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THE DEVELOPMENT OF PERSPECTIVE-TAKING SKILLS AND ITS RELATIONSHIP TO THE DEVELOPMENT OF PERCEIVED COMPETENCIES AND SELF-ESTEEM IN BOYS WITH AND WITHOUT LEARNING DISABILITIES

The Ohio State University

Ph.D. 1982

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AND ITS RELATIONSHIP TO THE DEVELOPMENT OF
PERCEIVED COMPETENCIES AND SELF-ESTEEM IN
BOYS WITH AND WITHOUT LEARNING DISABILITIES

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Edward Dennis Waller, B.A., M.A.

*****

The Ohio State University

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DEDICATED TO MY WIFE NANCY AND
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INTRODUCTION

The number of children identified as learning disabled grew rapidly from the late sixties through the present. Strichart and Gottlieb (1981) reported that 120,000 children were identified as learning disabled in 1969; 648,000 in 1970, and by 1978 this figure rose to 1,135,559 LD children in the nation's public schools.

Because of the confusion with regard to the criteria used to classify children as learning disabled over the years, the prevalence estimates are the most discrepant of all the categories of special education (Hallahan and Kauffman, 1976). Meier (1976) reported that a conservative estimate of the prevalence of learning disabilities among school age children is about ten percent. In addition, more males are classified as learning disabled than females.

Research in the area of learning disabilities has been confronted with many controversies over the definition of a learning disability. It has been this inability to clearly delineate the characteristics of this disorder that
has raised problems for the research done in this area. The confusion and ambiguities that exist within the confines of learning disabilities have resulted in a congregation of data that has not yet been analyzed and integrated into a meaningful description of development.

One of the most recent definitions of "specific learning disabilities" has been proposed by the Federal Register (1977). Since this definition was adopted, more and more researchers have been using it in studies in order to maintain definitional consistency. In this study, learning disabilities were defined according to the definition proposed by the Federal Register (1977, p. 42478):

Specific learning disability means a disorder in one 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 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 learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage.

Most of the research on learning disabilities have generally focused on diagnosis, academic remediation, and cognitive development. However, the more recent research
has shifted its attention to other developmental facets of the LD child, particularly, social and emotional development. Although these initial attempts at exploring the learning disabled child's development in noncognitive areas have been few thus far, the growing realization and recognition of the importance of a child's social and emotional development becomes crucial for understanding the pervasive effects of this disorder. The body of research that has addressed social and emotional development will eventually contribute to an adequate developmental model of learning disabilities. In addition, the studies should have heuristic value in generating crucial research questions concerning the development of the LD child. The responsibility for effective remediation will be borne not only by educators, but also clinicians who can contribute to the understanding of the LD child's development in nonacademic areas.

Previous research has revealed numerous problems associated with learning disabilities, other than academic failures. Difficulties have been found to exist in the areas of peer interactions. A number of investigators have found LD children to be viewed more negatively than their nonLD peers and to be less popular with peers (Bryan and Wheeler, 1972; Bryan, 1974a; Schworm, 1979; Tarver and
Hallahan, 1974; Bmyan, 1974b, 1976; Bruininks, 1978; Charlesworth and Hartup, 1967; Hartup et al., 1967; Siperstein et al., 1978). Other studies have also found that other people, especially teachers, perceive the LD child more negatively than the nonLD child (Bryan and McGrady, 1972; Foster and Salvia, 1977; Vance and Wallbrown, 1979; and Algozzine and Sutherland, 1977).

Finally, the area of language and communication skills relating to social interactions of LD children have been shown to be different from nonLD children. LD children have been found to have difficulties in comprehending and interpreting nonverbal communication (Bryan, 1977; Wiig and Harris, 1974), tend to make more competitive and rejection statements than nonLD children (Bryan et al., 1976), are unable to shift syntactic complexity when communicating with younger children (Bryan, 1978), and experience more difficulty in integrating and recalling relatively complex social behaviors in spite of numerous verbal and visual cues (Schwartz and Bryan, 1971).

These social problems, in addition to academic difficulty, may have deleterious effects on how LD children think and feel about themselves. Studies on self-concept and self-esteem in LD children suggest that such effects may indeed be present.
The general social-emotional development of children is an important aspect in developing adequate self-concepts and self-esteem. Harter (1978) discussed the importance of the child's early socialization history on the development of competence. Younger children tend to base their successful experiences on social feedback from significant others. Thus, their objective success or failure has no influence on their evaluations of how well they do on performance tasks. Therefore, it appears that deficiencies in social development of LD children might have deleterious effects on how they think and feel about themselves. The aim of this study was to investigate the development of perceived competencies and general self-esteem in LD children and the possible influence of one variable, perspective-taking abilities, on this process. In order to provide a conceptual framework for the development of self-concept and self-esteem in LD children, the literature on the development of self-concept and self-esteem in normal children will be examined first.

REVIEW OF THE LITERATURE

A. **Self Concept and Self-Esteem**

It is important to distinguish between the two constructs of self-concept and self-esteem. Harter (1982)
emphasized that, "The constructs such as self-concept and self-esteem are vaguely defined at the conceptual level and therefore do not point to any clear operational definition," (p. 87). This distinction becomes an important methodological issue in research. Most of the scales used to measure these constructs contain heterogeneous items which are summed to give a total score of self-regard, assuming children do not make distinctions among various aspects in their lives.

1. Differences Between Self-Concept and Self-Esteem

Rogers (1951) defines self as:

An organized configuration of percepts of the self which are admissible to awareness. It is composed of such elements as the perceptions of one's characteristics and abilities; the percepts and concepts of the self in relation to others and the environment; the value qualities which are perceived as associated with experiences and objects; and goals and ideals which are perceived as having positive or negative valence (p. 136-37).

For Rogers, the self is composed of both the self-concepts and the value one attaches to these concepts. According to him, "the self is constantly undergoing change, but the self-concept is slow to change" (p. 507).

Wylie's (1968) distinction between self-concept and self-esteem involves cognitions among classes of objects and events known to the person, such as his/her own charac-
teristics, thoughts, feelings, and behaviors of self-concept. Self-esteem involves agreement between the actual self-concept and ideal self-concept. On the other hand, Yamamoto (1972) views self-concept as a representation of the self. Social interactions are crucial for the development of self-concept because a large part of defining the self pertains to how the individual perceives others as seeing him/herself.

Jones (1973) reviewed a number of studies on self-esteem theories versus self-consistency theories. The former refers to, "the need for self-esteem which is satisfied primarily by the approval one receives from others and is frustrated by their disapproval; in the latter, the individual adjusts his cognitions and orients his relations with others so as to maintain similarity between his evaluations and those he receives from others" (p. 197). Jones believes more support is found for the self-esteem theories.

Perhaps the clearest distinction between self-concept and self-esteem has been made by Calhoun and Morse (1977). First, self-concept is viewed as being the antecedent to self-esteem. Self-concept implies awareness of self which must be present before a value can be attached to these concepts. Self-concept is the way, "an individual
perceives himself in terms of ability, value, worth, limitations, etc... is the substantive description one employs to identify his nature, and is also used by individuals to compare themselves to others" (p. 319).

Self-esteem is subsumed under self-concept. The key element of self-esteem is satisfaction (i.e., personal worth, value, positive or negative value of self). Finally, Calhoun and Morse view self-concept as more stable than self-esteem which can change more readily.

Germain (1978) also had a similar distinction between the two concepts. For him, self-esteem is the feelings and values one has about his/her concepts and beliefs about the self. Value judgments can be made in two ways: 1) norms - compare ourselves to others, and 2) some criteria for competence in a given task.

B. Development of Self-Concept and Self-Esteem in Normal Children

Up to approximately ten months of age, children are unaware that their bodies are distinct from other objects. Perhaps the beginning points of the development of self occurs when "the child learns to recognize that his/her body is a subset of one in a broader set of all human bodies" (Epstein, 1973, p. 412). According to Epstein,
once the body self has been developed, it facilitates the
development of an inferred inner self which is different
from the body self.

Rosenberg (1979) reviewed research on the development
of self-concept in children between the ages of 8 and 17
years. Developmental differences were found among differ­
ent age groups of children as to how they conceptualize
themselves. Children were found to organize and structure
the self concept around seven aspects: (1) physical and
material self, (2) social structure or identity, (3) self
as a social actor or what one does, (4) the self charac­
terized around certain abilities, (5) interests and atti­
tudes, (6) personality traits, and (7) inner thoughts,
feelings and attitudes. Older children 12 and up tend to
conceptualize the self in terms of a psychological interior
(an inner world of thought and feeling) and in terms of
interpersonal traits. Younger children (8-11) tend to con­
ceptualize the self in terms of overt behavioral charac­
teristics or a social exterior, abilities or achievements,
and physical characteristics.

Rosenberg believes these age differences result from
different cognitive processes of children and adolescents.
He speculates that three processes account for these dif­
ferences. First, is the process of introspection. Whereas,
the younger child is egocentric, the older child is more attuned to external reality and is able to think above thought. The second process is that of communication. In order for communication to take place, it becomes essential to have the ability to take the perspective of others. The last process is that of conceptualization. This includes the ability to isolate commonalities of heterogeneous items. It involves a more abstract level of thinking rather than using self-descriptive phrases to express concepts.

Finally, some investigators have examined developmental changes in self-concept. Koocher (1974) used subjects ranging in age from 6-15 years and administered measures of self-concept, other concept, and ideal self-concept. All subjects were classified by their level of cognitive functioning using Piaget's system. Subjects in the preoperational stage did not view others differently from themselves, but the ideal self was viewed as being better than self and other. This finding supports the view that children at this stage do not perceive others as distinct interpersonal entities and the child is not cognitively capable of reciprocity in their interpersonal relations. Formal operational subjects described the ideal self as significantly more positive than either the self or other.
The findings of this study lends strong support to developmental trends in self and other ratings. With increasing levels of cognitive development, the ideal self ratings became more positive. Also, with advanced levels of cognitive development, the ideal self-concept was more discrepant from the self-concept.

Mullener and Laird (1971) examined developmental changes in the organization of self-evaluations in five content areas (achievement, intellectual skills, interpersonal skills, physical skills, and social responsibility) of 7th and 12th graders and adults. They found evidence for developmental changes in the capacity to form differentiated self expressions. Thus, with increasing age, subjects made increasingly more differentiated self-evaluations and the amount of differentiation was found to be related to self-evaluation. That is, subjects who evaluated themselves in undifferentiated terms did so on some global dimension such as good-bad, rather than in terms of specific categories.

These findings suggest that some cognitive process may underlie the development of self-concept and self-esteem. It would seem likely that the ability to decenter (simultaneously take more than one element of a situation into account at one time) would play an influential role in
developmental changes of self-concept and self-esteem. Both studies seemed to support this notion since subjects at advanced levels of cognitive development were able to take more than one aspect about themselves into consideration when evaluating themselves. That is, although they may be deficient in one area, does not necessarily mean they would evaluate themselves negatively. On the other hand, younger children seemed to base their self-evaluations on global distinctions. If they were deficient in one area, they tended to evaluate themselves negatively.

1. Factors that Affect the Development of Self-Esteem and Self Concept

a. Self-Esteem

Coopersmith (1967) found a strong association between child rearing practices and the development of self-esteem. Some of his findings suggest that: 1) mothers of children who are high on self-esteem tend to be high on self-esteem themselves; 2) parents of low self-esteem children stress being acceptable to others, whereas, parents of high self-esteem children place greater emphasis on achievements; 3) children with low self-esteem tend to come from homes marked by divorce, separation, and family discord; 4) parents of children with high self-esteem provide clearer and stronger models on how to effectively handle problems
and decisions; and 5) the parents of high self-esteem children deal with issues directly and realistically.

Others have found an association between maternal anxiety and low self-esteem as measured by the Behavior Rating Form (Samuels & Griffore, 1978). Children with low self-esteem tend to have mothers who use psychological pressure techniques to discipline their children, whereas, high self-esteem children view their mothers as understanding, accepting, and using less drastic forms of punishment (Graybill, 1978).

The research on race and sex differences appears to be more inconsistent in its findings. Samuels & Griffore (1979) found no differences in self-esteem among Black, White, and Mexican American preschoolers (ages 4-1/2 - 5-1/2), and no sex differences were found. They concluded that it is not necessarily true that minority children have lower self-esteem than white children. However, these conclusions appear premature since self-concepts and self-evaluations are still being influenced by the child's interactions which are somewhat limited at this age.

Miller (1975) showed that the environment does influence self-esteem. He found that maternal education and employment status had differential effects on black inner city eighth graders as opposed to white suburban
eighth graders. The self-esteem of inner city black males appears to be affected by the amount of the mother's formal education. Also, a full-time working mother resulted in lower self-esteem for both black inner city males and females, but was less related to white suburban children's self-esteem.

Harter's (1978) developmental conceptualization of effectance motivation involves the motive which impels an organism toward competence and is satisfied by a feeling of efficacy or esteem. The development of this construct depends on the child's transactions with the environment. Social reinforcement is critical during the first several years of life. Reinforcement for independent mastery is crucial. Within a developmental context, social reinforcement from adults in the form of praise and approval is very important to young children. As children become older, evaluations from adults become less important as internalized standards of success and failure play a much larger function in making judgments about the self. Harter also suggests that a closer examination of peer influence on one's self-esteem needs to be addressed during the periods of later childhood and early adolescence.
b. **Self-Concept**

Sears (1970) found that early socialization experiences affects self-concepts in middle childhood. High self-concepts in both males and females have been found to be related to parental warmth and acceptance, high reading and arithmetic achievement, small family size, and early ordinal position in the family. In addition, femininity was found to be associated with poor self-concepts in both males and females.

Cruickshank (1977b) believes that a good self-concept develops from successful experiences, a well-conceived body image, and warm psychological settings. However, learning disabled children tend to control themselves through external stimulation.

