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Teachers' conceptions of learning disabilities: Relationships between cognition, affect, and behavior

Learner, Kathy Marie, Ph.D.
The Ohio State University, 1987

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TEACHERS' CONCEPTIONS OF LEARNING DISABILITIES:
RELATIONSHIPS BETWEEN COGNITION, AFFECT, AND BEHAVIOR

DISSERTATION

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

by
Kathy Marie Learner, B.A., M.A.

* * * * *

The Ohio State University
1987

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To My Husband
with all my love
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INTRODUCTION

Given the relatively recent adoption of the term "learning disability" and the controversy that has surrounded the establishment of a definition (Abrams, 1987; Hammill, Leigh, McNutt, & Larsen, 1987; Kavale & Forness, 1985; NJCLD, 1981/1987), it is particularly important to explore teachers' ideas about learning disabilities. With the majority of LD students receiving their education within the regular school program, the combined efforts of both regular and special educators is required.

Several studies have attempted to assess teachers' awareness of the defining characteristics and causes of learning disabilities (DeLoach, Earl, Brown, Poplin, & Werner, 1981; Kirk, Senf, & Larsen, 1981; Rothlisberg & Liljestrom 1984; Ruberto, 1975/1976). However, the degree of elaboration, or going beyond the definition to more extensive knowledge or conceptualization of the LD construct has yet to be explored.

An attitude towards a person can be viewed as a multidimensional construct consisting of affective, behavioral, and cognitive components (Bentler & Speckart, 1981; Fishbein & Ajzen, 1974; Zajonc, 1980). This study examined the cognitive aspect of teachers' attitudes toward LD children by employing a social-cognitive developmental framework to assess possible differences in levels of understanding between students
in special education, regular classroom teachers with mainstreamed LD children, and LD certified teachers. The study is predicated on the assumption that there is a developmental progression in levels of understanding of learning disabilities from a specific, concrete, personalized view to a more abstract, complex conceptualization.

There is also a growing body of literature which suggests that the label of a learning disability has negative evaluative components, and that teachers' perceptions affect their expectations of the child's academic performance and differential behavior toward the LD child (Boersma & Chapman, 1978; Brophy & Good, 1970; Bryan, 1974 & 1981; Pullis, 1985).

A secondary objective of this study was to examine whether level of understanding of learning disabilities is related to expectations of the academic performance and social competence, educational programming decisions, and knowledge and attitude of educational placement of LD children.

In the chapter that follows, a review of the literature is presented, and a statement of the problem that the study attempts to address is given. Then the subjects, measures, and procedures used are described in the chapter on methodology. This is followed by a presentation of the results of the statistical analyses performed. Finally, there is a discussion of the findings and limitations of the study. Directions for future research are suggested, and practical and theoretical implications of the findings are discussed.
CHAPTER I
REVIEW OF THE LITERATURE

Definition of Learning Disabilities

The inability of children to perform adequately in certain areas of academic achievement despite seemingly normal intellectual capacity and educational opportunity has come to be recognized as a significant educational problem. However, it remains one of the most confusing and disorganized areas in child psychology literature, largely due to the controversy surrounding the choice of appropriate definitions and terminology in the field.

The term "learning disability" is relatively new in special education. The impetus to the development of programs for these children began with the work of Strauss, Werner, Kephart, and Lehtinen with brain-injured mentally retarded children in the mid 1940's (Strauss & Lehtinen, 1947). However, it was not until the early 1960's that widespread professional attention was instigated by a national conference in 1963. Labels such as brain injured, perceptually handicapped, and minimal brain dysfunction were rejected in favor of the term proposed by Kirk: "learning disabilities". This term soon gained support from a large number of parents and special educators. The prevalence of the term prompted many definitions, the most influential of which was the one proposed by the National Advisory Committee on
Handicapped Children (1968). This definition was included in Public Law 91-230 (Children with Special Learning Disabilities Act of 1969) and was only slightly revised in PL94-142 (The Education for All Handicapped Children Act of 1975). The following definition was adopted for inclusion in PL94-142:

"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 imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. Such disorders include such conditions as perceptual handicaps, brain injury, minimal brain dysfunctions, dyslexia, and developmental aphasia. Such term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or environmental, cultural, or economic disadvantage. (U.S. Department of Education, 1977, pp. 65082-65085)

In a survey of the 50 State Departments of Education, Mercer, Forgnone, and Wolking (1985) report a move toward increased adoption of the 1977 Federal Register definition (72% in 1983 versus 57% in 1976). In addition, they found that "of the six components commonly used to define and/or identify learning disabilities, three (academic problem, exclusion, and discrepancy) are increasing in usage, while three (process, neurological, and intelligence) are decreasing. These trends are consistent with the directions in the 1977 Federal Registry definition and criteria" (p. 52).

Although PL94-142 provided a basis for federal and state funding of educational services for children with learning disabilities, it did not eliminate the widespread controversy regarding the definitional issue (Abrams, 1987; Mercer, Hughes, & Mercer, 1985; National Joint Committee on Learning Disabilities, 1981/1987). Many have concluded that the
NACHC definition is ambiguous and unsatisfactory, both pragmatically and theoretically. For example, in a recent study by Thurlow (1983), 148 teachers of learning disabled students described their schools' criteria and indicated their agreement or disagreement. Findings suggested that "characteristics of students declared eligible for LD services are situation-specific and do not reflect current knowledge, and that the criteria are vague and non-specific" (Thurlow, 1983, p. 1).

Kavale and Forness (1985) argue that "the empirical evidence does not support the primary components of LD definitions; they are, in fact, reified concepts masquerading as actualities" (p. 19). They propose that the LD field is at a "major crossroads" and in need of a major paradigm shift.

The problematic nature of the LD definitional components are evidenced in the wide discrepancy in prevalence estimates. One to thirty percent of the school population have been estimated as learning disabled, despite the fact that the NACHC definition has been adopted in toto in most areas of the United States (Mercer, Forgnone, & Wolking, 1985). The most widely accepted estimate is three to five percent of the school-age population (Farnham-Diggory, 1978; Ross, 1976).

