Words difficult to understand:

   Words lack clarity or correct pronunciation.

4. Speaking too rapidly, or too slowly:

   Cadence inappropriately rapid or sluggish.

5. Voice pitched too high or whining:

   Voice unnaturally high, or with a complaining sound.

6. Inappropriateness of words:

   Words that are unsuitable, or used inappropriately with the person or situation.

7. Lack of facial affect:

   No facial expression or displaying a lack of interest.

8. Not looking into other's eyes when speaking:

   No eye contact with other person in interaction.

9. Gestures that are confusing or rude:

   Generally inappropriate gestures, or erratic and meaningless movements

(list continues)

Operationalized Definitions of Specific Behaviors in Observation Inventory *(continued).*

10. Walking too rapidly, marching, or foot dragging:

    Unnatural gait.

11. Touching inappropriately:

    Physical contact with another that is too personal, unsuitable, or undesired.

12. Proximity invades another's personal space:

    Less than 18 inches from another person, or inappropriate distance away.

13. Personal appearance is dirty or messy:

    Lack of personal hygiene or disheveled appearance.

14. Negative outlook shown by words and /or mannerisms:

    Constant facial affect or words of sadness, desperation, irritation or anger.

15. Too low or high self-esteem:

    "Pitiful me" syndrome, displaying greatly diminished or exaggerated self-concept.

16. Lack of consideration: low empathy or sensitivity:

    Saying or doing unkind things to another, usually thoughtless comments.

17. Cannot determine cause of problem:

    Does not attempt to establish the origin of the difficulty.

(list continues)

Operationalized Definitions of Specific Behaviors in Observation Inventory *(continued).*

18. Do no consider possible actions or consequences:

    Acts without thinking of implications of actions.

19. Do not take positive action to solve a problem:

    Does not correct a difficulty or formulate a strategy to rectify the situation.

20. Not listening to others; egocentric talk:

    Does all the talking, or focus all attention on self.

21. Bullying:

    Intimidation or real or threatened aggression towards another.

22. Boasting:

    Bragging; attempting to highlight self as being superior to others.

23. Dishonesty:

    Lying, stealing, cheating, deceit or treachery.

24. Clowning:

    Inappropriate playing around, excessive joking or being silly.

25. Not caring for self:

    Putting self in dangerous or foolhardy situations, lack of personal hygiene or disheveled appearance.

26. Not caring for others:

    Being inconsiderate, rude, selfish or aggressive.

(list continues)

Operationalized Definitions of Specific Behaviors in Observation Inventory *(continued).*

27. Not caring for things (destructive):

Being destructive of one's own or others property.

28 Being too timid, not appropriately self-assertive:

Not being a self-advocate, such as asking for help or notifying others when one has been misunderstood.

27. Not displaying respect for self, others, or property:

Displaying a lack of value for others, self, or property signified by a variety of negative actions such as being dirty or exceedingly disarrayed.

Table 27

Inter-rater Reliability of Observation Instrument

Question	Observer A	Observer B	Observer C
1	X	-	-
2	-	X	-
3	X	X	X
4	-	-	-
5	-	-	-
6	X	X	X
7	X	X	X
8	X	-	-
9	-	-	-
10	-	-	-
11	-	-	-
12	-	-	-
13	-	-	-
14	-	-	-
15	-	-	-
16	-	-	-
17	-	-	-
18	X	X	X

(*table continues*)

Table 27 (*continued*).

Question	Observer A	Observer B	Observer C
19	-	-	-
20	-	-	-
21	-	-	-
22	-	-	-
23	X	X	-
24	-	-	-
25	X	-	-
26	-	-	-
27	-	X	-
28	-	-	-
29	-	-	-
30	-	-	X
31	-	-	-
32	X	X	-
Total	9	8	5

APPENDIX B

INTERVIEW PROTOCOL FOR STUDENT PARTICIPANTS

NODE STRUCTURE FOR CODING INTERVIEW DATA

Interview Protocol for Student Participants

Questions note which component of Bandura's triad of factors in reciprocal interaction is most appropriate to the question.

1. [cognitive] What does the term "social skills" mean to you?