According to Bassett (1979), self-concepts are acquired from the expectations other people have for the individual, by comparing ourselves to other people, and by adopting certain characteristics of the roles others play. Thus, behavior should be consistent with one's self view of him/herself. Schmuck and Schmuck (1979) also emphasized expected role functions, social situations, and previous experience with others as a source for self expectations of behavior. Massad (1972), in addition to direct experien-
ces, included verbal and nonverbal communication as a basis for learning one's self-concept.

2. Research on Variables Associated with Self-Esteem

Positive self-esteem has often been associated with achievement and academic success. Houtz & Phillips (1978) investigated the relationship between fourth, fifth, and sixth graders' self-esteem and divergent thinking and evaluative-oriented problem solving abilities. Divergent thinking did not seem to be related to self-esteem which may have been due to the lack of evaluative contexts often associated with convergent thinking.

Rubin, Dorle, and Sandidge (1977) found only a moderate relationship between self-esteem and school achievement and behavior for twelve year old children. It was suggested that perhaps ability and background strongly contribute to one's self-esteem. Thus, this last factor should intervene more with older children than younger ones. For example, Pomerantz (1979) found that the source of satisfaction during adolescence is different between males and females. For males, self-esteem based on achievement is the best predictor of satisfaction and is
dependent on the feedback from others as a source of identity.

O'Donnell (1979) found that adolescent self-reported self-esteem is related to peer reported self-esteem and is influenced by such factors as sex, race, and age. His findings suggest that there is a stronger relationship between self-reported and peer-reported self-esteem for older adolescents than younger ones.

Cook, Goldman, and Olczak (1978) investigated the effect of self-esteem on interpersonal attraction in sixth grade children. It was found that children with high self-esteem were more attracted to peers who were similar in their responses on the Piers-Harris Children's Self-Concept Scale and less attracted to those children whose responses were dissimilar. The authors suggested that high self-esteem subjects attended to more salient social stimuli than low self-esteem subjects.

3. Research on Variables Associated with Self-Concept

Research has shown a strong relationship between self-concept, peer acceptance, and academic achievement (Bassett, 1979; Schmuck & Schmuck, 1979). Leviton (1975) reviewed the research on the relationship between self-concept and academic achievement. He found that research tends to support a consistent, moderate correlation between
these two factors. It was also suggested that self-concept may be an antecedent to academic achievement.

Chang (1976) investigated the relationship among self-concepts, teacher's ratings of self-concepts, and academic achievement in fourth, fifth, and sixth graders. The results indicated a significant relationship between the child's self-concept and the teacher's rating of the child's self-concept, and a significant relationship between the teacher's rating and academic achievement. There were no significant differences in grade levels and sex.

Williams and Cole (1967-68) examined the relationship of self-concept and various dimensions associated with the school setting in sixth graders. They found low, but significant correlations between self-concept, and reading and math achievement, emotional adjustment, mental ability, and social status at school. They presented the idea that schools should incorporate valid measures of self-concept in order to help screen out high risk children who may encounter adjustment problems at school.

In summary, the development of self-concept and self-esteem appear to progress through stages according to the cognitive level of the child. Self-concept, or the awareness of self, precedes self-esteem which is the evaluative component of the self. Changes in these constructs are
most apparent when children enter the preoperational and concrete operational stages of development and again when entering the formal operational stage. Certain cognitive processes have also been found to play a major role in organizing and structuring self-concepts. These processes include: introspection, the ability take another's perspective, through the ability to decenter (simultaneously take more than one element of a situation into account at one time). This later ability permits the child to make increasingly more differentiated self-evaluations.

Studies on self-esteem and self-concept have generally examined environmental factors that interface with the developmental components of self-concept and self-esteem. Some of these factors include parental factors, child-rearing practices, and early socialization. In addition, many studies have focused on descriptive variables associated with self-esteem. These include IQ, race, and primarily academic achievement.

It therefore becomes important to examine the components that may affect the development of self-concept and self-esteem in LD children. Examining certain cognitive processes in LD children, namely perspective-taking abilities, may provide some insight as to why they have
generally been found to have lower self-esteem than nonLD children.

C. Development of Self-Concept and Self-Esteem in Learning Disabled Children

Serafica and Harway (1979) point out that relatively few studies have examined the developmental trends of self-esteem and self-concept in learning disabled children. The majority of studies in this area have examined differences between LD and nonLD children in self-esteem and self-concept. Studies which examine developmental components of these constructs in LD and nonLD children have not been done.

1. Studies on Differences Between LD and nonLD Children on Self-Esteem

Bingham (1980) investigated self-esteem among boys with and without learning disabilities using the Coopersmith Self-Esteem Inventory. She found that preadolescent LD boys had significantly lower self-esteem than preadolescent boys without LD, especially in the area of school related activities. No difference was found in self-esteem between LD and nonLD adolescents. However, their scores on self-esteem were lower than the preadolescent group. She suggested that perhaps some develop-
mental change occurred during adolescence. Further studies are needed to chart the developmental changes in self-esteem.

Rosenthal (1973) noted that dyslexic children scored lower on a self-esteem measure than normal or asthmatic children. However, the self-esteem in dyslexic children seemed to be related to the families' awareness and comprehension of the disorder. That is, higher self-esteem was found in dyslexic children whose families were aware of and comprehended the problems associated with dyslexia.

Similar results were found with children with brain dysfunction (Battle, Blowers, & Yeudall, 1980). Although subjects with brain dysfunctions scored lower on self-esteem than normal children, the difference was not significant.

Thomson and Hartley (1980) also examined self-esteem among dyslexics. They were interested in identifying specific areas of low self-esteem for dyslexic children. The results indicated that dyslexics were generally lower in self-esteem than normals with significant differences on the subscales of school/academic and home/parents.

Lincoln and Chazan (1979) found that LD children perceived themselves as having lower cognitive competence but their self-perceptions of social and physical competen-
cies, as well as general self-esteem did not differ significantly from those of non-LD children.

Garabedian (1981) found no difference between fourth, seventh, and tenth grade LD children and control children on self-esteem. In addition, Jordan (1981) did not find significant differences between LD and nonLD children in the fourth and fifth grades on the measure of self-esteem.

McDonnell (1975) also found that an impaired self-concept was not central to LD children and that improvement was not affected by reinforcing self-esteem. Thus, she found that reinforcing academic achievement for the LD child was more affective than reinforcing self-concepts.

2. Studies on Differences Between LD and nonLD Children on Self-Concept

Wilson (1970) reported that retarded children are usually unaccepted because of their bothersome behaviors. He also pointed out that few studies have shown any type of consistency between self-concept and intellectual status.

As mentioned earlier, there have been numerous investigations comparing the relationship of academic success and self-concept in normal children. The general consensus of these studies has been that a positive relationship between achievement and self-concept does exist. Children who are high achievers generally have
good self-concepts. Leviton (1975) concluded that the self-concept is usually the prior condition to academic success. A normal development of self-concept seems to be a precursor for high achievement levels. If this is true, the variables that influence the development of appropriate self-concepts are very important. Further investigations are needed to substantiate this conclusion since most of the studies have used correlational designs.

There have been relatively few studies done on the relationship between self-concepts and achievement in the learning disabled child. Bryan and Pearl (1979) reviewed the research of self-concepts in LD children. They reported that LD children have been found to have poorer self-concepts as compared to normal children. Larsen, Parker, and Jorjorian (1973) assessed two measures of the self-concept in third and fourth grade LD children using Q-sorts. They found that LD children showed significantly greater discrepancies between the real self and ideal self sorts than normal children.

The studies that have been done have not provided consistent findings. Black (1974) compared two groups of LD children on self-concepts and degree of achievement. One group was retarded in reading, the other LD group had normal reading skills as measured by the reading subtest of
the Wide Range Achievement Test. He found that the LD group with retarded reading skills viewed themselves more negatively than LD children with normal reading skills.

However, Leviton and Kiraly (1974-75) did not find a positive relationship between self-concept and academic achievement in learning disabled children for grades one, two, and three. In addition, they found an inverse relationship for third graders. That is, there was a negative relationship between these two factors, which is contrary to the findings with normal children. They concluded, "the relationship between academic achievement and self-concept for LD children may be different from that of more normal learners" (p. 755). Horne (1975) also found limited support for the relationship between academic success and self-concept.

Since much emphasis has been placed on remediation, placement, and treatment, these must be viewed as viable factors that can influence or change self-concepts. Jones (1977) investigated changes in self-concept and personal social characteristics in LD children following placement and treatment. The instruments used were the Primary Self-Concept Inventory and the Personal Social Rating Scale. No significant changes in self-concept and personal social characteristics in LD children were noted following placement and treatment in the LD program.
The learning disabled child then seems to start with a disadvantage since many LD children experience failure and frustration in school at a very early age. A crucial question must then be addressed. Does a learning disability have a direct effect on self-concepts, or does it have mediating effects on the environment which may lead to the development of poor self-concepts? The research on social development in the LD child does suggest the possibility that the LD child may have perceptual deficits in the area of social skills. Thus, it becomes very important to differentiate between mediating and direct effects that may influence the development of self-concept.

3. Problems in Research with Self-Concept and Self-Esteem

There are a number of shortcomings with research that employs measures of self-concept and self-esteem. First, there are various scales that measure these two constructs. This can make a comparative analysis of research findings extremely difficult. Calhoun and Morse (1977) point out that many researchers use the terms "self-concept" and "self-esteem" synonymously. Thus, when scales measuring self-esteem are used to discuss self-concept and vice versa, the results become even more difficult to untangle.
Therefore, it is imperative that research give careful consideration to operationalizing these constructs.

Burns (1979) also discusses some problems with assessment techniques measuring self-concept. Instruments which have not been tested for reliability and validity often enter into studies. In addition, self-report instruments are susceptible to the subjects' willingness to respond truthfully and a source of error may be affected by social desirability and response acquiescence.

Harter (1982) also points out that many of the instruments used to assess self-esteem and self-concept employ items from a range of diverse content areas. All the heterogeneous items are pooled to arrive at a score which is supposed to reflect some index of global self-regard. Thus, these instruments do not take into account that children may make distinctions about various domains of their lives and perceive themselves differently in each of these domains.

In summary, the area of learning disabilities has a dire need for developmentally oriented designs (Serafica and Harway, 1979). Research has been lacking in cross-sectional and longitudinal designs. The majority of research in the area of self-esteem and self-concept in LD children has primarily focused on differences on these
measures between LD and nonLD children. Most of the research findings have found that LD children usually have lower self-esteem than nonLD children. Studies which examine developmental components of these constructs, which may provide possible explanations to account for these differences, have not been done.

Since the internalization of self-values develops from the child's interaction with his/her environment and feedback from important social agents, the LD child appears to be at a disadvantage. There is growing evidence that LD children present more problems in the area of social skills than nonLD children. One possible factor that may influence the development of self-esteem is that of perspective-taking (taking another person's viewpoint). This ability has been proposed to be an important cognitive process underlying the development of self-esteem (Rosenberg, 1979). Since recent studies by Justice and Beard (1980), Dickstein and Warren (1980), and Weiner (1980) have consistently found LD children to be delayed in perspective-taking abilities, a possible conceptual framework emerges in bridging the development of self-esteem, as well as other competency domains, with perspective-taking abilities within a cognitive developmental model.
D. Theoretical Framework for an Approach to Perspective-Taking

Piaget and Inhelder (1969) believed that affective and social development followed the same general process of cognitive development since all three aspects are considered inseparable. Thus, the same underlying structures of cognitive development should interface with social and emotional aspects of development. One of the essential components in the process of development is for the child to progress from egocentric thought to the ability of decentering (taking more than one dimension into consideration simultaneously).

Some of the most extensive structural models of social cognition which include perspective-taking abilities, have been proposed by Flavell et al. (1968), Flavell (1970, 1974, & 1977), Selman (1971a, 1971b), Selman and Byrne (1974), and Feffer (1959, 1960, & 1970).

The developmental study of perceptual perspective taking began with Piaget and Inhelder's (1956) work on spatial perspective-taking ability. Flavell (1974, 1977) has proposed a stage model of spatial role-taking or knowledge about visual perception. At level one, the child realizes that others may see different things from himself. At level two, the child realizes that others can have dif-
fering visual experiences when an object is viewed from different positions.

Flavell et al. (1968) identified five things needed to develop in the area of social-cognitive functioning: 1) Existence - the awareness that such a thing as "perspective" exists; 2) Need - analysis of the other's perspective is called for in a particular situation; 3) Prediction - how to carry out this analysis and to discriminate with accuracy the relevant role attributes; 4) Maintenance - the ability to hold one's perspective separate from another's; and 5) Application - how to apply these cognitions or translate what one knows about the other's role attributes into effective verbal messages.

They cited support that the child has achieved some understanding of perspective variation by the time he/she enters school. It is not until middle childhood and adolescence that profound changes merge in role-taking and communicative skills in the above categories of need, prediction, maintenance, and application.

Feffer (1959, 1960) devised a projective test to measure role-taking behavior. This instrument focused on the child's ability to decenter on more than one element in a situation. He found support for a developmental sequence of stages for this ability. Three levels of development
for role-taking were identified. It was not until level three, ages 9-12 years, that the child began to coordinate more than one perspective simultaneously.

Although Peffer's method for assessing role-taking behavior is different from Selman and Byrne's (1974) and Selman's (1971), both models correspond in their stage descriptions. Selman and Byrne (1974) found support for four stages of role-taking behavior. At level 0, the child cannot differentiate points of view which are considered egocentric role-taking. At level 1, subjective role-taking, the child sees him/herself and others with potentially different interpretations of the same social situation but cannot maintain his/her own perspective and simultaneously put the self in the place of others. At level 2, self reflective role-taking, the child is aware that others can think and feel differently. Also, the child can reflect on his/her own behavior from the point of view of others. At level 3, mutual role-taking, the child can consider both his/her and the other person's point of view simultaneously and mutually.

1. Studies on Perspective-Taking and Role-Taking Abilities

There appears to be strong support that LD children's
social behavior and development may be somewhat different from that of normal children. Learning disabled children are usually less accepted by normal peers and sometimes viewed more negatively in terms of their behaviors. One possible explanation for this finding may relate to their development of perspective-taking which encompasses the ability to take the perspective or viewpoint of someone else in the areas of perception, cognition, and affect.