It is becoming increasingly apparent that the general term "learning disability" encompasses a broad range of problems. As Barkley (1981) points out, "It is no longer acceptable...to consider children with learning disabilities as a single homogenous group of children who differ from other children in any consistent respect" (p. 452). Because learning disabled children are such a heterogeneous group, many professionals have rejected the PL94-142 definition for a theoretical
statement about the nature of learning disabilities. They feel that much of the controversy within the area would be eliminated with a definition that would better delineate the complex and diverse group of problems organized under the term "learning disabilities". As Torgesen (1975) suggests, broad definitions allow a large number of children to be placed in a certain category and are effective in generating legislative support and educational programs, but are destructive of efforts to build adequate theory or conduct programmatic research.

Dissatisfaction with the 1977 Federal Register definition of learning disabilities led to the National Joint Committee for Learning Disabilities proposal of a new definition, the purpose of which was "to establish learning disabilities theoretically — not to set up specific operational criteria for identifying individual cases" (Hammill, Leigh, McNutt, & Larsen, 1981, p. 337). The NJCLD definition states:

Learning Disabilities is a generic term that refers to a heterogeneous group of disorders manifested by significant difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning, or mathematical abilities. These disorders are intrinsic to the individual and presumed to be due to central nervous system dysfunction. Even though a learning disability may occur concomitantly with other handicapping conditions (e.g., sensory impairment, mental retardation, social and emotional disturbance) or environmental influences (e.g., cultural differences, insufficient/inappropriate instruction, psychogenic factors), it is not the direct result of those conditions or influences. (NJCLD, 1981/1987, p. 108)

Although this new definition holds promise as a theoretical statement of learning disabilities, it, too, has been met with critical commentary (Kavale & Forness, 1985). Researchers are now increasingly recognizing a need for alternative directions, conceptualizations, and theories (e.g., Algozzine & Ysseldyke, 1983; Gerber, 1984; Kauffman & Krouse, 1981; Sabatino, 1983; Shepard & Smith, 1983; Ysseldyke &
In order for any definition and/or operationalization of learning disabilities to be effective, it is imperative to assess teachers' understanding of learning disabilities, since teachers are the primary referring agent. Mercer et al. (1985) report that the NJCLD definition has had little impact on state definitions and criteria. Since the definition established by PL94-142 is the one currently in use across the nation, the present study employed that definition.

In the U.S. Department of Education's (1984) Sixth Annual Report to Congress on the implementation of Public Law 94-142, an increase of 119% in the number of learning disabled children served is reported since 1976-77. As Gerber (1984) states, "Students identified as learning disabled comprise the largest categorical group currently receiving special education in the nation . . . about 41% in 1982-83." (p. 210)

Of the more than 93% of all handicapped children who are educated in regular schools, approximately two-thirds receive their education in the regular classroom with non-handicapped peers. The majority of the learning disabled students receive their education within the mainstream of the regular school program, with additional support services provided by the resource room teacher (Lerner, 1981; Sawyer & Wilson, 1979).

Thus, the responsibility for educating the LD child no longer rests solely on the shoulders of the LD specialist or special education teacher. Rather, it requires the combined efforts of both special and regular classroom teachers. However, most regular classroom teachers have had little or no preparation in their undergraduate training to recognize and respond appropriately to the learning problems of the
Significance of this Topic for Clinicians

Teachers' understanding, attitudes, and behavior toward LD children is an appropriate concern for the clinical psychologist. The clinician is often asked to do the psychological evaluation for a particular child, either because the child has never been brought to the attention of the school psychologist, or because the school psychologist has a long waiting list. It is the clinician's role to make recommendations for the remediation of the child's problems based on the psychological evaluation. The clinical psychologist can have a greater impact upon the actual implementation of these recommendations if he/she understands the teacher's perceptions of the LD child. This is particularly important if the clinician is trying to set up a program for the child that will necessarily involve the teacher's cooperation, such as an in-class behavior modification program or after-school individual tutoring. The teacher's willingness and ability to implement the clinician's specific recommendations, as well as carry out an individualized educational program, may be related to the teacher's level of understanding of learning disabilities in addition to such factors as the teacher's technical competence to carry out the program.

In order to work well with the teacher, it is important for the clinician to have a framework within which to view teachers' conceptions of the problem. This will enable the clinical psychologist to be more aware of the teacher's attitude toward the LD child. Knowing how well-informed the teacher is about the child's specific problems, whether the teacher is setting up unrealistic expectations for the
child, and how the teacher is reacting and interacting with the child are appropriate areas of research for the clinical psychologist who works with learning disabled children.

Teachers' Attitudes toward Mainstreaming

The success of mainstreaming the learning disabled child into the regular classroom depends in part on the willingness of regular and special educators to accept the mainstreaming principle. A number of surveys have shown that regular classroom teachers have an unfavorable attitude toward mainstreaming in general (Hudson, Graham, and Warner, 1979; Moore & Fine, 1978; Ringlaben & Price, 1981;). However, investigators have reported that factors such as class size, inaccessibility of materials, time constraints, and unavailability of immediate and long-term support services are related to unfavorable attitudes (Blazovic, 1972; Graham, Hudson, Burdg, & Carpenter, 1980; Vacc & Kirst, 1977; Williams & Algozzine, 1979).

On a more positive note, Knoff's (1984) research study indicated a pro-mainstreaming attitude among regular teachers. This was in significant contrast to less positive attitudes of special education teachers, perhaps reflecting a feeling among the special education teachers that special education classes are generally more effective with exceptional students.

It appears that many regular classroom teachers are concerned about mainstreaming handicapped children in general, although the LD child seems to be more acceptable than the emotionally disturbed or mentally retarded child (Blazovic, 1972; Mooney & Algozzine, 1978; Vacc & Kirst, 1977; Williams & Algozzine, 1977). Numerous studies have indicated that
this concern is largely due to the teachers' own feelings of inadequacy in teaching handicapped children (Carberry, Waxman, & McKain, 1981; Graham et al., 1980; Harasymiw & Horne; 1976; Martin, 1976; McGinity & Keogh, 1975; Schultz, 1982; Vacc & Kirst, 1977). This may have particularly serious consequences for children with learning disabilities. It is probably more difficult for teachers to gain a good understanding of children whose learning deficits are marked by such a variety of specific characteristics. Carberry et al. (1981) note that "teachers have not really understood the nature of the learning disability, and expectations of the child have been either too high or too low" (p. 26).