   Can you give me some examples of what you consider to be social skills?
2. [environment] How do *you* learn social skills?
3. [environment] Would you care if you believe your social skills are at one level, and others saw you at a very different level? Why?
4. [environment] How does your use of different social skills influence how others react to you?
5. [cognitive] How do you decide when to use different social skills?
6. [cognitive] Give an example of a social situation when you believe you were misunderstood.
7. [environment] Give an example of a social situation when you have misunderstood someone else.
8. [behavior] What kinds of things do you do to clear up misunderstanding in a social situation?

Node Structure for Coding Interview Data

Tree Hierarchical Structure

I. Base Data of participants

- A. Gender
  - 1. Male
  - 2. Female
- B. Years of Choices
- C. Primary LD Diagnosis
  - 1. Reading disorder/ names
  - 2. Auditory processing disorder/ names
  - 3. Receptive/expressive disorder/names
  - 4. LD NOS/ names
  - 5. NLD/ names
  - 6. GPA
- D. Extracurricular activities
- E. SSRS scores
- F. Participant's names

II. Social Skills

- A. Study definitions
  - 1. Interaction
- B. Student social skills examples

(*tree structure continues*)

Node Structure for Coding Interview Data (*continued*).

III. Categories of social skills

- A. Most important/ why?
- B. Hardest/ why?
- C. Easiest/ why?

IV. Learning social skills

- A. Acquisition
  - 1. Observation
  - 2. Direct instruction
  - 3. Trial and error
- B. Performance decision

V. Self-perception

- A. Likert assessment
  - 1. Care if others rated differently
  - 2. Relationship to “judger”
- B. Verbal assessment

VI. How your social skills influence others?

VII. Social incompetence

- A. Self misunderstood example
- B. Student misunderstood example
  - 1. Participant takes blame
  - 2. Situation could not be “read”

(*tree structure continues*)

Node Structure for Coding Interview Data (*continued*).

C. How did participant “fix” the misunderstanding?

1. Adult help

2. Let problem go

VIII. Bandura’s cognitive determinant

A. Intellectual

Beliefs, attitudes, expectations, thoughts

B. Personal

Emotions, temperament

IX. Bandura’s behavioral determinant

A. Observable factors

1. Motor responses

2. Facial affect

3. Body language

B. Verbal

Tone, inflection, volume, rate

C. Social interactions

X. Bandura’s environmental determinant

A. Physical surroundings

1. Home

2. School

3. Public [not school]

(*tree structure continues*)

Node Structure for Coding Interview Data (*continued*).

B. Human surroundings

1. Family
2. Adults [not family]
3. Friends/peers
4. Strangers

C. Social influences

1. Explicit rules
2. Implicit rules
3. Social feedback

XI. How does participant decide which social skills to use?

Free nodes

1. Hyper
2. Talk about me
3. Appropriate
4. Interaction concept
5. Defense
6. Lack of trust
7. Loss of control
8. Problems around food
9. Parental disapproval
10. Negative feelings about self

(*tree structure continues*)