It has only been within the last fifteen years that research has examined the development of perspective-taking which has been referred to by different labels, such as: role-taking, person perception, empathy, social cognition, and egocentrism. For the purpose of consistency, social cognition will refer to the ability to take the perspective of another's perceptions, cognitions or thoughts, and affect.

According to Shantz (1975), the study of the development of social cognition has been important for two reasons:

First, it provides a more complete picture of the child's cognitive development indicating what types of concepts and processes are evident in both nonsocial and social domains at particular age periods. Second, the way in which children conceptualize others presumably has an important effect on their social behavior with others (p. 258).

This second point is particularly important for the LD child. If the learning disabled child has difficulty
conceptualizing how others feel or think, then the LD child should experience more problems in the area of social behavior. For example, Johnson (1975a, 1975b) found that a positive relationship existed between the predisposition to cooperate and the ability to take the affective perspective of others in normal fourth and fifth graders.

One important issue relating to an underlying assumption of role-taking development should be discussed. Although the process of decentering appears to be necessary before the child can adequately assume the role of others, this does not imply that role-taking abilities in the areas of perception, cognition, and affect are single unitary constructs. On the contrary, research has indicated that convergent validity is low among the three areas of social cognition (Kitano et al., 1978; Kurđeck, 1980; Kurđeck & Rodgon, 1975; and Shantz, 1975).

Kurđeck and Rodgon (1975) found that only perceptual and cognitive perspective taking increased with grade level, with the cognitive realm being mastered before the perceptual. Kurđeck (1978) also believes that research should address the issue of structural processes (the ability to decenter) regardless of the content area.

Feffer (1970) discusses Piaget's theory pertaining to social development. Social interactions are viewed as a
necessary condition for social development to occur. It is the cooperation between the child and his/her peers that brings about the transformation of egocentric thought. However, if less interaction and cooperation occur in the LD child, perhaps the transformation process from egocentric thought to the ability to decenter might be delayed.

Although research in perspective-taking had begun about fifteen years ago, there is a scarcity of research in the area on learning disabilities. More effort has been placed on research that focuses on developmental stages of perspective-taking in normal children (Feffer, 1959, 1960, 1970; Selman, 1971a, 1971b; Selman and Byrne, 1974; Flavell et al., 1968; and Flavell, 1970, 1974, 1977). In addition, Kurdeek (1978, 1980) has examined perspective taking as it relates to moral judgments.

Kurdek (1978) views perspective taking, especially cognitive perspective-taking, as a prerequisite for advanced moral judgments. He found that cognitive, rather than perceptual perspective-taking, was related to moral judgment (Kurdeek, 1980). In addition, he stressed the need to focus on the cognitive processes that are common to both perspective-taking and moral judgment, namely, the ability to decenter. This is a valid point since the various tasks used to measure the three areas of perspective-taking have not been found to intercorrelate.
A number of studies have shown that faulty role-taking ability is strongly related to poor social skills and competence. Afflect (1975) examined the relationship between role-taking task performance and interpersonal competence among retarded children. The results indicated a significant relationship between role-taking performance and mental age. Those children who scored the highest on measures of role-taking ability and paired in dyads were more competent in winning a game than those subject dyads who were low in role-taking performance.

Chandler (1973) and Chandler et al. (1974) found that any delays in role-taking skills can interfere with the development of social competence. In addition, Chandler (1973) found that prosocial behavior was related to the development of age appropriate role-taking skills. In Chandler's study (1973), a large percentage of antisocial delinquents had marked developmental lags in their ability to take the perspective of others. Similar results occurred for institutionalized emotionally disturbed children (Chandler et al., 1974).

Peterson et al. (1972) and Wilson (1970) also reported that ineffective social behavior may be related to the failure to read social cues or the failure to realize another person's perspective. Also, the ability to role-
take and communicate effectively increases with age.

Peterson et al. (1972) used three methods to communicate with four and seven year olds: 1) facial condition which signaled noncomprehension by the experimenter, and two kinds of verbal feedback: 2) implicit - the experimenter needed help but did not tell the subjects what kind of help was needed, and 3) explicit - the experimenter told the subjects exactly what help was needed. The results indicated that neither the four nor seven year olds could interpret facial feedback. However, the seven year olds were more accurate in assessing implicit requests than the four year olds, and both groups were accurate in assessing explicit requests.

Kitano et al. (1978) point out that much of the literature on exceptional children has focused on the handicapped child's role-taking ability. Little research has examined normal children's ability to take the role of handicapped children. Their findings suggest that children in general have difficulty taking the perspective of a retarded child. This important implication may be the basis for negative interactions between normal children and children with some emotional or physical disturbance.

These findings appear to be extremely relevant to the area of learning disabilities. The work of Bryan (1974)
and Bryan and Bryan (1975) identified the problem of LD children understanding subtle affective cues. In addition, learning disabilities involve more subtle characteristics which are less visible than those characteristics associated with mental retardation. Thus, it should be more difficult for a normal child to take the perspective of an LD child than a mentally retarded child. The result being negative social interactions between normal and LD children.

Dickstein and Warren (1980) examined role-taking abilities in the areas of cognition, perception, and affect of learning disabled and normal children. They found that learning disabled children showed significant deficits in role-taking ability as compared to normal children, ages 5-10. The larger discrepancies in role-taking scores between LD and normal children occurred in the younger age groups.

Justice and Beard (1980) also studied perceptual, cognitive, and affective perspective-taking skills in normal and LD children ranging in age from 9-12 years. They found that LD children had clear deficits in perceptual and cognitive perspective-taking abilities for all age groups. However, LD children did better on the affective-inconsistent perspective-taking tasks than normal children. That is, the LD children relied on nonverbal cues (facial
expression) in making their perspective judgments, while the normal children focused on verbal information, thereby projecting feelings onto the stimulus card. They concluded, "that perspective-taking deficits might be expected to increase the probability of negative peer interaction and subsequent rejection" (p. 11).

These deficits would seem to parallel Lerner's (1976) characteristics which are typical of some LD children. These include: being poor in the judgment of moods and attitudes of other people and being insensitive to the general atmosphere of social situations. These characteristics suggest that LD children are insensitive to the thoughts and feelings of others and lack perceptual abilities that are needed in certain social situations.

Wiener (1980) also found support for a contributing factor relating to LD children's problems with peer relations. They tend to have inadequate development or deficits in social cognitive skills. She classified LD children into one of three categories using WISC-R subtests. The categories she used are based on the work of Bannatyne (1971) and Smith's et al. (1977) study which found support for Bannatyne's recategorization of WISC-R subscores. Smith's findings support the notion of using
these recategorizations as a "practical diagnostic tool" for children with IQs above 75 (p. 442).

The three categories used by Wiener (1980) were:
1) Conceptual disabilities (low comprehension, similarities, and vocabulary subscores). These children generally have problems with role-taking and verbal expressions;
2) Spatial disabilities (low picture completion, block design, and object assembly subscores). These children cannot recognize affective cues and have difficulty with nonverbally expressed emotions; and 3) Sequential disabilities (low arithmetic scores, digit span, and coding subscores). These children are generally free from social and emotional problems. Also, they do not have difficulties with role-taking or acquiring positive peer relationships. She found that children from categories 1 and 2 had more problems acquiring positive peer relations than LD children in category 3 as measured by a sociogram.

2. Studies on Empathy (Affective Perspective-Taking

The role of empathy, understanding how others feel, appears to be an important aspect for normal social development. Borke (1971) believes that empathy is a primary process underlying human interaction and communication. Roedell et al. (1977) also emphasized the importance of
empathy in order for children to become helpful. They found that popular children tend to be more outgoing and sensitive to the needs of others. Thus, sensitivity to the needs of others plays an important role in being accepted by others. This is particularly true for the LD child.

McGlannan (1977) found that LD children have difficulty in empathizing. This may be due to their perceptual difficulties which make it more difficult for them to make judgments regarding the recognition of emotions by others and therefore, being unable to empathize with others.

Harter (1977) believes that the development of affect interfaces with cognitive development. The preoperational child can only focus on one salient feature of emotion at a time. Her developmental sequence for emotional development parallels the sequence of cognitive development. Again, decentering is the major characteristic that allows the child to experience two different emotions simultaneously toward the same individual.

Borke (1971, 1973) questions the notion that young children are primarily egocentric and lack the ability to empathize. She found that children as young as three could identify the feelings of others. This discrepancy with Piaget's theory is accounted for in terms of the tasks used to measure empathy. According to Borke (1971), the task
has to be within the experience and cognitive capabilities of the young child and, therefore, a behavioral response is more appropriate than a verbal response.

However, Chandler and Greenspan (1972) critiqued Borke's procedure for not making a distinction between egocentric and nonegocentric thought. Their study showed that young children, three years of age, can anticipate the feelings of others. This anticipation may be a result of projection, identification, or stereotyping, but the ability to assume perspectives different from one's self does not occur until middle childhood (ages 12-13) when egocentric thinking decreases significantly. Borke (1972) argues that projection, identification, and stereotyping are primary mechanisms in understanding the feelings of others, and thus, the beginnings of empathy do occur as young as three years of age.

Borke (1973) examined the development of empathy in American and Chinese children between the ages of three and six years. She found that both Chinese and American children between 3 and 3-1/2 years could differentiate easily between social situations which evoked happy and unhappy responses in other people. On the other hand, the recognition of afraid, sad, and angry emotions seemed to be influenced by the interaction of social class and cultural factors. Her results provided further evidence that
empathetic awareness and the capacity for social sen-
sitivity develops at a very early age.

Bachara (1976) examined the ability to empathize in
LD boys ranging in age from 7-12 years. The learning
disabled boys in this study also exhibited auditory and
visual-perceptual problems. All subjects were administered
the Borke Scales for Empathy (1973). The findings indi-
cated that the LD boys were more deficient in the ability
to empathize than normal children. He concluded that
learning disabled children had more difficulty perceiving
social situations appropriately which may hinder the devel-
opment of productive interpersonal relationships.

Budreck (1975) investigated the differences in social
perception between normal children and LD children as
measured by raters' scoring of the children's responses to
six cards from the Michigan Picture Test. She found that
normal children scored significantly higher on the measure
of social perception.

The investigations of Borke (1973) and Bachara (1976)
have important implications for future research. First,
the findings suggested that the primary mechanisms of
empathy develop much earlier than originally believed, and
second, learning disabled children tend to be deficient in
the ability to develop adequate empathetic skills. There
is a strong need to investigate why learning disabled children experience difficulty with empathy. If learning disabled children are less sensitive in empathizing with other people's feelings, they should also be less sensitive in interpreting their own feelings when subtle social interactions are directed toward them.

The evidence thus far supports the notion that LD children generally experience problems in social interactions. Although there has been little research done on social cognitive skills (i.e., role taking ability) on LD children, the available research supports that deficiencies or delays are noted in these skills with learning disabled children.

These delays have been suggested by other researchers to account for some of the social difficulties experienced by LD children with their peers. Although there appears to be support for the relationship between perspective-taking abilities and social behaviors among children, there have been no past efforts to examine the possible effects of perspective-taking abilities on the development of self-esteem and perceived competencies in children, especially in LD children since they have already been shown to have delays in perspective-taking skills.
A few studies have found that training in perspective-taking skills have resulted in higher scores on perspective-taking tasks and some improvement in social behaviors. If there is a relationship between perspective-taking abilities and self-esteem, then future research can examine the impact of such training programs on a child's self-esteem.

3. Studies on Remediation and Training of Perspective-Taking Skills

Chandler et al. (1974) examined the effects of training of role-taking abilities in emotionally disturbed children. They found that role-taking deficits could be partly remediated, but improvements in these skills are not necessarily associated with improvement in social competence. On the other hand, Chandler (1973) found that social skill training with a delinquent population was associated with a measurable reduction in the amount of reported delinquency among this group.

Little (1979) also found role-taking deficits in female offenders which further supports the relationship between social egocentrism and deviant behavior. Training consisted of skits about real life situations. Training
was found to significantly decrease role-taking errors in female juvenile offenders.

Iannotti (1978) showed that training in role-taking increased role-taking performance in six and nine year old children at one school but not at another school. Both experimental groups had increases on altruistic behavior. No effect was found on the measure of empathy or aggression as a result of role-taking training.

VanLieshout et al. (1976) and O'Connor (1977) investigated the effects of social role-taking skills on preschool children. VanLieshout et al. (1976) used stories and puppet play which focused on the feelings of others and altruistic behaviors. Mental age was controlled for all subjects. Their findings showed that training in social skills resulted in higher scores on cognitive and affective role-taking tests in three and four year olds as opposed to the control group. O'Connor (1977) found that training in role-taking skills for preschoolers resulted in better performance on visual-spatial role-taking tasks but not on the cognitive role-taking tasks.

In Urbain and Kendall's (1980) review of social-cognitive interventions, they concluded that, "interventions that emphasized training in the perspective-taking component of problem solving have generally been
successful in improving performance on measures that were
designed to assess perspective-taking abilities" (p. 137).

E. Problems with Research on LD Children

A number of methodological problems have been asso­
ciated with the research done on learning disabled
children. For example, Serafica and Harway (1979) point
out the problem that many studies fail to differentiate
among the various types of learning disabilities. Using
heterogeneous groups limits the applications and generali­
zations found in such studies. A number of studies have
also grouped together different age groups without giving
the reasons for doing this. This procedure places many
restrictions on the interpretation of results, especially
on any developmental trends.

Torgesen (1975) reports similar problems in research
on LD children. In addition, he points out the need for
establishing better control groups and the use of clinical
as well as non-clinical populations in research. Urbain
and Kendall (1980) also call for the use of a developmental
perspective so that the changing organization and
development of cognitive structures, as reflected in
perspective-taking skills, can be applied to the develop­
ment of training programs. They also discuss the need to
enhance the understanding of the antecedent experiences that are necessary for adequate social-cognitive skill development.