**Teachers' Understanding of Learning Disabilities**

Teacher understanding is influenced by many factors, such as information level, knowledge attainment, specific skill acquisition, and contact and experience with the LD child. Thus, it is important to investigate possible differences in levels of understanding for teachers with varying degrees of experience.

Only a few studies have attempted to assess teachers' awareness of the defining characteristics and causes of LD. One such study was done by Ruberto (1975/1976), who examined the perceptions of 277 certified LD teachers as to what characteristics they believe were generated by the term "learning disabled child". Most of the sample had regular and LD classroom experience at the elementary school level and had taken further courses in education. The survey instrument consisted of 50 individual psycho-educational characteristics purported by the literature to be symptomatic of the existence of a learning disability.
Using factor analysis, the results of the study indicated three major factors, but there was a large overlapping between factors. Ruberto (1975/1976) concluded that a large heterogeneous group of characteristics may be communicated to teachers by the term "learning disabled child", and therefore it is important to further assess how the LD construct is actually used within a school setting.

In a somewhat different study, DeLoach, Earl, Brown, Poplin, and Warner (1981) constructed a survey questionnaire in order to explore the concept of severe learning disabilities as perceived by experienced LD teachers. These investigators were interested in identifying characteristics which differentiated students classified by LD teachers as severely learning disabled (SLD) from those classified as mild- to moderately- learning disabled (MLD). Two hundred and twenty-three teachers participated in the survey, with an almost equal division between those with two to five years versus over five years of teaching experience. The forced-choice questionnaire consisted of 44 items about the perceived characteristics of actual students classified by their teachers as SLD or MLD.

DeLoach et al. (1981) found that 94% of the LD teachers felt that they had a "good idea" of which students were learning disabled, slow learners, mentally retarded, and emotionally disturbed. Interestingly, the teachers classified almost 30% of their students as being non-learning disabled. Also, the teachers were found to be able to confidently differentiate between the SLD and the MLD child.

Severity was primarily conceptualized as relating to the requirements of intensive individualized instruction and the need for
alternative curricula, as well as severe underachievement despite a general impression of normal ability. In addition, problems with thinking, comprehension, and the application of phonics and math concepts were important in the conceptualization of severity. DeLoach et al. conclude that these results support the position of Larsen (1978) and Hammill and Wiederholt (1972) that LD teachers understand the learning problems of children.

Rothlisberg and Liljestrom (1984) presented thirty teachers with a list of 56 behavioral descriptors and asked them to choose those that characterized either learning disabled or slow learner/low achiever populations. No differences were found except with the descriptor "low intelligence". Eighty-three percent of the teachers characterized low achievers as having low intellectual ability, while 24% thought learning disabled students could be described this way.

However, in perhaps the most definitive study, Kirk, Senf, and Larsen (1981) point out that there is still a considerable amount of confusion among professionals (including LD teachers) as to what characteristics should be included under the term "learning disabilities". They constructed a questionnaire in order to assess different opinions among teachers, psychologists, administrators, and academic personnel on crucial issues within the field of learning disabilities.

Their report is based on 1500 replies received from a printing of the survey in the 1979 issue of the Journal of Learning Disabilities. The majority of the respondents were elementary school teachers of LD students, although a substantial number of psychologists,
administrators, teacher trainers, remedial reading specialists, and teachers in other areas of special education also replied. Of those with experience in working with LD children, 51% had between four and ten years of experience, 24% had three years or less, and 25% had more than ten years. Their report consisted of the portions of the questionnaire pertaining to the concept and definition of learning disabilities.

From their results, it appears that there is a wide variation among the respondents on several major aspects of conceptualization. For example, there was a significant disagreement surrounding the inclusion of hyperactivity as a sufficient characteristic for labeling a child learning disabled. Furthermore, four percent felt that LD is simply middle class retardation. Although this percentage is small, it means that sixty people in a purportedly informed sample held this opinion. This finding may be related to the fact that many believed that the term LD is often used as an "administrative mechanism" to provide individual education to those who do not fit into any other type of exceptionality. In addition, a sizeable minority seemed to question the use of a formula for determining whether a child has a learning disability.

Kirk et al. (1981) also examined which characteristics described in the PL94-142 definition respondents felt must be present to diagnose a child as LD. As the authors explain, "Because we sensed considerable disagreements as to who should or should not be labeled LD, we sought to determine whether the differences were conceptual or merely due to the application of an accepted definition to individual cases" (Kirk et al.,
1981, p. 11). One interesting finding was that only 59% of the respondents agreed that psychological process deficits must be present. However, according to the authors, this appears to be due to the belief that the slow learner and the learning disorder/learning difficulty child, who presumably have no specific psychological deficits, cannot be distinguished from the learning disabled child. Not surprisingly, respondents were about evenly divided on whether learning disabilities must have a neurological base. The single most agreed upon notion was that a performance-potential discrepancy must be present to diagnose a child as learning disabled.

In discussing some of the responses related to remedial strategies, Kirk et al. (1981) concluded that "the data indicate that persons involved with the learning disabled, however defined, wish to understand their children and formulate a remedial program which makes sense in terms of that understanding" (p. 14).

The research to date has examined the LD concept at the level of specific thematic content found in the general definition using Likert-type survey questionnaire. Only Kirk et al. (1981) attempted to examine more abstract, conceptual issues involved in understanding LD. Furthermore, the samples of all three studies consisted of LD teachers and other professionals within the field instead of regular classroom teachers.

The present study attempted to assess the extent to which both LD and regular classroom teachers go beyond the definition in their conceptualization of the LD construct toward an actual understanding of learning disabilities. More specifically, this study addressed whether
there is a developmental progression in levels of teachers' understanding of the concept LD from a specific, concrete, personalized view to a more complex, abstract, theoretical definition. This is consistent with the orthogenetic principle of development, which states that "wherever development occurs, it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration" (Werner, 1957, p. 126).

A Wernerian theoretical framework is a particularly useful model for studying adult concept formation. Studies with adults using a Wernerian approach have typically been in the areas of language (Kaplan, 1959; Werner & Kaplan, 1963) and perception, experience, and environment (Kaplan, Wapner, & Cohen, 1975; Phillips & Framo, 1954).