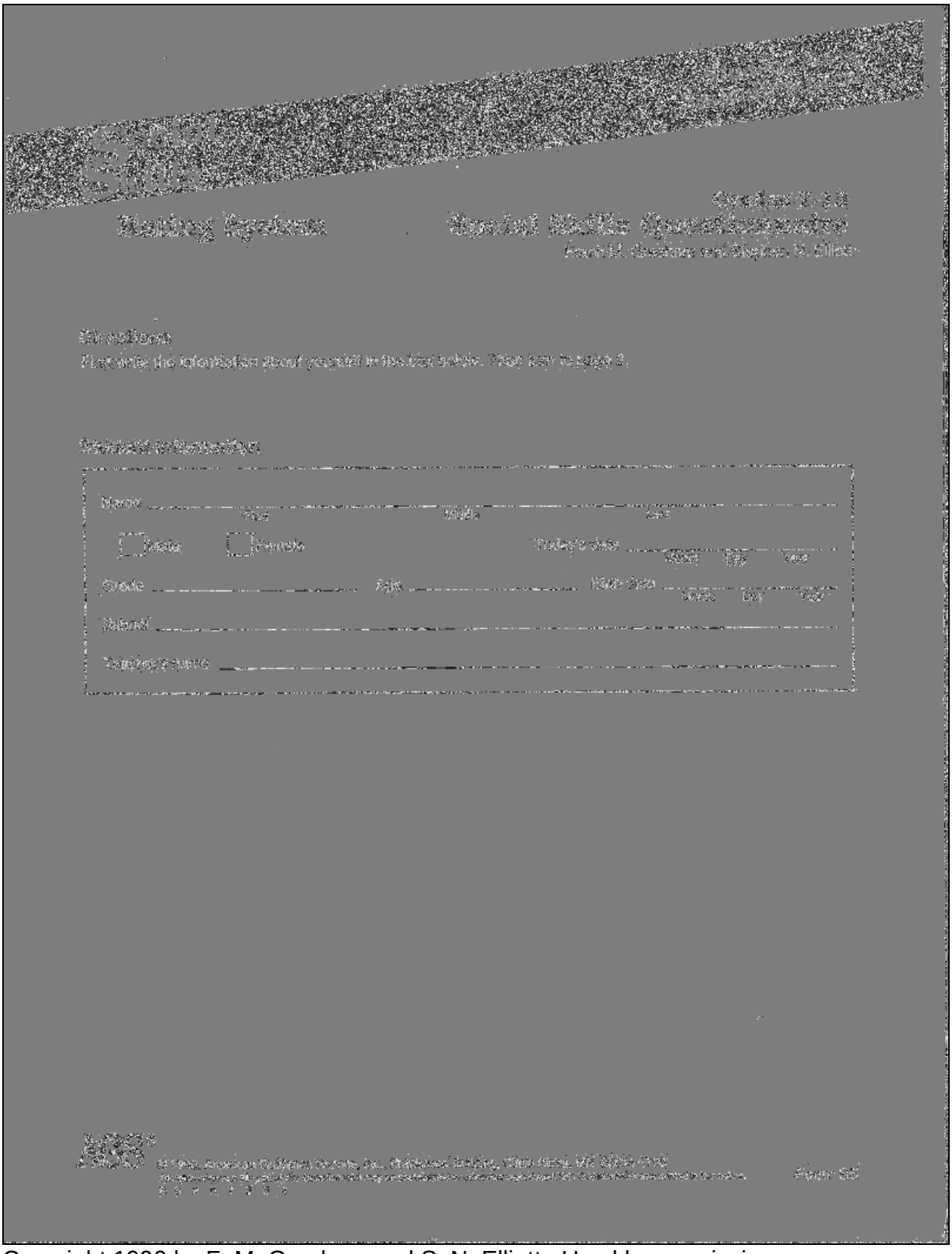
Node Structure for Coding Interview Data (*continued*).

11. Highest social competency factors

12. Lowest social competency factors

APPENDIX C

TITLE PAGES OF STUDENT, TEACHER, AND PARENT VERSIONS OF SSRS



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Social Skills
Rating System

Grades 7–12
Social Skills Questionnaire

Frank M. Gresham and Stephen N. Elliott

Directions

This questionnaire is designed to measure how often a student exhibits certain social skills and how important those skills are for success in your classroom. Ratings of problem behaviors and academic competence are also requested. First, complete the information about the student and yourself.

Student Information

Student's name ______ (First) ______ (Middle) ______ (Last) Date ______ (Month) (Day) (Year)

School ______ City ______ State ______

Grade ______ Birth date ______ (Month) (Day) (Year) Sex: ☐ Female ☐ Male

Ethnic group (optional)

☐ Asian ☐ Indian (Native American)
☐ Black ☐ White
☐ Hispanic ☐ Other ______

Is this student handicapped? ☐ Yes ☐ No

If handicapped, this student is classified as:

☐ Learning disabled ☐ Mentally handicapped
☐ Behavior disordered ☐ Other handicap (specify) ______