Another factor important in this area of research relates to the instruments and directions used to measure role-taking skills. Gelman (1978) mentions that many of the findings on role-taking ability in children may be affected by the child's lack of understanding of what is expected of him/her in an experiment. Also, the types of instruments or tasks used in research should reflect the child's level of development.

STATEMENT OF THE PROBLEM

A review of research on learning disabilities indicates that researchers have generally been slow to recognize the importance of the social and emotional facets of the LD child's development. One reason for this may be that the immediate effects of learning disabilities have a direct impact on academic areas. The more recent research, however, has supplied ample evidence that the LD child also displays difficulties in the social-emotional realm of development. Studies have shown that LD children have lower social status among their peers and are perceived negatively even by adults. These findings suggest that the LD
child may also have problems relating to peers and adults.  

Some studies have demonstrated that LD children usually score significantly lower than nonLD children on measures of self-concept and self-esteem. It has been suggested that this is a possible result of their academic and interpersonal difficulties. However, other studies have not found the same results. These inconsistent findings may be a function of the different age groups used in the various studies, and the failure to take into account other developmental processes that may influence the development of self-concept and self-esteem. It is proposed in this study that these inconsistent findings might be reconciled by examining the relationship between the development of self-concept and self-esteem and the development of perspective-taking.  

Certain investigators have suggested that the development of self-esteem might be linked to one's increasing ability to decenter and coordinate various facets of the self. From this viewpoint, the young LD child may center only on his academic or social performance. Low competence in one or both areas may lead to generalized or undifferentiated evaluations resulting in low general self-esteem. The older child, on the other hand, who is capable of recognizing and coordinating various perspec-
tives of the self, although experiencing difficulties in one or both areas, may not exhibit relatively lower self-esteem because he/she is able to simultaneously focus on other areas of competence beside academic and/or social. With increasing age, the child's ability to perceive and evaluate his/her competencies should be more congruent with a mature adult's perceptions of him/her.

The aims of the proposed study are: (1) to compare the development of self-concept and self-esteem in LD and nonLD children; (2) to compare the development of perspective-taking in LD and nonLD children; (3) to investigate the relationship between the development of self-concept and self-esteem and the development of perspective-taking in LD and nonLD children; and (4) to examine the age-related changes in the relationship between a child's self-concept and self-esteem and teachers' ratings of that child on the same variable in LD and nonLD children.

The major hypotheses of this study are as follows.

**H1** - There will be significant differences among the different age groups on the three measures of perceived competencies and self-esteem.

**H2** - At each age level, there will be significant differences between LD and nonLD subjects on the three measures of perceived competencies and self-esteem.

**H3** - There will be a significant relationship between the subjects' rating and teachers' rating of self-esteem for each age level and group.
Hy4 - There will be significant differences among the different age levels on measures of perspective-taking.

Hy5 - At each age level, there will be significant differences between LD and nonLD subjects on measures of perspective-taking.

Hy6 - There will be a relationship between perspective-taking abilities and self-esteem for LD and nonLD subjects at each age level, significantly so at the oldest age level.
Subjects

The subjects in this study were 120 learning disabled and nonlearning disabled males who were selected from ten middle class schools in a mid-Atlantic city school system. Only male subjects were used in this study because of the difficulty of finding a sufficient number of LD females needed for each age group. Subjects were divided into three age groups, (8-9, 10-11, 12-13), so that children, who might be at the sequential, transitional, and simultaneous levels of perspective-taking could be included in the study.

Within each age group, subjects were further equally subdivided into LD and nonLD groups. An attempt was made to classify LD subjects according to Bannatyne's (1971) categorizations of conceptual, spatial, and sequential disabilities using WISC-R subtest scores, but was discontinued because of the difficulty of identifying enough subjects in each age group and category.
There were forty males in each age group. Subjects were further subdivided into an LD group and a nonLD group at each age level. Subjects in the LD and nonLD groups were matched for age, IQ, and race. The mean ages in months for all groups were: age group 1 - LD (X = 102.45, SD = 8.24); age group 1 - nonLD (X = 104.30, SD = 6.56); age group 2 - LD (X = 126.35, SD = 6.09); age group 2 - nonLD (X = 127.30, SD = 5.89); age group 3 - LD (X = 154.25, SD = 9.05); and age group 3 - nonLD (X = 153.75, SD = 7.54). The mean IQs for the above groups were: (X = 97.75, SD = 10.47); (X = 103.50, SD = 7.12); (X = 99.55, SD = 8.71); (X = 100.70, SD = 6.79); (X = 100.60, SD = 8.16); and (X = 99.55, SD = 6.66) respectively. There were 12 black subjects in this study: 4 from age group 1 (2 LD and 2 nonLD); 6 from age group 2 (3 LD and 3 nonLD); and 2 from age group 3 (1 LD and 1 nonLD) (Table 1). Black subjects from the nonLD group were matched with black subjects from the LD group on age and IQ. To try to control for SES, subjects were recruited from communities with similar demographic features.

LD subjects used in this study had already been diagnosed learning disabled by the school system's eligibility committee consisting of a psychologist, education diagnostician, school community worker, school nurse, a
<table>
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<th>SD</th>
<th>IQ</th>
<th>SD</th>
<th>W*</th>
<th>B+</th>
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<tr>
<td>3</td>
<td>153.75 7.54 99.55 6.66 19 1 20</td>
</tr>
</tbody>
</table>

* Number of Whites  
+ Number of Blacks
coordinator or supervisor from special education, and input from the principal and/or teacher of the child. The diagnosis of LD was made using the following criteria: (1) there must be evidence that the child show at least average potential as measured on an intelligence test; (2) the child must be functioning at least one year below his/her potential level; and (3) physical and sociocultural factors must be ruled out through a medical and sociological evaluation.

Subject Recruitment

Once written permission was obtained from the superintendent of the school system, principals from each school were notified and given brief explanations about the study. After approval was obtained from each principal, a second meeting was scheduled at each school, with the teachers who were interested in participating in the study. At this time, the procedures of the study were explained to the teachers and they were given letters and consent forms to pass out to all the boys in their classes (see Appendix A).

Male students from grades 2 through 8 were asked to bring home letters which explained the purpose of the study and consent forms. The consent forms, which had to be
signed by a parent before a child could participate in the study, also gave the experimenter access to the child's school records. It was emphasized to the parents that access to their child's records would only be used for the purpose of assuring that all subjects were functioning within similar levels of intelligence.

**Measures**

WISC-R full scale IQ scores were used for the LD population to assess intelligence. Since some of the nonLD subjects had no records of individual or group intelligence test scores, the Slosson Intelligence Test (SIT) was used to screen the nonLD population's intelligence. The SIT takes approximately 20 minutes to administer to individual subjects.

The SIT was initially validated on 701 subjects ranging in age from four years through adulthood. A number of studies have been done comparing the SIT to the Stanford-Binet (L-M) and the WISC to determine its validity. Of 18 studies reported, the median correlation between the SIT and the Stanford-Binet was .82. Of the 20 studies reported, the median correlation between the SIT and the WISC full scale IQ score was .75 (Slosson, 1981). A high reliability coefficient of .97 (test-retest interval
within a period of two months) was obtained on 139 individuals from age 4-50 years.

Recently, the SIT has abandoned ratio IQs in favor of deviation IQs based on new 1981 norms. These norms were based on a sample which consisted of 1109 persons ranging in chronological age from 27-216 months. In addition, the SIT provides the following conversion formula to WISC full scale scores: \[ WISC = 0.84(\text{SIT score}) + 12.27. \]

Harter's (1979) measure of Perceived Competence Scale for Children and the Harter (1979) Teacher's Rating Scale of Children's Actual Competence was used to obtain measures on physical, social, and cognitive competencies and a general measure of self-esteem (Appendix B). This scale was standardized on elementary school children between the ages of 8-12 years. Reliability was based on a measure of the internal consistency within each subscale. These values were .76, .78, .83, and .73 for the cognitive, social, physical, and general self-esteem subscales, respectively. The validity of this scale was based on factor analytic procedures which yielded the four factors making up this scale (Harter, 1978).

On both the children's and teacher's forms, there are seven statements for each subscale. Both a positive statement and a negative statement, regarding some aspect about
the child, are presented simultaneously. The rater must first choose which statement is most like the child and then decide whether this statement is really true or sort of true. Items were counter-balanced so that some statements had positive statements first, followed by a negative statement and vice versa. Statements were the same for both the Children's form and the Teacher's form. The only difference was how the beginning of the statement was worded on the two forms. On the Children's form, each statement began, "Some kids...." The statements on the Teacher's form began, "This kid...."

Each statement received a score ranging from 1 - 4. Objective scoring keys were used on both forms. A score of four reflected the highest level of competency. To obtain competency scores for each subscale, scores for each statement within a subscale were totalled and divided by seven.

Lastly, three perspective-taking tasks were used. These included perceptual, affective, and cognitive perspective-taking tasks.

1. Perceptual Perspective-Taking Task. This task was slightly modified from the task in Kurdek and Rodgon's (1975) study. Instead of using Walt Disney characters, Star Trek figures were used since appropriate Walt Disney
characters were not available. Since the position of each character on the tray was the important feature of this task, the type of characters used was irrelevant. Also, the subject was asked to close his eyes between trials instead of observing the experimenter rotate his tray to a new position. Kurdek and Rodgon used clockwise and counterclockwise rotations to prevent subjects from picking up visual feedback. In this study, subjects were asked to close their eyes while the experimenter turned his tray to a new position. This modified procedure also served to prevent the subject from picking up visual feedback about the position of their tray.

Two identical circular trays (15 cm diameter cut from white poster board paper) were placed on the table. One tray was placed in front of the subject and one in front of the experimenter. Three figures were glued on each tray and situated in identical positions and locations (Appendix B). The figures were plastic Star Trek characters (9 cm high). These characters included Dr. Spock, Captain Kirk, and Scotty.

Four trials were used with this task. On each trial, the experimenter rotated his tray to one of four positions which occurred in the following order: 90, 270, 0, and 180 degrees. On each trial, part of the instructions were
repeated, beginning with, "When I say ready...." Before each trial, the subject's tray was placed between 180 and 270 degrees to prevent him from picking up any additional cues regarding the figures' position. The subject's position of his tray was recorded after each trial. One point was given each time the subject matched the position of his tray to the position of the experimenter's tray. A maximum of four points could be obtained, reflecting accurate perceptual perspective-taking ability.

2. Affective Perspective-Taking Task. This task was based on Kurdek and Rodgon's (1975) modified version of Borke's (1971) procedure which is described below. Before beginning the task, subjects were familiarized with four black ink drawings of a face expressing four different emotions of happiness, sadness, anger, and fear. Each subject was then shown eight ink drawings depicting a boy in various situations. Two ink drawings were used for each of the four emotions.

The pictures were of a boy displaying each of the four emotions in two different situations. In one situation, the affect displayed by the boy was appropriate to the verbal description of the story. In the second situation, the affect displayed was inappropriate to the
verbal description of the story. The following were the verbal descriptions given to the two situations for each emotion: Happiness -- getting a new gift as a toy (appropriate) and dreaming of being chased by a tiger (inappropriate); Sadness -- watching a loved one leave home (appropriate) and eating one's favorite ice cream (inappropriate); Fear -- being alone in a dark room (appropriate) and watching one's brother take away a favorite toy (inappropriate); and Anger -- being forced to eat a disliked food (appropriate) and falling down and hurting oneself (inappropriate) (Appendix B).

Three scores were obtained from this task: a) the number of correct responses in the four appropriate affect stories; b) the number of correct responses in the four inappropriate affect stories; and c) the number of responses in the inappropriate affect stories in which the subject predicted the character's affective response in accordance with the cues provided by the narration. Responses in category c, although incorrect, were used as a projection score since these responses reflected how the subject would probably feel in the situation. One point was assigned for each response, with a range from 0 - 4. A score of four in categories a and b reflected accurate affective perspective-taking. A score of four in category c
reflected a high degree of projection. Although three scores were obtained from this task, category b was used as the measure to assess accurate affective perspective-taking.

3. Cognitive Perspective-Taking Task. This task employed the same technique developed by Chandler (1971) which closely parallels the technique developed by Flavell et al. (1968). One 9-frame cartoon sequence was presented to the subject. Midway into this sequence of cartoons a bystander was introduced who observed the main character behaving in a way that was related to a prior event which was not known to the bystander. The subject was first asked to construct a story about his understanding of the actions and events of the entire cartoon sequence. The subject was then questioned about antecedent events which led to the character's thoughts and feelings and the events which occurred prior to the bystander's arrival. Following this phase of the task, the subject was asked to construct another story from the perspective of the bystander who did not have any knowledge of the antecedent events which brought about the character's behavior. Inquiry about the bystander's interpretation of the main character's behavior followed. This procedure assessed the subject's ability to
set aside facts known only to himself and take a perspective different from his own.

Stimuli consisted of nine ordered pictures about a boy playing baseball, breaking a car window and running home scared, looking out his window to see if anyone is coming, hearing a knock at the door and fleeing in fear. The specific illustration of each card was as follows.

Card 1: A boy holding a bat and a ball getting ready to play baseball.
Card 2: The boy hits the ball.
Card 3: The ball goes through a car window and the boy looks worried and frightened.
Card 4: The boy is running home frightened.
Card 5: The boy is on the inside of his house holding the door shut. The boy looks scared. The bystander (boy's father) sees the boy against the door.
Card 6: The boy is looking out his window to see if anyone is coming.
Card 7: The father sees the boy looking out the window. The father is scratching his head.
Card 8: There is a knock at the door. The boy becomes frightened and puts his hands over his mouth. The father is watching.
Card 9: The boy is running away with his arms in the air. The father looks puzzled (Appendix B).