Recently, Steiner (1975) has presented a Wernerian developmental view of cognitive operations of adult depression. Briefly, Steiner suggests that adults can be viewed in terms of radically less developed versus more developed epistemologies, with the focus shifting from "belief in a preformless content to a mode of process for coming to knowledge or information...which actively seeks and incorporates corrective feedback for modification" (p. 4). Describing his approach, he states: "Development is viewed here as a tool for conceptualizing the formal levels of organization with respect to the part-whole relations of various cognitive acts.... These part-whole features are then ordered in terms of Werner's orthogenetic principle...." (p.5).

Such a broad Wernerian developmental framework is also consistent with a social-cognitive approach, which offers a particularly relevant
perspective for exploring teachers' levels of understanding of LD. Within this approach, the development of children's conceptions about a variety of phenomena have been examined, and levels of understanding have been found which are consistent with a Wernerian progression (Damon, 1977; Selman, 1976). Over the past decade, a social-cognitive approach has been applied not only to social relationships and other related areas, but more recently to such things as illness and death (Bibace & Walsh, 1981).

Of particular relevance to the present study is Sweazy's (1981) research on the development of children's conceptions of learning disabilities. Using an open-ended questionnaire technique (i.e., structured interview), she found developmental changes in the understanding of LD, with significant differences between the way children aged 5-6, 7-8, 8-9, and 11-12 define LD. By assigning a stage level to each protocol, Sweazy found that there were four levels of understanding of LD. At Level I, young children respond only to the word "learning" and disregard the word "disability", simply assimilating the term with what they already know. The children go from the idea of learning anything that is positive, to specifying that it is learning which is school-related. At the second level, children begin to respond to the problem aspect of the term, but follow the same pattern. At first it is any kind of problem, and then it is an academic problem in particular. At Level III, they begin to talk about it as an academic problem associated with a psychological problem, (e.g., "He has trouble paying attention."). At the last level, children deal with exclusion criteria in which they specify that an LD child only does poorly in some
things and can do very well in other things. In sum, children's conceptions of LD progress from global, vague responses to overt, differentiated concrete responses, and finally to covert psychological descriptions.

A developmental framework is also appropriate for studies of adult concept formation. According to Flavell and Ross (1981), investigators of adult cognitive processes all too often are oblivious to developmental differences in sophistication, knowledge, experience, and skill among adults. They argue against the nondevelopmentalists' assumption that "they are studying the way the class of organisms called 'people' comprehend, remember, make . . . inferences, and act or inhibit action accordingly" (p. 307). An analysis of concept formation assumes that a concept is a generalization about related data. Thus, in developing a concept, the common characteristic or relationship must be determined. However, differentiation is also involved in developing a concept. Since concept is closely related to background of experience, understanding may vary in definiteness or completeness.

It is essential that teachers possess the degree of understanding that is consistent with their needs. Teachers' inferences concerning a specific label are frequently the product of judgmental scripts, schemas, and other knowledge structures that may be ill-suited for the purpose to which they are put. The basic assumption in this study is that domain-specific insights gathered from one's individual experience or one's profession may be viewed as a developmental progression involving increasing differentiation and hierarchic integration of parts rather than simply a straightforward increase in knowledge with an
increase in experience.

Sweazy's approach offers a potentially useful way of investigating possible differences in the understanding of the LD construct shown by teachers with various degrees of experience and contact with LD children. In addition, the present study will go beyond the type of analysis done by Sweazy in order to examine the relationship between level of understanding of learning disabilities and teachers' expectations of the LD child's academic performance and social competence, teachers' educational programming decisions, and attitude and knowledge of placement for the LD child.

Relationships between Affect, Behavior, and Cognition

As a general orientation, teachers' conceptions of learning disabilities are viewed within a tripartite model of an attitude. In discussions of the attitude concept, it is common to identify three components of an attitude: affect, behavior, and cognition. Breckler (1984) offers the following definition of an attitude: "An object is defined as a response to an antecedent stimulus or attitude object. The stimulus may or may not be observable, and can best be thought of as an independent or exogenous variable. Affect, behavior, and cognition are three hypothetical, unobservable classes of response to that stimulus." (p. 1191)

Research has demonstrated that the correlations between the three components are typically only moderate, although consistency among the components may increase as one gains experience interacting with an attitude object. This study focused only on examining the cognitive aspect of teachers' attitudes toward learning disabilities. However,
the cognitive element is often assumed the role of regulating and facilitating the relations between affect and behavior, and research has indicated greater attitude-behavior consistency when the attitude has been formed on the basis of experience (Breokler, 1984; Fazio & Zanna, 1981; Fazio, Zanna, & Cooper, 1978).

It should be noted that the nature of the linkages between these three elements has been seriously questioned in the past, and in fact, some theorists have concluded that the attitude (i.e., affect and/or cognition) to behavior connection is tenuous and uncertain (Abelson, 1972; Calder & Ross, 1973; DeFleur & Westie, 1963; Wicker, 1969). Discussions of this issue are prevalent within both the general social psychology literature and with developmental psychologists concerned with social cognition and social behavior (particularly moral judgment and moral action). However, recent research in a variety of areas indicates that there is support (both theoretically and empirically) for viewing attitude as a hypothetical construct that represents the complex interaction of cognition, affect, and behavior.

**Behavior and Cognition.** Within social psychology, Fishbein and Ajzen (1974) have been particularly influential in conceptualizing the relationship between cognition and behavior. Their basic premise is that when the nature of attitudes and behavioral criteria are taken into account, there is a relationship. The key is to use general patterns of behavior and carefully elect behavioral items that are believed to be specifically related to the attitude.

Within the area of social cognition, several investigators are currently exploring the relation between social cognition and social
behavior with success (Cooney & Selman, 1980; Mischel, 1974).

Finally, in an extensive review of the literature regarding the relationship between moral action and moral cognition, Blasi (1980) concluded that the empirical research supports the hypothesis of a significant relationship: "To a large extent, the opposite opinion, that moral reasoning and moral behavior are independent dimensions, is revealed to be a well-advertised myth" (p. 10).