Teacher Information

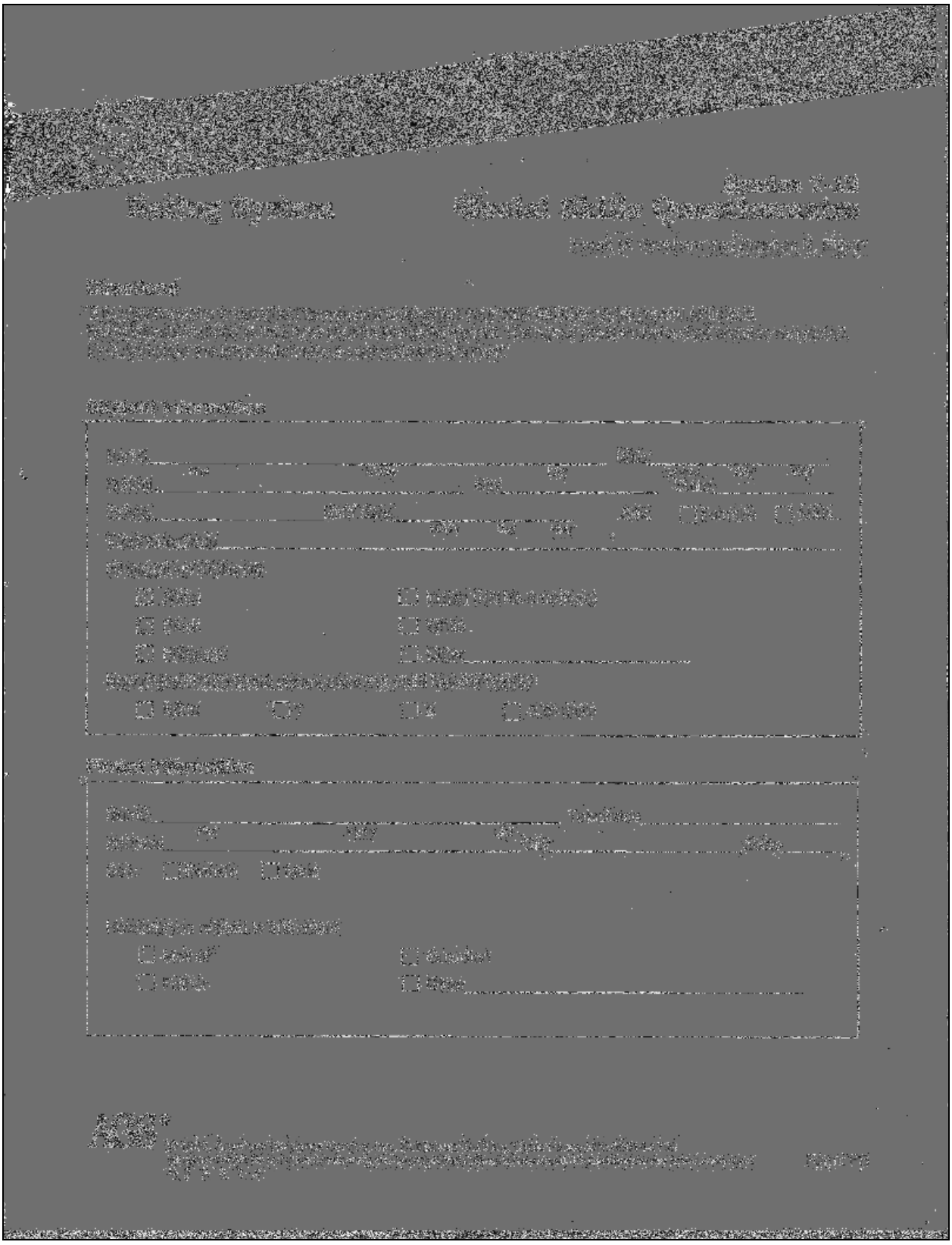
Teacher's name ______ (First) ______ (Middle) ______ (Last) Sex: ☐ Female ☐ Male

What is your assignment?

☐ Regular ☐ Resource ☐ Self-contained ☐ Other (specify) ______

B C D A 7 6 5

Form: TS



APPENDIX D

ITEM ANALYSIS OF STUDENT SSRS

ITEM ANALYSIS OF TEACHER SSRS

ITEM ANALYSIS OF PARENT SSRS

ITEM ANALYSIS OF STATEMENTS IN STUDENT AND TEACHER SSRS

Table 28

Item Analysis of Student SSRS

Question	Total score	*z* Score
1	52	1.75
2	49	1.23
3	31	-1.23
4	41	.18
5	51	1.58
6	52	1.75
7	33	-.00
8	44	.53
9	42	.35
10	29	1.23
11	45	.70
12	51	1.58
13	58	2.48
14	45	.70
15	41	.18
16	49	1.23
17	51	1.58
18	40	.00

(*table continues*)

Table 28 (*table continued*).