The story was scored using Chandler's five point system. A score of four indicated that the subject did not assign privileged information, which was available only to themselves, to the bystander; a score of three was given whenever the subject made an egocentric attribution but then later corrected it spontaneously; a score of two was assigned whenever the subject attributed privileged infor-
mation to the uninformed bystander but embedded the attributions in nonegocentric alternatives; a score of one was assigned to stories in which unwarranted attributions of privileged information were made in conditional or probability statements; a score of zero was assigned whenever the subject directly assigned privileged information to the bystander. The highest score a subject could earn was a four which reflected accurate cognitive perspective-taking.

Although this scoring system was the only subjectively scored measure in this study, the inter-rater reliability for Chandler's scoring system has been shown to be .93 (Kurdek, 1978). Inter-rater reliability for cognitive perspective-taking in this study was 90 percent. Inter-rater reliability was established for the subjective scoring on the cognitive perspective-taking task by having two raters independently score ten protocols from each age level and group. The percentage of agreement of scores between judges was 90 percent. The formula for this percentage was computed as follows.

\[
\text{Percentage agreement} = \frac{\text{Total agreements}}{\text{Total # of protocols}}
\]
Procedures

Once written permission was obtained from the child's parent, school records of learning disabled subjects were examined to obtain their IQ scores from the WISC-R. The records of non-learning disabled boys were not reviewed since many of the younger boys had not been evaluated by the school system at the time of this study. Instead, nonLD boys were individually administered the Slosson Intelligence Test (SIT). The SIT score was converted into a WISC full scale IQ score by using the following equation: \[ WISC = 0.84(SIT\ score) + 12.27. \]

After this screening process was completed and all subjects were selected, categorized, and matched for IQ, age, and race, the next procedure consisted of meeting with the subjects in pairs. The following instructions were given.

Today we are going to talk about the experiment and I will explain all the things you will be doing. Part of the study involves answering questions about yourself and the other part involves playing some games.

Subjects were then told that the experimenter's assistant, who was an advanced psychology male student from a local community college, would administer the rating scale while the experimenter administered the game section (three perspective-taking tasks) to the second subject.
After the subjects completed their first task, the assistant and the experimenter switched subjects and administered the same task to a different subject pair. Half of the subjects from each age level and classification were asked to complete the rating scale first; the other half were asked to do the perspective-taking tasks first.

The assistant administered Harter's (1979) measure of Perceived Competence Scale for Children to obtain measures of the subject's social, cognitive, and physical perceived competencies, and a general measure of self-esteem. The instructions for the administration of this scale were taken from Harter's manual: Form 0 (1979). The instructions and all statements on the scale were read to each subject individually.

The game portion of the study consisted of administering three perspective-taking tasks in the following order: perceptual, affective, and cognitive.

**Perceptual Perspective-Taking Task.** The subject was asked to sit on the opposite side of a table from the experimenter. After allowing the subject to familiarize himself with the tray and figures, the following instructions were given.

*As you can see each tray has the same figures located in the same position.* Your
tray is exactly like mine. Here is Dr. Spock, (turning the subject's tray so that each figure was in front of the subject as the figure was identified), Captain Kirk, and Scotty from Star Trek. I want you to close your eyes while I turn my tray to a new position. When I say ready, I want you to turn your tray so that you are seeing the same thing I am seeing looking at my tray. For example, if you were sitting in my chair and looking at my tray, what would you be seeing? Turn your tray to what you would be seeing. Tell me when you are finished.

Affective Perspective-Taking Task. Subjects were shown four black ink drawings of a face depicting four different emotions of happiness, sadness, anger, and fear. The subjects were told, "Show me the face of the boy who is happy - sad - angry - afraid." After subjects became familiar with the affect that matched the face, they were presented with the following instructions: "Now we are going to look at some more pictures of the boy. This time he will be doing different things and I will tell you about them." Each of the statements describing all of the above situations was preceded by the statement, "Here is a boy...." Each statement was followed by the question, "How is he feeling?"

The subject was then presented with each of the eight pictures in a randomly determined order so that an appropriate affect display was followed by an inappropriate affect display of a different emotion. The
following order of affects was presented to all subjects: happy-appropriate, fear-inappropriate, anger-appropriate, sad-inappropriate, fear-appropriate, anger-inappropriate, sad-appropriate, and happy-inappropriate.

All responses were recorded and had to be specific affect labels or synonyms for that affect in order to receive credit. If a subject gave a vague response, such as, "good" or "bad", he was questioned further until an affective label was given for the picture.

**Cognitive Perspective-Taking Task.** After presenting the nine stimulus cards to the subject, the following instructions were given to the subject (Chandler, 1971).

I am going to show you some cartoons like you would see in the newspaper comics which I will ask you to describe to me. The cartoons are about a boy. I will show you the cartoons one at a time and ask you to tell me what is going on. You will have all the time you need, so go slowly and look at every picture in the cartoon before you decide what the whole thing is about. I am interested in what the people in the cartoons are thinking and feeling, so pay special attention to those parts of the story. When you finish studying each cartoon and know what it is about, I will ask you to describe what is happening in each picture and how the character is feeling. I will write everything you say so I won't forget. Since you can talk faster than I can write, you will have to help me by going slow. Do you understand what you are supposed to do?
Good. Here is the first cartoon. Study it carefully. Remember to pay special attention to what the people in the picture are thinking and feeling. Tell me when you have decided what the whole thing is about.... What is happening in the first picture? How is the boy feeling?
(These last two questions were asked after each picture was presented.)

After the subject completed this portion of the cognitive perspective taking task, the first four stimulus cards were removed. Beginning with the fifth stimulus card, the following instructions were presented to the subject.

Bystander: Now I want you to begin with this picture and retell what is happening, but this time I want you to tell me the story that X would tell. Try to pay special attention to what X believes the other people in the cartoon are thinking and feeling. Begin here and tell me what X would say is happening in this picture. He would say.... Tell me what X believes the boy is feeling.
(After each card was presented, the subject was asked what he thought X believed was happening and what the subject thought X believed the boy was feeling.)

When the subject completed all of the above tasks, the Harter (1979) Teacher's Rating Scale of Children's Actual Competence was given to each of the subject's teachers (Appendix B). This form parallels the Child's Form on all four subscales. Teacher's ratings allowed comparisons to be made between the subject's perception of
himself and the teacher's perception of the subject in the areas of physical, cognitive, social competence, and general self-esteem. After completing these forms, teachers were instructed to turn their forms into the Principal's Office and from there they were mailed to the experimenter.

Data Analysis

Since all of the measures used in this study were objectively scored, no inter-rater reliability tests were done except for the cognitive perspective-taking task. An inter-rater reliability test for the cognitive perspective-taking task was done by having an independent judge score ten protocols from each age group and classification, for a total of 60 protocols. The experimenter trained the independent judge using Chandler's (1971) scoring criteria. Inter-rater reliability was obtained by taking the total number of agreements between the judge and the experimenter and dividing that number by the total number of protocols to yield the percentage of correct agreements.

Statistical analysis used in this study consisted of three separate univariate ANOVAs for each age level to compare any age differences between LD and nonLD subjects at each age level. A 2 x 3 (group x age) ANOVA was performed to test for differences in IQ between LD and nonLD sub-
jects. Two 2 x 3 (group x age) ANOVAs were done separately on the perceived competencies and self-esteem scores, and perspective-taking scores to test hypotheses 1, 2, 4, and 5. A correlation analysis was done between teachers' and subjects' ratings of self-esteem at each age level and group to test hypothesis 3. Finally, a separate correlational analysis between perspective-taking scores and scores of general self-esteem was performed at each age level and group to test hypothesis 6.

Additional analyses were done on the data to examine other issues that were not addressed in the hypotheses of this study. Regression analyses were carried out on each of the perceived competency measures and self-esteem to determine which variables were the best predictors of these measures. In addition, these analyses were used to see if perspective-taking abilities predicted one's perceived competencies and general self-esteem.

Intercorrelations were performed among all the subscale scores on Harter's Perceived Competency Measure to determine whether there were significant relationships among subscales. Separate intercorrelations were also done among the scores on all perspective-taking tasks to determine whether scores on all perspective-taking tasks intercorrelated with one another.
CHAPTER 3
RESULTS

A 2 x 3 (group x age) ANOVA was done to determine if there were significant differences in age between LD and nonLD subjects for each age group (Appendix C-1). No significant differences in age were found between LD and nonLD subjects for each age group. The mean ages in months for all groups of subjects are presented in Table 2.

A 2 x 3 (group x age) ANOVA was also done to determine if there were significant differences in IQ among all groups of subjects (Appendix C-2). No significant differences in IQ were found for the main effects of age and group. The mean IQ scores for all groups of subjects are presented in Table 3.

Hypothesis 1 - There will be significant differences among the different age groups on the three measures of perceived competencies and general self-esteem.

Hypothesis 2 - At each age level, there will be significant differences between LD and nonLD subjects on the three measures of perceived competencies and general self-esteem.

Four 2 x 3 (group x age) ANOVAs were performed, separately, on scores for perceived physical, social, and
TABLE 2
MEAN AGES IN MONTHS FOR LD AND NONLD BOYS

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<th>NON-LEARNING DISABLED</th>
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</thead>
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cognitive competencies and general self-esteem to test these two hypotheses (Appendix C-3) The mean scores for perceived physical, social, and cognitive competencies and general self-esteem are presented in Table 4. The first hypothesis was not supported. None of the ANOVAs yielded a significant main effect for age on any of these variables. The three age groups did not differ significantly on scores of perceived physical, social, and cognitive competencies and general self-esteem.

The second hypothesis was partially supported. No significant main effect of group on perceived physical and social competencies and general self-esteem was found, although the difference between LD and nonLD subjects in their perceived social competence approached significance F(1, 114) = 3.38, p < .07. Across all age groups sampled, nonLD subjects' perceptions of their social competency tended to be higher than those of LD subjects. There was a significant main effect of group on the measure of perceived cognitive competence F(1, 114) = 4.49, p < .05. Again, nonLD subjects' perceptions of their cognitive competency was significantly higher than those of LD subjects across all age levels sampled. Table 5 presents the mean scores for the measures of perceived social and cognitive
TABLE 4
MEAN SCORES ON PERCEIVED PHYSICAL, SOCIAL, COGNITIVE
COMPETENCIES AND SELF-ESTEEM IN LD AND NONLD BOYS
FOR EACH AGE LEVEL

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TABLE 5

MEAN SCORES ON PERCEIVED SOCIAL AND PHYSICAL COMPETENCIES FOR LD AND NONLD BOYS AT EACH AGE LEVEL

<table>
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<th>AGE LEVEL</th>
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competencies for each group within each age level. No interaction effects were found.

Hypothesis 3 - There will be a significant relationship between the subjects' rating and teachers' rating of general self-esteem for each age level and group.

The mean scores for teachers' ratings of the subjects' actual physical, social, cognitive competencies, and general self-esteem for each age level and group are presented in Table 6. Pearson product moment correlations were done between the teachers' ratings of the subjects' general self-esteem and the subjects' ratings of their own general self-esteem (Table 7). No significant correlations were found between the teachers' ratings and the subjects' ratings of general self-esteem.

In addition, Pearson product moment correlations were performed between the teachers' ratings of the subjects' physical, social, and cognitive competencies and the subjects' ratings of their own perceived competencies in these three areas (Table 7). Although no hypotheses regarding these relationships were proposed in this study, the analyses were performed to explore whether or not significant correlations would be found between teachers' ratings and subjects' ratings on physical, social, and cognitive competencies. Significant correlations were
TABLE 6

MEAN SCORES FOR TEACHER'S RATINGS OF CHILD'S ACTUAL PHYSICAL, SOCIAL, COGNITIVE COMPETENCE AND SELF-ESTEEM IN LD AND NONLD BOYS AT EACH AGE LEVEL

<table>
<thead>
<tr>
<th>AGE LEVEL</th>
<th>PHYS</th>
<th>SO</th>
<th>SOC</th>
<th>SD</th>
<th>COG</th>
<th>SD</th>
<th>S-E</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.75</td>
<td>.76</td>
<td>3.11</td>
<td>.75</td>
<td>2.31</td>
<td>.86</td>
<td>2.92</td>
<td>.74</td>
</tr>
<tr>
<td>2</td>
<td>2.78</td>
<td>.64</td>
<td>3.03</td>
<td>.65</td>
<td>2.09</td>
<td>.57</td>
<td>2.82</td>
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<tr>
<td>3</td>
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<td>.77</td>
<td>3.13</td>
<td>.55</td>
<td>2.34</td>
<td>.56</td>
<td>2.88</td>
<td>.57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE LEVEL</th>
<th>PHYS</th>
<th>SO</th>
<th>SOC</th>
<th>SD</th>
<th>COG</th>
<th>SD</th>
<th>S-E</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.12</td>
<td>.46</td>
<td>3.18</td>
<td>.74</td>
<td>3.06</td>
<td>.86</td>
<td>3.04</td>
<td>.78</td>
</tr>
<tr>
<td>2</td>
<td>3.31</td>
<td>.54</td>
<td>3.31</td>
<td>.58</td>
<td>3.02</td>
<td>.68</td>
<td>3.07</td>
<td>.67</td>
</tr>
<tr>
<td>3</td>
<td>2.87</td>
<td>.64</td>
<td>2.71</td>
<td>.80</td>
<td>2.56</td>
<td>.88</td>
<td>2.59</td>
<td>.79</td>
</tr>
</tbody>
</table>
TABLE 7
CORRELATIONS BETWEEN TEACHER'S RATINGS AND CHILD'S RATINGS OF PERCEIVED PHYSICAL, SOCIAL AND COGNITIVE COMPETENCIES AND SELF-ESTEEM AT EACH AGE LEVEL AND GROUP

<table>
<thead>
<tr>
<th>AGE LEVEL</th>
<th>PHYSICAL</th>
<th>SOCIAL</th>
<th>COGNITIVE</th>
<th>SELF-ESTEEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LD</td>
<td>.41+</td>
<td>.35</td>
<td>.54*</td>
<td>.40+</td>
</tr>
<tr>
<td>1 NONLD</td>
<td>.19</td>
<td>.03</td>
<td>.29</td>
<td>.31</td>
</tr>
<tr>
<td>2 LD</td>
<td>-.38</td>
<td>-.23</td>
<td>.26</td>
<td>-.20</td>
</tr>
<tr>
<td>2 NONLD</td>
<td>.45*</td>
<td>.05</td>
<td>.76****</td>
<td>.33</td>
</tr>
<tr>
<td>3 LD</td>
<td>.27</td>
<td>.15</td>
<td>.37</td>
<td>.26</td>
</tr>
<tr>
<td>3 NONLD</td>
<td>.04</td>
<td>.33</td>
<td>.59**</td>
<td>-.34</td>
</tr>
</tbody>
</table>

+ p < .08
* p < .05
** p < .01
**** p < .0001
found between teachers' and subjects' ratings for nonLD boys on physical competency only at age level 2 ($r = .45$, $p < .05$); and on cognitive competency at age level 2 ($r = .76$, $p < .0001$), and age level 3 ($r = .59$, $p < .01$). The only significant correlation found between teachers' and subjects' ratings for LD boys occurred on cognitive competency only for age level 1 ($r = .54$, $p < .05$).