**Affect and Cognition.** Although there is substantial evidence for the linkage between behavior and cognition, there is less support for the relation of affect and cognition. As Flavell and Ross (1981) point out, it is difficult to view the adult as an information-processing computer that also constantly undergoes highly affective and evaluative phenomenological experience. Similarly, Zajonc (1980) concludes that affect and cognition are independent sources of effects in information processing. However, he states that cognition and affect are controlled by systems that can influence each other in a variety of ways and thus are only partially independent.

Zajonc is essentially restating the initial assumption that attitudes are both unified and complex. The most definitive study in this regard was done by Bentler and Speckart (1981). They used structural-equation modeling to establish both convergent and divergent validity for the three attitudinal components. Thus, they found high correlations between the three elements, but also a large amount of variance that is unique to each component.

In sum, there appears to be considerable support for viewing cognition as a major influence in both the affective and behavioral
aspects of attitudes. Thus, it is important to examine teachers' conceptions of LD and the influence of these levels of understanding on teachers' expectations, feelings, and behavior toward the LD child.

**Teachers' Attitudes toward the LD Child**

Although regular classroom teachers seem to have a more positive attitude toward mainstreaming the LD child as compared to the emotionally disturbed and mentally retarded child (Blazovic, 1972; Mooney & Algozzine, 1978; Vacc & Kirst, 1977; Williams & Algozzine, 1977), it has nevertheless been found from teacher observations of actual child behavior that the LD label generates a negative bias (Foster & Salvia, 1977; Foster, Schmidt, & Sabatino, 1976; Foster & Ysseldyke, 1976; Jacobs, 1978). The experiments typically used a brief videotape of a normal child engaged in academic, perceptual/motor, and free play activities. The child was either labeled normal or given a deviancy label (LD, MR, or ED). After reviewing the tape, the teachers were asked to complete a personality, behavior checklist, and/or teacher referral form regarding the child. The studies have repeatedly shown that regular classroom teachers are influenced by such labels and maintain their negative bias in the face of conflicting evidence.

To the extent that a label of learning disabled carries with it certain negative evaluative components, the child's school performance may not be accurately perceived. The attitude of the teacher is one of the subtleties that may have more influence than other factors on the success of the student. Teacher attitudes and expectations can affect negatively or positively teacher behavior, which in turn may influence student behavior and achievement. Since attitudes and expectations may
become self-fulfilling prophecies, it is important to examine the ways that teacher attitudes may affect learning disabled children mainstreamed into the regular classroom. Good and Brophy (1973) listed a five-step process by which teacher expectations can become self-fulfilling prophecies:

1. The teacher expects specific behavior and achievement from particular students.
2. Because of these different expectations, the teacher behaves differently toward different students.
3. This teacher treatment tells each student what behavior and achievement the teacher expects from him and affects his self-concept, achievement motivation, and levels of aspiration.
4. If this teacher treatment is consistent over time and if the student does not actively resist or change it in some way, it will tend to shape his achievement and behavior.
5. With time, the student's achievement and behavior will conform more and more closely to that originally expected of him (p. 75).

There is a growing body of literature on intraclassroom differences in teacher-child interaction patterns, both in general and as related to various exceptionalities. Brophy and Good (1970) observed didactic contacts between regular classroom teachers and individual elementary school students and found that teachers demanded better performance from those children for whom they had higher expectations and were more likely to praise such performance when it occurred.
Siperstein and Goding (1985) found that teachers initiated significantly more interactions, responded with greater frequency of corrective behavior, and used more negative verbal and nonverbal behaviors with isolated/rejected LD than they used with popular non-LD children.

Boersma and Chapman (1978) reported that teachers had lower expectations for the academic achievement of learning disabled than normal children, even if areas of scholarship were included in which the LD child had performed adequately. Additionally, teachers may react negatively to the LD child due to the child's poor social skills (Bryan, 1974 & 1981; Serafica & Harway, 1979). Behaviorally, the LD child is often seen by the teacher as less desirable within the classroom than is the non-LD child (Keogh, Tohir, & Windeguth-Behn, 1974; Pullis, 1985).

Several studies have demonstrated that both teacher expectations for academic achievement and social-personal attributes of the LD child influence teacher-child interactions. Although there do not seem to be any differences between LD and non-LD children in the frequency of teacher-student interactions, it has been suggested by Bryan and her colleagues that the type of interaction pattern is qualitatively different. For example, Bryan (1974) found that when the child initiated contact, teachers responded less to the learning disabled child's initiations (43.6%) than the nondisabled child's initiations (76.7%). Whereas the teacher devoted about twice as much time helping the LD child with academic work, the teacher sought the help of the nondisabled child more often (e.g., running errands, organizing games, peer-tutoring). In addition, although the teacher was equally likely to
offer praise and approval to both groups of children, more negative statements were directed toward learning disabled than nondisabled students.

Teacher expectations may also have an effect on more subtle, nonverbal modes of interaction. Lyon (1977) investigated the relationship between a teacher's nonverbal behavior toward individual students and ratings of the student's social-personal attributes. There was a significant difference in the teacher's expression of nonverbal behavior that was related to the perception of the student's social-personal attributes, the perception of academic progress rate, and personal liking of the student.

Statement of the Problem

A review of the literature suggests that the label of learning disability has negative evaluative components, and that teachers' perceptions affect their expectations of the LD child's academic performance and differential teacher behavior toward the LD child. In addition, a few studies have assessed teachers' awareness of the defining characteristics and causes of learning disabilities. However, the degree of elaboration, or going beyond the definition to more extensive knowledge or conceptualization of the construct, learning disabilities, has yet to be explored. In addition, the extent to which teachers' understanding and knowledge of learning disabilities is related to their expectations, feelings, and behavior toward the LD child has not been examined.
The major objective of this study was to determine whether teachers' classroom experience with LD children influences their degree of understanding of the concept learning disabilities. Experience was defined by three groups of elementary education teachers: student teachers in special education, regular classroom teachers with mainstreamed LD children, and LD certified teachers.

Another objective of this study was to assess whether teachers' level of understanding of the learning disability construct is related to their expectations of the LD child's academic performance, expectations of the LD child's social competence, and individualized educational programming decisions for the LD child. In addition, the extent to which teachers' level of understanding is related to their attitude toward mainstreaming LD children and knowledge of appropriate placement was assessed.