Question	Total score	*z* Score
19	29	-1.23
20	29	-1.23
21	42	.35
23	28	-1.58
24	54	1.93
25	41	.18
26	54	1.93
27	50	1.40
28	24	-2.11
29	47	1.05
30	59	2.63
31	47	1.05
32	41	.18
33	32	-1.05
34	45	.70
35	29	-1.40
36	50	1.40
37	46	.88

(*table continues*)

Table 28 (*continued*).

Question	Total score	*z* Score
38	49	1.23
39	49	1.23
40	46	.88

Table 29

Item Analysis of Teacher SSRS

Question	Raw score	*z* Score
1	42	1.07
2	38	.36
3	37	.18
4	42	1.07
5	37	.18
6	31	-.89
7	40	.71
8	32	-.71
9	36	.00
10	28	-1.43
11	32	-.71
12	40	.71
13	35	-.18
14	30	-1.07
15	30	-1.07
16	39	.54
17	37	.18
18	38	.36

(*table continues*)

Table 29 (*continued*).

Question	Raw score	*z* Score
19	36	.00
19	38	.36
20	32	-.71
21	39	.54
22	42	1.07
23	45	1.96
24	40	.71
25	35	-.18
26	25	-1.96
27	25	-1.96
28	38	.36
29	33	-.54

Table 30

Item Analysis of Parent SSRS

Question	Raw Score	*z* Score
1	37	.00
2	18	-2.83
3	23	-.09
4	46	1.64
5	35	.30
6	26	1.64
7	38	.15
8	32	- .75
9	38	.15
10	39	.30
11	26	-1.64
12	36	.15
13	44	1.04
14	45	1.19
15	15	-3.28
16	31	-.90
17	44	1.04
18	38	.15

(*table continues*)

Table 30 (*continued*).

Question	Raw Score	*z* Score
19	39	.30
20	40	.45
21	44	1.04
22	39	.30
23	34	.45
24	44	1.04
25	38	.15
26	44	1.04
27	30	-1.04
28	24	-1.94
29	45	1.19
30	32	-.75
31	29	-1.19
32	50	1.94
33	44	1.04
34	40	.45
35	38	.15
36	47	1.49
37	45	1.19

(*table continues*)

Table 30 (*continued*).

Question	Raw Score	*z* Score
38	49	1.79
39	35	-.30
40	38	.15

Table 31

Item Analysis of Analogous Statements in Student and Teacher SSRS

Paired statements	13	19	18	15	19	24	23	28
Participant 3	2	1	2	0	1	0	2	0
Participant 13	2	2	1	2	2	2	2	1
Participant 14	1	1	1	1	1	0	2	0
Participant 17	2	1	1	0	1	0	2	0
Participant 22	2	2	0	2	2	1	2	2
Participant 24	2	2	2	2	2	2	1	1
Total	11	9	7	7	9	5	11	4
Percent	88	72	49	49	72	40	88	32

Paired statements	26	21	29	25	30	22	34	23
Participant 3	2	0	2	1	1	1	1	1
Participant 13	2	1	2	2	1	2	0	2
Participant 14	2	0	2	0	2	1	1	1
Participant 17	2	0	2	1	1	1	1	1
Participant 22	2	2	2	2	1	2	0	2

(*table continues*)

Table 31 (*continued*).

Paired statements	26	21	29	25	30	22	34	23
Participant 24	1	2	2	2	1	2	1	2
Total	11	5	12	8	7	9	4	9
Percent	88	40	100	64	56	72	32	56

Paired statements	34	11	35	29	38	18
Participant 3	1	1	2	1	2	1
Participant 13	0	1	10	2	2	2
Participant 14	1	1	1	1	2	1
Participant 17	1	0	1	1	1	0
Participant 22	0	1	2	2	2	2
Participant 24	1	2	2	2	1	2
Total	4	6	8	9	10	8
Percent	42	50	64	72	80	64

APPENDIX E

PARTICIPANT'S IQ MEASUREMENT

Table 32

Participant's IQ Measurement

Participant	IQ	*z* Score
1	76	-1.79
2	88	-.93
3	112	.79
4	121	2.00
5	93	-.57
6	126	1.79
7	108	.50
8	95	-.43
9	121	1.43
10	117	1.14
11	83	-1.29
12	97	-.29
13	102	.07
14	97	-.29
15	86	-1.07
16	78	-1.64
17	94	-.50

(*table continues*)

Table 32 (*continued*).