Correlations between teachers' and subjects' ratings on the three competency measures for the total sample yielded one significant positive correlation for cognitive competency ($r = .50$, $p < .0001$) (Table 8).

Hypothesis 4 - There will be significant differences among the different age levels on measures of perspective-taking.

Hypothesis 5 - At each age level, there will be significant differences between LD and nonLD subjects on measures of perspective-taking.

Three $2 \times 3$ (group x age) ANOVAs were performed separately on each perspective-taking task to test these two hypotheses (Appendix C-4). Hypothesis 4 was partially supported. There was a significant main effect of age on the perceptual perspective-taking task $F(2, 114) = 5.48$, $p < .01$, and the cognitive perspective-taking task $F(2,114) = 4.88$, $p < .01$. Perceptual perspective-taking scores increased at each age level, whereas, cognitive perspective-taking increased from age level 1 to age level
TABLE 8
CORRELATIONS BETWEEN TEACHER RATINGS AND SUBJECT RATINGS ON MEASURES OF PERCEIVED COMPETENCIES FOR TOTAL SAMPLE
PEARSON r

<table>
<thead>
<tr>
<th>PHYSICAL</th>
<th>SOCIAL</th>
<th>COGNITIVE</th>
<th>SELF-ESTEEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL</td>
<td>.16+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOCIAL</td>
<td>.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COGNITIVE</td>
<td></td>
<td>.50****</td>
<td></td>
</tr>
<tr>
<td>SELF-ESTEEM</td>
<td></td>
<td></td>
<td>.10</td>
</tr>
</tbody>
</table>

**** p < .0001  
+ p < .08
2, then slightly decreased at age level 3. The mean scores on the three perspective-taking measures are presented in Table 9. No significant main effect of age on the affective-inappropriate (I) perspective-taking measure was found, although a significant interaction effect on this measure between age and group was found. This result will be discussed under Hypothesis 5.

A post hoc comparison test (Duncan's Multiple Range Test) was done to determine which age levels significantly differed from one another. On both perceptual and cognitive perspective-taking, age levels 2 and 3 did not differ significantly from one another, but both age levels 2 and 3 were significantly different from age level 1, \( p < .05 \).

The fifth hypothesis was only partially supported. There was no significant main effect of group on cognitive perspective-taking, although it approached significance \( F(1, 114) = 3.57, p < .07 \). There was a tendency for nonLD subjects to score higher than LD subjects across all age levels. A significant main effect of group was found for perceptual perspective-taking \( F(1, 114) = 9.19, p < .01 \). Across all age levels, LD subjects scored lower on perceptual perspective-taking than nonLD subjects. The mean scores of the three perspective-taking tasks for each group are presented in Table 10 with a graphical representation in
<table>
<thead>
<tr>
<th>AGE LEVEL</th>
<th>Perceptual</th>
<th>Affective(I)</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.725</td>
<td>1.50</td>
<td>1.025</td>
</tr>
<tr>
<td>2</td>
<td>2.60</td>
<td>1.20</td>
<td>2.075</td>
</tr>
<tr>
<td>3</td>
<td>2.85</td>
<td>1.55</td>
<td>1.95</td>
</tr>
</tbody>
</table>

TABLE 9
MEAN SCORES ON THE THREE PERSPECTIVE-TAKING MEASURES FOR EACH AGE LEVEL
<table>
<thead>
<tr>
<th>GROUP</th>
<th>Perceptual</th>
<th>Affective (I)</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD</td>
<td>1.95</td>
<td>1.57</td>
<td>1.40</td>
</tr>
<tr>
<td>NONLD</td>
<td>2.83</td>
<td>1.27</td>
<td>1.97</td>
</tr>
</tbody>
</table>

TABLE 10

MEAN SCORES ON PERCEPTUAL, AFFECTIVE (I), AND COGNITIVE PERSPECTIVE-TAKING MEASURES FOR EACH GROUP
Figure 1. In addition, the mean scores on perceptual and cognitive perspective-taking measures across all age levels are graphically presented in Figure 2 to illustrate the differences between LD and nonLD subjects on these two perspective-taking measures.

No significant main effect of group was found on affective (I) perspective-taking. Only a significant interaction between age and group was found on this measure $F(2, 114) = 3.14, p < .05$. Table 11 presents the mean scores on affective (I) perspective-taking for each group across all age levels. A Duncan's Multiple Range Test was done post hoc and showed that age level 3-LD did not differ significantly from age level 2-LD. However age levels 2 and 3-LD did differ significantly from age level 1-LD. In the LD group, scores on affective (I) perspective-taking decreased with increasing age. All age levels in the nonLD group differed significantly from one another. Scores on this measure decreased from age level 1 to 2, then increased from age level 2 to 3 in the nonLD group.

Hypothesis 6 - There will be a relationship between perspective-taking abilities and general self-esteem for LD and nonLD subjects at each age level, significantly so at the oldest age level.

Since age had been found to have a significant main effect on perceptual and cognitive perspective-taking,
Figure 1. Mean Scores on Three Perspective-Taking Tasks for Each Group.
Figure 2. Mean Scores on Perceptual (PPT) and Cognitive (CPT) Perspective-Taking Tasks for LD and nonLD Subjects at Each Age Level.
<table>
<thead>
<tr>
<th>AGE LEVEL</th>
<th>AFFECTIVE (I) LD</th>
<th>AFFECTIVE (I) NONLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.85</td>
<td>1.15</td>
</tr>
<tr>
<td>2</td>
<td>1.50</td>
<td>0.90</td>
</tr>
<tr>
<td>3</td>
<td>1.35</td>
<td>1.75</td>
</tr>
</tbody>
</table>
Pearson product-moment correlations were done between perspective-taking and general self-esteem scores at each age level for each group (Table 12). Only one significant correlation was found in the oldest group of LD subjects between cognitive perspective-taking and general self-esteem ($r = .49$, $p < .05$).

**Additional Analyses**

In addition to the above results, additional statistical analyses were performed post hoc for exploratory and methodological purposes.

1. **Regression Analysis - Predictors of Competencies and General Self-Esteem**

   A stepwise regression analysis was done on each of the measures of perceived competency and the general measure of self-esteem to see what variables were the best predictors of performance on each of the measures. The following factors were entered as possible predictors: age, IQ, group, perceptual perspective-taking, affective (I) perspective-taking, and cognitive perspective-taking.

   The first stepwise regression analysis was done for the measure of perceived physical competency. The two best predictors for this measure were IQ $F(1, 117) = 6.63$,
TABLE 12
CORRELATIONS BETWEEN PERSPECTIVE-TAKING TASKS AND SELF-ESTEEM IN LD AND NONLD BOYS FOR EACH AGE LEVEL

<table>
<thead>
<tr>
<th>AGE LEVEL/ GROUP</th>
<th>Perceptual</th>
<th>Affective</th>
<th>Cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 LD</td>
<td>.15</td>
<td>.004</td>
<td>.07</td>
</tr>
<tr>
<td>1 NONLD</td>
<td>-.04</td>
<td>-.36</td>
<td>.17</td>
</tr>
<tr>
<td>2 LD</td>
<td>.33</td>
<td>.15</td>
<td>.19</td>
</tr>
<tr>
<td>2 NONLD</td>
<td>-.38</td>
<td>.08</td>
<td>-.29</td>
</tr>
<tr>
<td>3 LD</td>
<td>.11</td>
<td>-.25</td>
<td>.49*</td>
</tr>
<tr>
<td>3 NONLD</td>
<td>-.15</td>
<td>-.16</td>
<td>-.29</td>
</tr>
</tbody>
</table>

* p < .05
p < .01 and perceptual perspective taking $F(1, 117) = 3.80$, $p < .05$ with $R^2 = .063$ (Appendix C-5).

The second stepwise regression analysis was done for the measure of perceived social competency. No variables were found to be significant predictors of this measure, although group approached significance $F(1, 118) = 3.43$, $p < .07$ with the $R^2 = .03$ (Appendix C-6).

The third stepwise regression analysis was done for the measure of perceived cognitive competency. Group was a significant predictor of this measure $F(1, 118) = 4.61$, $p < .05$ with $R^2 = .04$. IQ was the second best predictor which approached significance $F(2, 118) = 3.29$, $p < .07$. The $R^2$ value for both IQ and group was .064 (Appendix C-7).

The last stepwise regression analysis was done on the measure of general self-esteem. No significant predictors were found. IQ, which was the strongest predictor, only had a $R^2$ value of .009. When all six variables were entered, they only accounted for .017 of the variance (Appendix C-8).

2. Intercorrelations on Perspective-Taking and Perceived Competency Scores

Intercorrelational analyses for the perspective-taking scores were done at each age level to eliminate the possibility that correlations were due to age changes
(Table 13). Separate intercorrelational analyses were conducted on the perceived competency scores for the total sample (Table 14). This was done so that intercorrelations among components of each of the above measures in this study could be compared with the findings reported in other research.

There was only one significant negative correlation between perceptual and affective (I) perspective-taking at age level 2 for nonLD subjects ($r = -0.48, p < .05$).

All the intercorrelations for the measures of perceived competency and general self-esteem were highly significant (Table 14).

3. Relationship Between Perspective-Taking Tasks and Measures of Perceived Competencies

Since age had been found to have a significant main effect on perceptual and cognitive perspective-taking, and group had been found to have a significant main effect on perceived cognitive competency, relationships between perspective-taking scores and scores on perceived competencies were examined separately in LD and nonLD subjects at each age level (Table 15).

At age level 1, there was a significant negative correlation between perceptual perspective-taking and
TABLE 13
INTERCORRELATIONS FOR ALL PERSPECTIVE-TAKING TASKS FOR EACH AGE LEVEL AND GROUP

PEARSON r

<table>
<thead>
<tr>
<th>AGE LEVEL 1</th>
<th>AFFECTIVE I</th>
<th>COGNITIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD nonLD</td>
<td>LD nonLD</td>
</tr>
<tr>
<td>PERCEPTUAL</td>
<td>-.10 -.42</td>
<td>.20 .12</td>
</tr>
<tr>
<td>AFFECTIVE (I)</td>
<td>.04 -.28</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE LEVEL 2</th>
<th>AFFECTIVE I</th>
<th>COGNITIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD nonLD</td>
<td>LD nonLD</td>
</tr>
<tr>
<td>PERCEPTUAL</td>
<td>-.36 -.48*</td>
<td>.14 .19</td>
</tr>
<tr>
<td>AFFECTIVE (I)</td>
<td>-.20 -.37</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGE LEVEL 3</th>
<th>AFFECTIVE I</th>
<th>COGNITIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD nonLD</td>
<td>LD nonLD</td>
</tr>
<tr>
<td>PERCEPTUAL</td>
<td>-.13 -.36</td>
<td>.23 .18</td>
</tr>
<tr>
<td>AFFECTIVE (I)</td>
<td>.02 -.01</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
TABLE 14

INTERCORRELATIONS FOR THE MEASURES OF PERCEIVED COMPETENCE AND SELF-ESTEEM FOR TOTAL SAMPLE

PEARSON r

<table>
<thead>
<tr>
<th></th>
<th>SOCIAL</th>
<th>COGNITIVE</th>
<th>SELF-ESTEEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICAL</td>
<td>.53****</td>
<td>.27**</td>
<td>.33***</td>
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<tr>
<td>SOCIAL</td>
<td></td>
<td>.27**</td>
<td>.45****</td>
</tr>
<tr>
<td>COGNITIVE</td>
<td></td>
<td></td>
<td>.42****</td>
</tr>
<tr>
<td>SELF-ESTEEM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**** p < .0001  
*** p < .001    
**  p < .01
### TABLE 15

**CORRELATIONS BETWEEN PERSPECTIVE-TAKING TASKS AND PERCEIVED COMPETENCIES IN LD AND NONLD BOYS FOR EACH AGE LEVEL**

**PEARSON r**

<table>
<thead>
<tr>
<th>AGE GROUP 1</th>
<th>PERCEIVED COMPETENCIES</th>
<th>PERCEPTUAL TASKS</th>
<th>PHYSICAL LD</th>
<th>PHYSICAL NONLD</th>
<th>SOCIAL LD</th>
<th>SOCIAL NONLD</th>
<th>COGNITIVE LD</th>
<th>COGNITIVE NONLD</th>
<th>SELF-ESTEEM LD</th>
<th>SELF-ESTEEM NONLD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>PERCEPTUAL</td>
<td>.19</td>
<td>-.10</td>
<td>-.34</td>
<td>-.44*</td>
<td>-.25</td>
<td>.43+</td>
<td>.15</td>
<td>-.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AFFECTIVE(I)</td>
<td>.38</td>
<td>-.16</td>
<td>-.03</td>
<td>.07</td>
<td>.07</td>
<td>-.29</td>
<td>-.004</td>
<td>-.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>COGNITIVE</td>
<td>.11</td>
<td>.13</td>
<td>-.26</td>
<td>-.04</td>
<td>-.42+</td>
<td>.11</td>
<td>.07</td>
<td>.17</td>
</tr>
</tbody>
</table>