Stated in null form, the hypotheses are:

I₀. There are no significant differences among student teachers in special education, regular classroom teachers with mainstreamed LD children, and LD certified teachers in their level of understanding of the construct, "learning disabilities", as measured by the "Conceptions of Learning Disabilities Questionnaire".

II₀. There is no significant correlation between levels of understanding of learning disabilities and teachers' expectations of the LD child's academic performance, as measured by the "Projected Academic Performance Scale—Teacher Version".
I. There is no significant correlation between levels of understanding of learning disabilities and teachers' expectations of the LD child's social skills, as measured by the "Teacher's Rating Scale of the Child's Actual Competence".

IV. There is no significant correlation between levels of understanding of learning disabilities and teachers' individualized educational programming decisions, as measured by the "Individualized Educational Programming Questionnaire".

V. There is no significant correlation between levels of understanding of learning disabilities and teachers' knowledge and attitude toward mainstreaming the LD child, as measured by the "Rucker-Gable Educational Programming Scale".
CHAPTER II
METHODOLOGY

Subjects

The sample for this study consists of 69 teachers and special education majors recruited from a large university and a metropolitan area in the midwest. Two groups of experienced teachers and one group of undergraduates in special education served as subjects. There were 25 LD-certified special education teachers, 24 regular classroom teachers who currently have or have had LD children mainstreamed in their classes, and 20 undergraduate seniors majoring in special education who have completed field practica and course requirements for student teaching. These three groups are referred to as LD teachers, Regular teachers, and Special education students. Both groups of teachers have had no less than three years of experience and currently teach or have taught within the past year at the primary (1st - 3rd), middle (4th - 5th), or junior high (6th - 8th) school level. All subjects were white females.

Measures

Level of understanding of learning disabilities. To examine possible experience-related differences in the three groups of subjects in level of understanding of learning disabilities, the "Conceptions of Learning Disabilities Questionnaire" was used (see Appendix A). This questionnaire is a revised version of the "Conceptions of Learning Disabilities Questionnaire". 
Disabilities Questionnaire" developed by Sweazy (1981).

It is an open-ended, structured clinical interview that contains six main questions that focus on the four dimensions of conceptual development: Description (questions #1 and #2), Causal Explanation (question #3), Perceptions of Treatment (question #4), and Perceptions of Prognosis (questions #5 and #6).

This measure yields a numerical score denoting level of understanding for each of the four dimensions, using scoring criteria developed by Sweazy with the addition of higher-level rating categories and their criteria developed by this researcher. The Description dimension has seven levels, with numerical scores ranging from 0 to 6. The Causal Explanation dimension also has seven levels ranging from 0 to 6. The Treatment dimension has eight levels, with scores ranging from 0 to 7. The Prognosis dimension has five levels, with a possible range of 0 to 4. A description of these levels and their rating criteria are found in Appendix B.

In order to examine the construct validity of the "Conception of Learning Disabilities Questionnaire", questions from Part I of the "Survey of Attitudes Concerning LD" (Kirk, Berry, & Senf, 1979) was administered (see Appendix C). Part I consists of questions regarding the definition of LD, exclusion criteria, causal explanation, diagnostic criteria, and typical deficits.

The survey questions are presented in a forced-choice format from 0 (no opinion) to 5 (strongly disagree). For each question, the response choices were assigned a numerical weight ranging from 0 to 4 according to whether agreement or disagreement indicated the most knowledge about
LD for that particular question. A numerical score consisting of the sum of scores from each question in Part I was obtained. This is the only part of the survey that was actually scored and used in a statistical analysis.

In order to also obtain some descriptive data regarding teachers' opinions about various aspects of learning disabilities, Parts II and III were also given. Part II consists of questions about assessment techniques, school placement decisions, and remediation. Part III consists of questions regarding the effects of PL94-142. Descriptive data from Parts II and III were based on the proportion of subjects in each group that agreed (Agree and Strongly Agree) and Disagreed (Disagree or Strongly Disagree), or remained noncommittal (No Opinion or Neutral).

Teachers' expectations of academic performance for the LD child. In order to assess teachers' expectations of the LD child's academic performance, a revision of Chapman and Boersma's (1978) "Projected Academic Performance Scale - Teacher's Version" was used (see Appendix F). Subjects were asked to use this scale to rate each of ten hypothetical cases. The scale requires teachers to rate how good they think each child will be at the beginning of the school year in six academic areas: reading, spelling, math, language arts, social studies, and science on a scale from 1 (one of the best in the grade) to 6 (one of the worst in the grade) compared to normal third and fourth graders.

The ten hypothetical cases, developed by the researcher in a pilot study, describe eight- and nine-year-old boys in third and fourth grade. For each case, a variety of academic problems, process
deficits, and emotional problems are addressed. In addition, half of
the cases (five) describe a child who is also manifesting behavioral
difficulties (see Appendix E.)

Using the rating scale scores on the "Projected Academic
Performance Scale", mean scores were calculated for each of the ten
hypothetical cases (across all six subject areas). Scores could range
from 1 to 6. In addition, a mean score across all ten cases was
obtained.

**Teachers' expectations of social competence for the LD child.**

Teachers' expectations of the learning disabled child's social
competence was measured using the "Teacher's Rating Scale of the Child's
Actual Competence" (Harter, 1979) (see Appendix G). Subjects were asked
to use this scale to rate hypothetical cases #1 and #10 (one case
without a behavioral problem and the other case including behavioral
difficulties).

The "Teachers' Rating Scale of the Child's Actual Competence"
consists of four parts, or subscales: Cognitive Competence, Social
Competence, Physical Competence, and General Self-esteem. Only Social
Competence was used in the present study, which has been found to have
an extremely clean factor structure that discriminates it from the other
three subscales. In addition, the internal consistency reliability of
this subscale has a Kuder-Richardson value of .78. The Social
Competence subscale consists of seven short statements with a structured
alternative format. Responses are based on a four-point rating scale
ranging from 1 (lowest competence) to 4 (highest competence). There
were two numerical scores, one for Case #1 and one for case #10,
consisting of the mean response across all fifteen questions. A mean score across the two cases was also calculated. The range of possible scores was from 1 to 4, with incomplete responses assigned a missing value of 2.5.