Participant	IQ	*z* Score
18	114	.93
19	108	.50
20	95	-.43
21	113	.86
22	83	-1.29
23	111	.71
24	104	.21
25	106	.36
26	101	.00
Average	101	

APPENDIX F

OBSERVATION SCHEDULE

OBSERV ATIONS BY DETERMINANT AND SOCIAL ERRORS

PARTICIPANTS, THEIR LD DIAGNOSIS, AND OBSERVATION SCORE

PARTICIPANTS BY DIAGNOSIS, WITH OBSERVATION SCORES

Z SCORES FOR 3 SSRS FORMS, OBSERVATION, AND IQ

Observation Schedule

Round 1: 8/22-9/8

22	Participant 2,	Participant 3
23	Participant 4,	Participant 5
24	Participant 6,	Participant 7
25	Participant 8,	Participant 9
26	Participant 10,	Participant 11
29	Participant 13,	Participant 14
30	Participant 15,	Participant 16
31	Participant 17,	Participant 18
1	Participant 19,	Participant 20
2	Participant 21,	Participant 22
	Participant 23,	Participant 24
7	Participant 25,	Participant 26
8	Participant 1,	Participant 12

Round 2: 9/12-9/29

12	Participant 2,	Participant 3
13	Participant 4,	Participant 5
14	Participant 6,	Participant 7
15	Participant 8,	Participant 9
16	Participant 10,	Participant 11
19	Participant 13,	Participant 14
20	Participant 15,	Participant 16
21	Participant 17,	Participant 18
22	Participant 19,	Participant 20

(*schedule continues*)

Round 2: 9/12-9/29 (*continued*).

26	Participant 21,	Participant 22
27	Participant 23,	Participant 24
28	Participant 25,	Participant 26
29	Participant 1,	Participant 12

Round 3: 10/3-10/21

3	Participant 2,	Participant 3
4	Participant 4,	Participant 5
5	Participant 6,	Participant 7
6	Participant 8,	Participant 9
10	Participant 10,	Participant 11
11	Participant 13,	Participant 14
12	Participant 15,	Participant 16
13	Participant 17,	Participant 18
17	Participant 19,	Participant 20
18	Participant 21,	Participant 22
19	Participant 23	Participant 24
20	Participant 25,	Participant 26
21	Participant 1	Participant 12

Round 4: 10/24-11/16

24	Participant 2,	Participant 3
25	Participant 4,	Participant 5
26	Participant 6,	Participant 7
27	Participant 8,	Participant 8
31	Participant 10,	Participant 11

(*schedule continues*)

Round 4: 10/24-11/16 (*continued*).

1	Participant 13,	Participant 14
2	Participant 15,	Participant 16
7	Participant 17,	Participant 18
8	Participant 19,	Participant 20
9	Participant 21,	Participant 22
14	Participant 23,	Participant 24
15	Participant 25,	Participant 26
16	Participant 1,	Participant 12

Table 33

4 Observations Totaled by Associated Determinant and Number of Social Errors

Participant	Cognitive	Environment	Behavior	Total
1	1	1	2	4
2	5	7	4	16
3	2	8	2	12
4	2	10	7	19
5	2	9	3	14
6	6	7	6	19
7	1	4	7	12
8	2	3	6	11
9	1	10	13	24
10	2	3	3	8
11	12	13	16	41
12	2	6	6	14
13	1	8	8	17
14	4	6	3	13
15	6	10	6	22
16	4	0	3	7
17	7	18	13	38
18	1	4	6	11

(*table continues*)

Table 33 (*continued*).