* p < .05
**TABLE 15 (Continued)**

**AGE GROUP 2**

<table>
<thead>
<tr>
<th>PERCEPTUAL PT TASKS</th>
<th>PHYSICAL</th>
<th>SOCIAL</th>
<th>COGNITIVE</th>
<th>SELF-ESTEEM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LD</td>
<td>NONLD</td>
<td>LD</td>
<td>NONLD</td>
</tr>
<tr>
<td>PERCEPTUAL</td>
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<td>.11</td>
<td>.34</td>
<td>-.21</td>
</tr>
<tr>
<td>AFFECTIVE(I)</td>
<td>-.19</td>
<td>-.23</td>
<td>-.17</td>
<td>-.06</td>
</tr>
<tr>
<td>COGNITIVE</td>
<td>.22</td>
<td>-.28</td>
<td>.33</td>
<td>-.15</td>
</tr>
</tbody>
</table>

* p < .05
### TABLE 15 (Continued)

**AGE GROUP 3**

<table>
<thead>
<tr>
<th>PERCEPTUAL PT TASKS</th>
<th>PHYSICAL</th>
<th>SOCIAL</th>
<th>COGNITIVE</th>
<th>SELF-ESTEEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCEPTUAL</td>
<td>.14</td>
<td>-.11</td>
<td>.07</td>
<td>-.03</td>
</tr>
<tr>
<td>AFFECTIVE(I)</td>
<td>-.35</td>
<td>-.20</td>
<td>-.33</td>
<td>-.13</td>
</tr>
<tr>
<td>COGNITIVE</td>
<td>.21</td>
<td>.17</td>
<td>.27</td>
<td>-.01</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>LD NONLD</th>
<th>LD NONLD</th>
<th>LD NONLD</th>
<th>LD NONLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>PERCEPTUAL</td>
<td>.13</td>
<td>.11</td>
<td>-.15</td>
<td></td>
</tr>
<tr>
<td>AFFECTIVE(I)</td>
<td>-.25</td>
<td>-.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COGNITIVE</td>
<td>.49*</td>
<td>-.29</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\* * p < .05
perceived social competence in nonLD subjects \((r = -0.44, p < 0.05)\). No significant correlations between perspective-taking tasks and measures of perceived competencies were found in the middle age level of subjects. Significant correlations were found in the oldest age level of subjects. A significant negative correlation was found between cognitive perspective-taking and perceived cognitive competency in nonLD subjects \((r = -0.45, p < 0.05)\).

4. Analysis of Affective (A) Perspective-Taking and Projection

Two 2 x 3 (group x age) ANOVAs were done separately for affective appropriate (A) perspective-taking and the measure of projection (Appendix C-9). These analyses were done since both affective (A) perspective-taking and projection have been used in other studies and have been found to play an important role in the development of judging another's affective viewpoint.

No significant main effect of age or group was found on affective (A) perspective-taking. However, the main effect of age approached significance \(F(2,114) = 2.93, p < .07\). No interaction effect between age and group was found. A Duncan's Multiple Range Test for age showed there was no significant difference between age level 1 and 2,
and no difference between age level 2 and 3, but there was a significant difference between age level 1 and 3.

The projection measure yielded no significant main effects of age or group. A significant interaction effect between age and group was found $F(2, 114) = 6.45$, $p < .01$. A post hoc comparison test (Duncan's Multiple Range Test) was performed to determine which age groups significantly differed from one another. In both LD and nonLD groups, all age levels differed significantly from one another. In the LD group, scores on projection significantly increased as age level increased. In the nonLD group, this finding was also true for the first two age levels. At age level 3, there was a significant decrease in the projection score from age level 2. The mean scores on projection for each age level and group are presented in Table 16.
<table>
<thead>
<tr>
<th>AGE LEVEL</th>
<th>LD</th>
<th>GROUP</th>
<th>NONLD</th>
</tr>
</thead>
<tbody>
<tr>
<td>I (8 - 9)</td>
<td>1.50</td>
<td>2.30</td>
<td></td>
</tr>
<tr>
<td>II (10-11)</td>
<td>1.85</td>
<td>2.65</td>
<td></td>
</tr>
<tr>
<td>III (12-13)</td>
<td>2.35</td>
<td>1.60</td>
<td></td>
</tr>
</tbody>
</table>
The results of this study did not yield any developmental trends on the measures of perceived competencies and self-esteem. No differences on these measures were found among the three age levels. Mullenen and Laird (1971) found evidence for developmental changes in one's capacity to form differentiated self-expressions and suggested that some cognitive process may underlie the development of self-esteem. However, the groups of subjects in their study included seventh graders, seniors, and college students. Thus, the developmental changes found may have been a result of the cognitive stage of development these three groups represented.

One possible explanation for the lack of developmental changes in perceived competency and general self-esteem in the subjects of this study may be that a child's perception of his/her competence and general self-esteem remains stable from ages 8-13 years. Harter (1982) found that the scores from the measures of perceived competency and general self-esteem remained highly stable from grades four
through eight. Hertz-Lazarowitz (1979) also did not find age differences on self-esteem in children in grades four through eight.

It appears that children's perception of their competencies and general self-esteem remains stable during middle childhood. Changes appear to occur when children go from the concrete operational stage of development to the formal operational stage, becoming statistically significant with the consolidation of the latter stage. Rosenberg (1979) has found support for this change in children's self-esteem. Younger subjects (8-12 years) differed significantly from children 13 and older in how they conceptualized themselves. He believes these age differences result from the development of different cognitive processes found in adolescents, but not in children.

A significant difference was found between LD and nonLD boys on the measure of perceived cognitive competency. The difference between LD and nonLD boys on the measure of perceived social competence approached significance. No differences were found between the two groups of boys on the measures of perceived physical competency and general self-esteem.

One obvious reason for the difference between LD and nonLD boys on the measure of perceived cognitive competency
(LD boys scored lower than non LD boys) pertain to the academic difficulties usually experienced by LD children. Lincoln and Chazan (1979) found LD children to be more dependent on external sources of evaluation. Thus, LD children probably perceive their academic competency based on external sources of evaluation and are more sensitive to the immediate feedback of their academic deficiencies.

It was interesting that a significant difference was found only on the measure of perceived cognitive competency but not on the measure of general self-esteem between LD and nonLD boys, since studies on LD children and self-esteem have generally found that the factors of academic achievement and self-esteem tend to be related (Bingham, 1980; Rosenthal, 1973; Battle et al., 1980; and Thomson and Harley, 1980). On the other hand, self-esteem may depend on a number of factors that can influence how a child views him/herself. Mullener and Laird (1971) suggested that if children can take more than one aspect about themselves into account, their evaluation about themselves would not be determined by only one factor, namely academic achievement. Also, Calhoun and Morse (1977) view self-esteem as being less stable and easily influenced by current experiences. These views suggest that the LD boys in this sample maintained their self-esteem in the face of academic
difficulties because as Harter (1982) suggests, "Children (age 8 and older) not only make discrete judgments about their competence in different domains, but that by this age they have also constructed a view of their general self-worth as a person, over and above these specific competence judgments" (p. 88).

LD boys also scored lower than nonLD boys on the measure of perceived social competence. Although this difference only approached significance, it is consistent with the findings of previous descriptive studies on peer relations in LD children. LD children have been found to be ignored more by their peers and teachers (Bryan, 1974a), received significantly more votes on social rejection by peers (Bryan, 1974b, 1976; Bruininks, 1978), and tend to be more unpopular than nonLD peers (Siperstein et al., 1978). Thus, the LD child's feedback from others appears to impact upon their self-evaluations of social competency.

No significant difference between LD and nonLD boys was found on the measure of perceived physical competency. One tentative reason why no differences between LD and nonLD boys were found on this measure may be related to the LD child's participation in physical activities with other LD peers. Thus, the LD child may be formulating his perceptions of physical competency by comparing his physical
skills to that of other LD children rather than children with learning disabilities.

No significant relationship was found between the subjects' ratings and teachers' ratings of the subjects' general self-esteem within each age level and group. This finding would suggest that LD children are no less consistent in matching their self-perceptions with the perceptions of their teachers than nonLD children.

In addition, correlations between the teachers' ratings of the subjects' physical, social, and cognitive competencies and the subjects' ratings of their own perceived competencies in these three areas were examined. Although these relationships were not part of the hypotheses proposed in this study, they were examined to explore whether some competency domains between subjects' and teachers' ratings were more in agreement than other competency domains. Significant correlations between the subjects' perceived cognitive competency and teachers' ratings of the subjects' cognitive competency were found for the following groups of subjects: age level 1 - LD, age level 2 - nonLD, and age level 3 - nonLD.

This finding suggests that as nonLD boys become older, their perceptions of their cognitive competency become more consistent with their teacher's ratings on this
measure. On the other hand, as LD boys become older their perceptions of their cognitive competency becomes less consistent with their teacher's ratings. This difference may be accounted for by the increasing complexity of integrating additional feedback in the formulation of one's cognitive competence as a child advances in grade level, especially for the LD child. Since the LD child already has difficulty processing information from the environment, more complex types of feedback about their academic performance in the upper grades may make it more difficult for them to accurately assess their performance.

Only one other significant correlation was found between subjects' and teachers' ratings of physical competency at age level 2 - nonLD. Since this relationship was found for only one age level and group, no tentative explanation can be offered for this finding.

Developmental trends in perceptual and cognitive perspective-taking abilities were demonstrated in this study. Significant differences on these two measures were found between age levels. Both age levels 2 (10-11 years) and 3 (12-13 years) differed significantly from age level 1 (8-9 years). This finding is similar to Kurdek and Rodgon's (1975) results. They found that perceptual and cognitive perspective-taking abilities increased with grade level up
through the sixth grade, with major increases occurring between the ages of 9 and 11 years. The increase in cognitive perspective-taking ability between age level 1 and both age levels 2 and 3 of this study is consistent with the rapid development toward an inferential-psychological interpretation of social events during this period, as suggested by Livesly and Bromley (1973) and Flapan (1968). Likewise, the increase in perceptual perspective-taking ability between the ages of 9 and 11 years is also consistent with the results of Nigl and Fishbein (1974). They suggested that the ability to coordinate perceptual perspectives undergoes rapid performance changes during this period of development.

No significant age effect for affective (I) perspective-taking ability was found in this study. However, there was a significant age x group interaction effect. This finding was also consistent with Kurdek and Rodgon's (1974) results. They found that affective (I) perspective-taking decreased with increasing grade level as projection increased with increasing grade level. This trend was present in this study for the LD boys, but not for the nonLD boys. Affective (I) perspective-taking scores decreased with age while projection scores increased with age for the LD subjects. However, this relationship
only held for the first two age levels of nonLD subjects. A reversal in direction for both the affective (I) and perspective-taking score and the projection score occurred for nonLD subjects at age level 3. Although Kurdek and Rodgon (1974) reported that projection increased with increasing grade levels and affective (I) perspective-taking decreased with increasing grade levels, they only examined this trend in subjects up through age 11.

A similar trend was also noted in this study with nonLD subjects through age eleven. However, there was a shift in this trend at the oldest age level of nonLD boys. This shift seems to pertain to the use of projection which peaks somewhere between the ages of ten and eleven years in nonLD boys and then begins to decrease after this age period. This finding may suggest that the oldest group of nonLD boys have entered the simultaneous stage of perspective-taking which would account for less reliance on projection. Selman and Byrne (1974) have reported that a child at this stage realizes that both self and other can consider each party's point of view simultaneously and mutually and that 20 percent of ten year olds in their study reached this stage of perspective-taking. Thus, when a child can mutually and simultaneously take self and other's affective perspectives into consideration, the need to use projection
as a means for understanding how others feel should decrease. Since the projection scores of LD boys peaked at a later age, it may be suggestive of a delay in development of affective-perspective taking in this group.

Results of this study also suggest that LD boys showed clear deficits in both perceptual and cognitive perspective-taking abilities as compared to nonLD boys across all age ranges studied. A significant difference between groups on perceptual perspective-taking was found, whereas, the difference between groups for cognitive perspective-taking only approached significance. These results are consistent with the findings from Justice and Beard's (1980) study. They found that LD children consistently lagged behind their nondisabled age mates in the ability to judge another's perceptual and cognitive viewpoint.

No significant main effect for classification was found on the measure of affective (I) perspective-taking. However, LD subjects performed better than nonLD subjects overall. Similar findings were also found in Justice and Beard's (1980) study. This finding does not necessarily imply that LD boys are at a more advanced level of perspective-taking than non-LD boys. What it may mean, as suggested by Justice and Beard, is that LD children tend to
rely more on nonverbal cues in making their perspective judgments, whereas, nonLD children tend to focus on the verbal information provided in a social interaction.

No significant relationship was found between any of the perspective-taking abilities and general self-esteem among LD and nonLD boys, except for the oldest group of LD boys. As hypothesized, a significant positive relationship occurred between cognitive perspective-taking and general self-esteem only for this oldest group of LD boys.

This finding suggests that with increasing ability in cognitive perspective-taking for the oldest age group of LD boys, there is a tendency for general self-esteem to increase too. Thus, partial support was found for the view that the development of general self-esteem might be linked to one's increasing ability to decenter and coordinate various facets simultaneously of the self. The older child, who can recognize and coordinate various perspectives of the self and others, although experiencing difficulties in some areas of their lives, may not exhibit relatively lower general self-esteem because he/she can make differentiated self-evaluations. The younger child, on the other hand, may center only on one domain of their lives which may lead to generalized or undifferentiated evaluations resulting in low general self-esteem.
This relationship was not found in the oldest group of nonLD boys. One tentative explanation for the failure of this relationship occurring in the oldest age group of nonLD boys has been suggested by Harter (1982). When children start junior high school in which there is a new school structure, several different teachers, and a new social hierarchy, it may be that children temporarily lose their ability to make realistic judgments about their self-worth. Whereas, the LD child of the same age would not necessarily go through these same changes due to their placement in LD classes which maintain a more consistent structure over time.