**Teachers' educational programming decisions for the LD child.**

Teachers' individualized educational programming decisions were examined using a questionnaire developed by the researcher in a pilot study. The "Individualized Educational Programming Questionnaire" (see Appendix H) consists of requesting the subjects to attempt to formulate an IEP that addresses problem areas for each of two hypothetical cases (#1 and #10). Each score consists of the total number of points obtained. One point is assigned for each problem area addressed (including academic problems, psychological processing deficits, behavioral problems, and personal/interpersonal problems), each goal/instructional objective listed, and each specific suggestion regarding training methods. Scores were calculated for each of the two cases and also calculated as a mean score across the two cases.

**Teachers' attitudes toward and knowledge of educational placement.**

Teachers' attitudes toward and knowledge of appropriate mainstream settings of LD children were assessed using the "Rucker-Gable Educational Programming Scale" (Rucker & Gable, 1973). This scale consists of 30 brief descriptions of children referred for special education services. These items describe children typically classified as mentally retarded, emotionally disturbed, and learning disabled. Only the "LD" subscale was used in the present study.
The LD subscale consists of ten brief descriptions of LD children referred for special education services. For each description, teachers are asked to recommend one of seven placements ranging from 1 (an isolated treatment facility such as a residential school) to 7 (regular classroom with no basic change in treatment procedures).

The RGEPS yields two types of scores. Attitude scores are calculated directly from placement choices by obtaining a mean score for all ten cases (scores range from 1 to 7). Knowledge scores are calculated by comparing choices to the average placement on that item by a group of experts from the original normative study in special education, according to the following formula:

$$\sqrt{\frac{N}{\sum_{i=1}^{N} (X_i - Y_i)^2}}$$  (1)

where $X_i$ = a respondent's placement choice on item i, and $Y_i$ = the mean placement choice for experts on item i. Knowledge scores range from 1 to 7. Since only part of the scale was given, the two scores in the present study are actually considered "subscores" on the RGEPS consisting of items that refer to the LD category. Interrater reliability of the experts' average placement decisions on the LD subscale was .95 in the original scale development. Split-half internal consistency reliabilities range from .69 to .85 for knowledge scores and from .62 to .84 for attitude scores from the LD subscale. The scale has also been shown to have good construct validity.

Social Desirability. Because the measures of teachers' academic expectations, social competence expectations, individual educational programming, and placement decisions are based on vignettes rather than direct observations, control for socially
desirable responses was included. The "Social Desirability Scale" (Crowne & Marlowe, 1964) consists of 33 true - false statements (see Appendix K). One point is scored for each response in the socially desirable direction. Scores range from 0 (no social desirability) to 33 (highest social desirability).

Procedures

Subject recruitment. The subjects were volunteers recruited by several different methods. Part of the sample was recruited from teachers taking summer courses at a large university. The researcher arranged with the course professors a time to present to the classes a brief explanation of the study and ask for participation. Other teachers were recruited by individual telephone contacts from recommendations of teachers who had already agreed to participate. An explanation of the study was presented to these potential subjects over the telephone asking for their participation. The Special education students were recruited by the researcher's oral presentation to a class of undergraduate seniors in special education at the university. The professor of the course gave the students credit for participating in the study.

The oral presentation involved explaining to potential subjects that the researcher is interested in teachers' ideas about learning disabilities, their academic and social expectations of LD children, and their ideas regarding placement and educational programming. The importance of the study was explained in terms of the prevalence of mainstreaming of LD children and the controversy that surrounds the term
learning disability that is found in the literature. It was explained that participation involves a half-hour individual interview and a series of self-report questionnaires that will take an additional 1 to 2 hours, to be completed at home and then returned. The researcher also informed potential subjects that they can refuse to answer any part of the questionnaires and discontinue participation at any time without consequences. Procedures for maintaining confidentiality of their responses were described. After all questions about the study were answered, an interview time was scheduled for each person that volunteered. (See Appendix L for a copy of the oral presentation.)

**Interview procedure.** The researcher met with each subject individually for the initial interview either in a small quiet room at the university, in the teacher's classroom at their school (at a time when the children were not present), or at the teacher's home. The subject was first asked to review a copy of the oral presentation and then sign a standard consent form. The researcher then began the interview by asking the subject some general background information regarding their teaching experience, amount of contact with LD children, level of education, certification, and work setting. Following this, the "Conceptions of Learning Disabilities Questionnaire" was given using clinical interview techniques. Responses were taped to permit an accurate record of the interview for later transcription, after which the tapes were erased.

**Questionnaire Procedure.** At the conclusion of the interview, the researcher went over the instructions for each of the remaining
questionnaires with the subject, explaining that these should take approximately 1 to 2 hours to complete. A subject number was assigned to each set of protocols in order for the researcher to score the questionnaires without knowledge of identifying information. In addition, each set was assigned an order number to counterbalance the first three questionnaires in the set regarding teachers' expectations of academic performance and social competence, and IEP formulations. RGEPS placement decisions were fourth. The LD survey was fifth due to the detailed information about learning disabilities found in the questions. The "Social Desirability Scale" was last, since it was unrelated to the subject matter of the other measures. Teachers were asked to complete each questionnaire in the order given. It was emphasized to each subject that she should call the researcher if there are any questions while completing the materials or if she would like to know more about the study. The subjects were also told that a brief summary of the results of the study would be mailed to them if they requested this when returning their packet. After making arrangements for returning the packet of materials, each subject was thanked for participating.

**Preliminary Data Analyses**

Reliability and validity of the "Conceptions of Learning Disabilities Questionnaire". In order to establish interrater reliability for the "Conceptions of Learning Disabilities Questionnaire", a second rater independently scored all of the protocols. Pearson product-moment coefficients were calculated for each
of the four dimensions using the scores assigned by each rater.

To determine whether the scores on the four dimensions of Description, Causal Explanation, Treatment, and Perceptions of Prognosis on the "Conceptions of Learning Disabilities Questionnaire" were intercorrelated, Pearson product-moment correlations were calculated for the entire sample.