Participant	Cognitive	Environment	Behavior	Total
19	0	1	4	5
20	19	19	14	52
21	5	27	17	49
22	2	4	5	11
23	7	33	17	57
24	3	4	5	12
25	1	5	0	6
26	1	7	3	11
Total	90	225	179	494

Table 34

Participants, their LD Diagnosis, and Observation Score

Participant	LD Diagnosis	Observation Score
1	LD not otherwise specified	.72
2	recessive/expressive LD	.14
3	reading disability	.34
4	auditory processing disability	.00
5	reading disability	.24
6	reading disability	.00
7	reading disability	.34
8	reading disability	.38
9	reading disability	-.24
10	reading disability	.52
11	incalculia	-1.05
12	reading disability	.24
13	LD not otherwise specified	.01
14	reading disability	.29
15	recessive/expressive LD	.14
16	recessive/expressive LD	.57
17	nonverbal learning disability	.91

(*table continues*)

Table 34 (*continued*).

Participant	LD Diagnosis	Observation Score
18	LD not otherwise specified	.38
19	reading disability	.67
20	nonverbal learning disability	-1.15
21	reading disability	-1.44
22	recessive/expressive LD	.38
23	recessive/expressive LD	-1.82
24	reading disability	.43
25	nonverbal learning disability	.62
26	reading disability	.38

Table 35

Participants Grouped by Diagnosis, with Observation Scores

Participant	LD Diagnosis	Observation Score
4	auditory processing disability	.00
13	LD not otherwise specified	.01
18	LD not otherwise specified	.38
1	LD not otherwise specified	.72
11	incalculia	-1.05
20	nonverbal learning disability	-1.15
25	nonverbal learning disability	.62
17	nonverbal learning disability	-.91
5	reading disability	.24
6	reading disability	.00
7	reading disability	.34
8	reading disability	.38
9	reading disability	-.24
10	reading disability	.52
12	reading disability	.24
14	reading disability	.29
19	reading disability	.67

(*table continues*)

Table 35 (*continued*).

Participant	LD Diagnosis	Observation Score
21	reading disability	-1.44
24	reading disability	.43
26	reading disability	.38
3	reading disability	.34
15	recessive/expressive language disability	-.14
16	recessive/expressive language disability	.57
22	recessive/expressive language disability	.38
23	recessive expressive language disability	-1.82
2	recessive/expressive language disorder	.14

Table 36

Z Scores for Student, Teacher, and Parent SSRS, Observations, and IQ

Participant	Student SSRS *z* Score	Teacher SSRS *z* Score	Parent SSRS *z* Score	Observations *z* Score	IQ *z* Score
Reading Disability					
3	. 78	- 1.33	1.06	.50	.79
5	-1.30	.16	.12	.36	-.57
6	1.69	1.09	1.65	.00	1.79
7	.26	-.94	-.35	.50	.50
8	1.04	.47	-2.00	.57	-.43
9	.65	.23	-.47	-.36	1.43
10	.91	.47	-.71	.79	1.14
12	.91	-.47	.82	.36	-.29
14	.52	-1.25	-.24	.43	-.29
19	1.95	1.41	.94	1.00	.50
21	1.04	-.31	-.94	-2.14	.86
24	.52	1.33	.35	.64	.21
26	l.69	1.41	-.59	.57	.00

(*table continues*)

Table 36 (*continued*).

Participant	Student SSRS	Teacher SSRS	Parent SSRS	Observations	IQ
	Z Score	*z* Score	*z* score	*z* Score	*z* Score
Receptive/Expressive Language Disorder					
2	1.17	-.47	.47	2.14	-.93
15	-.13	- .70	.82	-2.14	-1.07
16	.78	.47	.94	.86	-1.64
22	-.39	.78	- 2.47	.57	-1.29
23	-1.04	-.86	-1.53	-2.71	.71
Nonverbal Learning Disability					
17	.26	-1.64	.24	-1.36	-.50
20	1.17	.08	1.41	-1.71	-.43
25	1.95	-.94	.47	.93	.36
LD not otherwise specified					
1	1.95	.39	1.18	1.07	-1.79
13	-.13	.94	-1.29	.14	.07
18	1.17	.31	.94	.57	.93

(*table continues*)

Table 36 (*continued*).

Participant	Student SSRS *z* Score	Teacher SSRS *z* Score	Parent SSRS *z* score	Observations *z* Score	IQ *z* Score
Auditory Processing Disorder					
4	1.43	.31	1.06	.00	2.00
Incalculia					
11	.39	-.80	.35	-1.57	-1.29

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