Additional analyses of the data found that certain variables were significant predictors of some of the perceived competency measures. Only one perspective-taking skill was found to be a significant predictor, and only of one competency measure. IQ and perceptual perspective-taking were found to be the two best predictors of perceived physical competency. Thus, IQ and perceptual perspective-taking appear to impact upon one's perceived physical competency. The importance of the IQ variable may mean that higher levels of cognitive functioning are important in learning and applying complex rules to certain physical activities. Therefore, if one is able to understand
and apply these rules, one may feel more competent in his/her ability to engage in physical activities. In addition, perceptual perspective-taking may underly the ability to view the other's physical positions in sports and games, thereby anticipating actions in a game. Being able to anticipate an opponent's action usually indicates one can play competently.

Classification approached significance as a predictor for social competency. This finding was consistent with previous descriptive research which has compared peer relationships between LD and nonLD children. LD children have consistently been found to be lower on sociometric ratings than their nonLD peers (Bryan, 1974b, 1976; Bruininks, 1978; Charlesworth and Hartup, 1967; Hartup et al., 1967; and Siperstein et al., 1978). Future research needs to focus more specifically on whether the label of LD and the negative connotations sometimes associated with this label versus specific types of social deficits in LD children contribute to low peer status among LD children.

IQ and classification were found to be the two most significant predictors of perceived cognitive competency. Since academic achievement can be influenced by one's intellectual capacity, it should have some impact on how a child perceives his/her cognitive or academic
competency. This is especially true for the LD child since they already have cognitive deficits underlying their academic problems.

None of the factors entered into the regression analysis were found to be significant predictors of general self-esteem. This finding may have significant implications regarding LD children, as well as nonLD children. Whereas, classification does appear to be an important factor as to how one perceives their social and cognitive competencies, it does not appear to be an important factor for general positive self-esteem. One possible explanation for this finding may pertain to the specificity of the content areas of competencies. The three subscales used to assess physical, social, and cognitive competencies were organized around three specific content areas in which the child could easily rely upon his own and other's feedback regarding his performance in these areas. The general self-esteem measure, on the other hand, incorporated more abstract and global statements about the self which may be less dependent on evaluative feedback from others.

Another tentative explanation why none of the factors were able to predict general self-esteem pertains to Harter's (1982) conception of the construct of self-esteem. She assumes that the hierarchical structure of general
self-esteem is viewed as a superordinate construct, whereas, the perception of different competency domains represents one type of lower order evaluative dimension. Thus, Harter makes a strong point that, "judgments concerning one's overall self-worth are not inferred from the summation of responses to items tapping a wide array of specific abilities and attitudes, rather, they are tapped by items which directly inquire into how much the individual likes himself or herself as a person" (p. 88). It may be that perspective-taking abilities play a role in the formulation of one's perception in specific lower order competency domains, but not in areas involving superordinate constructs such as general self-esteem.

Intercorrelations among all the perspective-taking scores for each age level and group yielded only one significant negative correlation between perceptual and affective (I) perspective-taking for nonLD subjects at age level 2. The remaining intercorrelations were not significant. Several other investigators have found either non-significant or low but significant correlations among scores on perceptual, affective, and cognitive perspective-taking (Kurdek and Rodgon, 1975; Shantz, 1975; Van Lieshout, 1976; Flavell, et al., 1968; and Johnson, 1975b).
Thus, the lack of intercorrelations among perspective-taking scores in this study was consistent with the findings of other studies, especially the Kurdek and Rodgon's (1975) study. They also found that intercorrelations among the three tasks were virtually nonexistent, especially for male subjects. They concluded that, "while successful performance on each task did require perspective-taking skill, it also involved additional cognitive-perceptual abilities that were specific to perceptual, cognitive, and affective perspective-taking" (p. 649). They also concluded that perspective-taking seems to be a multidimensional social-cognitive skill.

Intercorrelations among all the competency measures and general self-esteem for the total sample were done since age was not found to influence scores on these measures. These intercorrelations were performed to compare the findings of this study with Harter's (1982) research on these scales. Harter's studies have shown that correlations of the general self-esteem subscales with each of the three competency subscales consistently tend to be among the highest, in the range of .40 and .58. This trend was also found in this study with general self-esteem significantly correlating with physical \( r = .33, p < .001 \), social \( r = .45, p < .0001 \), and cognitive \( r = .42, p < \)
.0001) perceived competencies. Harter also found that social and physical subscales are highly related across samples, within the range of .46 and .58. The correlation in this study between social and physical competencies was .53. Harter accounts for such a high correlation between the social and physical subscales as relating to one's popularity depending upon athletic prowess during the elementary and junior high school years. Academic performance is viewed as being less important to one's popularity. Lastly, Harter found that the relationship between the cognitive subscale and both the social and physical subscales tends to be lower. This finding was also substantiated in this study with correlations between the cognitive subscale and the physical and social subscales being .27 and .27, respectively. Overall, the intercorrelations among these subscales in this study were consistent with the findings of Harter's research.

Since significant age and group differences were found for perspective-taking and perceived competencies, the relationship between these two variables was examined at each age level and group. Only two significant correlations were found between perspective-taking scores and scores on perceived competencies. First, there was a significant negative correlation between perceptual
perspective-taking and perceived social competence in nonLD subjects at age level one. That is, as perceptual perspective-taking ability increases, there is a tendency for this group of boys to perceive their social competency more negatively. Since most children in this age range have not fully developed the ability to take another's perceptual perspective, those who have, may be more advanced in their athletic ability to compete with same age peers. These boys may then attempt to play with older boys who may not allow the younger boys to participate. Therefore, there may be a tendency for younger boys with developed perceptual perspective-taking skills to see themselves as less socially competent.

A second significant negative correlation was found between cognitive perspective-taking and cognitive competency for the oldest group of nonLD boys. This finding suggests that the ability to coordinate simultaneous viewpoints of other's thoughts is related to a more negative perception of cognitive competency by older nonLD boys. And at the same time, this ability does not appear to have a negative influence on this group of boys' general self-esteem. Thus, Harter's hypothesis that self-esteem is a superordinate construct as opposed to competency domains appears to receive limited support from this finding.
Affective (A) perspective-taking ability was found to be mastered by all subjects at a relatively young age. This finding has also been supported by other studies (Borke, 1973; Kurdek and Rodgon, 1974; and Justice and Beard, 1980). They have all found that children as young as 8 years old have been shown to excell in affective (A) perspective-taking tasks. That is, children at this age have no difficulty matching emotions when they are consistent to verbal cues.

**IMPLICATIONS FOR FUTURE RESEARCH**

Future research in this area needs to concentrate on identifying homogeneous subgroups of LD children. Although this suggestion may not always be feasible at times, strong attempts to identify homogeneous samples of LD children must be made if we are truly to understand the social and emotional development of LD children. Such an attempt was made in this study, but had to be discontinued due to an insufficient number of subjects needed for each group when Bannatyne's (1971) classification system was initially employed. Thus, the heterogeneous sample of LD subjects in this study could have accounted for some of the hypotheses receiving limited support. That is, there was a sizeable proportion of LD subjects in this study who met the cri-
teria of a sequential disability. Weiner (1980) has found that LD children who have a sequential disability generally do not display difficulties with role-taking or acquiring positive peer relationships. Including these subjects in this study might have moderated possible group differences.

Another important issue that is related to the above, involves the classification of subjects according to some stage of development rather than age. This would help illuminate assumptions that children are probably at a given stage of development because they are in a particular age range. By classifying subjects in specific stages of development rather than age categories, will help focus attention on the social and emotional components of development in LD children.

Lastly, future research will need to explore further the relationship between perspective-taking abilities and the development of self-esteem and self-concept. Thus far, research has established that LD children experience difficulties with social interactions and have delays in the development of perspective-taking abilities as compared to nonLD children. What research has failed to do is explore the developmental course of self-esteem in LD children and attempt to identify important components that affect its development which may be different from nonLD children.
Before we can begin to remediate any of the social and emotional problems experienced by LD children, we have to understand why they are different from nonLD children.
CHAPTER 5
SUMMARY AND CONCLUSIONS

This study attempted to examine age and group differences among LD and nonLD boys on three measures of perceived competency (social, physical, cognitive) and a measure of general self-esteem and the relationship between subjects' and teachers' ratings of general self-esteem for each age level and group. In addition, age and group differences were examined on three measures of perspective-taking (perceptual, affective, cognitive). Finally, the relationship between perspective-taking abilities and general self-esteem was examined between LD and nonLD boys at each level, particularly at the oldest age level.

The results of this study indicated there were no age differences on the three measures of perceived competence and the measure of general self-esteem. Significant group differences were found on the measure of cognitive competency and a difference, which approached significance, was found on the measure of social competency. On both these measures LD boys scored lower than nonLD boys. No significant relationships between subjects' ratings and
teachers' ratings of general self-esteem were found for each age level and group. For the perspective-taking tasks significant age differences were found on perceptual and cognitive perspective-taking only. Scores on these tasks increased with increasing age. One significant group effect was found for perceptual perspective-taking, while a near significant group effect was found for cognitive perspective-taking. On both these measures nonLD boys scored higher than LD boys. A significant interaction between age and group was found on the measure of affective (I) perspective-taking. Finally, a significant correlation was found between cognitive perspective-taking and general self-esteem for the oldest group of LD subjects but not for the oldest group of nonLD subjects.
Dear Parent(s):

The development of perceived competence and self-esteem is important for all children. Research has shown that these processes may develop at different rates for some children. I am doing a study which examines one possible factor which may influence the development of perceived competence and self-esteem. In particular, I am interested in children's ability to take the viewpoint of others and how this may influence the development of perceived competence and self-esteem.

Participation in this study will involve administering a questionnaire which measures the child's perceived competence and self-esteem and accomplishing three tasks which measure the child's ability to identify the thoughts, feelings, and perceptions of other people. The teacher will be asked to also rate each child on measures of competence and self-esteem. The total time required of each child would be approximately 45-60 minutes. In addition, children will be scheduled at a mutually convenient time to ensure that their participation will not interfere with important academic activities.

I am asking your permission for your son to participate as a subject in this study and to obtain access to his school records (intelligence test scores). Access to the child's test scores is necessary so that all subjects are functioning within similar levels of intelligence. IQ scores, scores used in this study, and the reporting of scores will be held in the strictest of confidence. All scores will be coded to protect each child's identity.

The possible benefits from your child's participation in this study will help increase our understanding of the development of self-esteem in children and our knowledge in such a way as to facilitate training programs that would help enhance the social and emotional development of children.

In order for your child to participate in this study, the parent and child must sign the attached consent form and return this form to the child's teacher. The parent or child may decide to terminate participation in this study at any time, even if the consent form has been signed.

Should you or your child have any further questions regarding this study, please feel free to contact me at 482-3321 after 6p.m. I will be glad to answer any further questions your or your son may have regarding the nature of this study.

Thank you for your help.

Sincerely,

Edward O. Waller, M.A.
Investigator
I consent to my child's participation in a study entitled: "The Development of Perspective-Taking Skills and its Relationship to the Development of Perceived Competencies and Self-Esteem in Boys With and Without Learning Disabilities." I also give my consent to the investigator of this study to obtain access to my child's school records (intelligence test scores). These test scores will be used ONLY to classify subjects into certain categories. Confidentiality will be maintained for each child's test scores.

Edward D. Waller, investigator of this study, has explained the purpose of the study and procedures to be followed. Possible benefits of the study have been described as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am (my child is) free to withdraw consent at any time and to discontinue participation in the study without prejudice to me (my child). The information obtained from me (my child) will remain confidential and anonymous unless I specifically agree otherwise.

Finally, I acknowledge that I have read and fully understand the consent form. I have signed it freely and voluntarily and understand a copy is available upon request.

DATE:____________________ SIGNED: ______________________________
                          (Participant - Child)

DATE:____________________ SIGNED: ______________________________
                          (Person authorized to consent for child - parent)

Henry R. Angelino, Ph.D., Edward D. Waller, M.A.
(Principal Investigators)
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These consist of pages:

126-145
APPENDIX C-1

ANOVA FOR AGE DIFFERENCES BETWEEN LD AND NONLD BOYS AT EACH AGE LEVEL

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APPENDIX C-2

TWO FACTOR ANOVA FOR AGE LEVELS X GROUPS FOR IQ

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APPENDIX C-3

TWO FACTOR ANOVA FOR AGE LEVELS X GROUPS FOR VARIABLES OF PERCEIVED PHYSICAL, SOCIAL, COGNITIVE COMPTETENCIES AND SELF-ESTEEM

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* p < .05
** p < .01
+ p < .07
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* p < .05  
** p < .01  
+ p < .07
APPENDIX C-4

TWO FACTOR ANOVA FOR AGE LEVELS X GROUPS FOR VARIABLES OF PERCEPTUAL, AFFECTIVE (I) AND COGNITIVE PERSPECTIVE-TAKING TASKS

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* p < .05
+ p < .07
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APPENDIX C-5

STEPWISE REGRESSION ANALYSIS FOR PERCEIVED PHYSICAL COMPETENCE

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* $p < .05$
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## APPENDIX C-6

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\( + p < .07 \)
## APPENDIX C-7

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* $p < .05$
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APPENDIX C-8

STEPWISE REGRESSION ANALYSIS FOR SELF-ESTEEM

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### APPENDIX C-9

ANOVA FOR AGE LEVELS X GROUP FOR VARIABLES OF AFFECTIVE (A) PERSPECTIVE-TAKING AND PROJECTION

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* p < .05  
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LIST OF REFERENCES

Affleet, C. G. Role-taking ability and the interpersonal competencies of retarded children. American Journal of Mental Deficiency, 1975, 80, 312-316.


Chandler, M. J., Greenspan, S., & Barenboim, C. Assessment and training of role-taking and referential communication skills in institutionalized emotionally disturbed children. Developmental Psychology, 1974, 10, 546-553.


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