In order to examine construct validity for the "Conceptions of Learning Disabilities Questionnaire", numerical scores obtained in Part I of the "Survey of Attitudes Concerning Learning Disabilities" were correlated with scores on each of the four dimensions across all three groups.

"Projected Academic Performance Scale". In order to examine the intercorrelations among the ten individual scores on the "Projected Academic Performance Scale", a Pearson product-moment correlation was performed across the three groups.

"Teachers' Rating Scale of the Child's Actual Competence". Pearson correlations were also performed on the entire sample on the two separate scores obtained on the "Teachers' Rating Scale of the Child's Actual Competence" for hypothetical cases #1 and #10.

"Individualized Educational Programming Questionnaire". Pearson correlations were performed across groups on the two separate IEP scores obtained on the "Individualized Educational Programming Questionnaire" (for cases #1 and #10).

To determine whether years of teaching experience was significantly related to teachers' ability to make programming decisions for LD children, a Pearson correlation was performed using number of years
teaching and scores on the IEPs for both cases #1 and #10 separately.

Data Analyses for Experience-Related Differences

To address the first hypothesis posed by this study concerning experience-related differences in teachers' conceptions of LD, chi-square tests of homogeneity were performed on each of the four dimensions of the "Conceptions of Learning Disabilities Questionnaire" according to group membership. To determine whether differences occurred uniformly among all groups or only among certain groups, partitioning of chi-square into smaller tables was used (Shaffer, 1973).

To explore possible experience-related differences in teachers' academic and social expectations, educational programming decisions, and knowledge and attitude of educational placement for LD children, analyses of covariance were performed for each of these variables. Numerical scores obtained from the following instruments were used: Mean scores from the "Projected Academic Performance Scale", "Teacher's Rating Scale of the Child's Actual Competence", and the "Individualized Educational Programming Questionnaire", and knowledge and attitude scores from the "Rucker-Gable Educational Programming Scale". Scores from the "Social Desirability Scale" were used as a covariant.

Data Analyses of Relationships with Level of Understanding

Pearson correlations were used to determine the relationships between levels of understanding of learning disabilities and teachers' academic and social expectations, programming decisions, and attitude and knowledge toward educational placement for the learning disabled.
Numerical scores from the following instruments were used: "Conceptions of Learning Disabilities Questionnaire", "Projected Academic Performance Scale", "Teachers' Ratings of the Child's Actual Competence", "Individualized Educational Programming Questionnaire", and the "Rucker-Gable Educational Programming Scale". Since experience-related differences were found, correlational analyses were performed separately for each group and for the entire sample.

Pearson correlations were used to examine the relationships between mean scores on the "Projected Academic Performance Scale", "Teachers' Rating Scale of the Child's Actual Competence", and the "Individualized Educational Programming Questionnaire", and attitude and knowledge scores from the "Rucker-Gable Educational Programming Questionnaire". Correlational analyses were performed separately for each group and across all three groups.

A stepwise multiple regression procedure was performed in order to determine the extent to which level of understanding predicts the five dependent variables. Correlational analyses were performed separately for each group, and with all subjects together.
CHAPTER III

RESULTS

Preliminary Analyses

Reliability and validity of the "Conceptions of Learning Disabilities Questionnaire". Interrater reliability for the "Conceptions of Learning Disabilities Questionnaire" was established by having a second rater independently score all "Conceptions of Learning Disabilities Questionnaire" protocols on each of the four dimensions, using the scoring criteria developed by Sweazy and the present researcher. Pearson Product-moment coefficients were calculated for each dimension between raters. The scores assigned by the two independent raters were significantly correlated on all dimensions:

Description \( r = .94, p < .001 \);
Causal Explanation \( r = .91, p < .001 \);
Treatment \( r = .92, p < .001 \); and Perceptions of Prognosis \( r = .84, p < .001 \).

Intercorrelations between the scores for each of the four dimensions were also calculated. It was found that the Description dimension was significantly related to all of the other dimensions. In addition, Causal Explanation was related to Treatment (see Table 1). As part of establishing construct validity for the "Conceptions of Learning Disabilities Questionnaire", questions from Part I of the "Survey of Attitudes Concerning Learning Disabilities" was administered, and scores
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<td>0.44**</td>
<td>0.45**</td>
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<td>0.33*</td>
<td>0.10</td>
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<td>Prognosis</td>
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*p < .005  **p < .001
from the measure were correlated with the scores from the four dimensions. Pearson product-moment correlations revealed significant relationships between the scores survey and scores from the Description dimension ($r = .37, p < .001$), and between the survey scores and the Treatment dimension ($r = .28, p < .01$). Scores from the Causal Explanation and Prognosis dimensions were not correlated with the survey scores.

"Projected Academic Performance Scale". Teachers' ratings of LD children's academic performance yielded eleven separate numerical scores: one for each of ten hypothetical cases and one mean score across cases. A preliminary correlation analysis was used to determine whether it would be appropriate to use the mean score across cases for all subsequent analyses involving the "Projected Academic Performance Scale" by examining the Pearson product-moment correlations among the scores for each of the ten cases. The majority of the ten cases were highly correlated (see Table 2), and therefore it was determined that a mean score across cases is representative of the teachers' responses for each individual case. Case #3 failed to correlate with cases #7, #8, #9, and #10, and case #6 did not correlate with cases #5 and #7. Case #5 also did not correlate with #10. These cases were not notably different from the majority of the cases that did correlate.

"Teachers' Rating Scale of the Child's Actual Competence". Teachers' ratings of the LD child's social competence yielded a numerical score for each of two hypothetical cases (#1 and #10). Since these two cases differ in that case #10 describes an LD child with behavioral difficulties in addition to problems of an academic nature or
<table>
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<td>3</td>
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<td>.22*</td>
<td>.20*</td>
<td>.45**</td>
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<td>.39**</td>
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<td>.55**</td>
<td>.46**</td>
<td>.38**</td>
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<td>.33**</td>
<td>.46**</td>
<td>.04</td>
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<td>-----</td>
<td>.11</td>
<td>.37**</td>
<td>.23*</td>
<td>.42**</td>
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<td>.57**</td>
<td>.24*</td>
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<td>.48**</td>
<td>.22*</td>
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<td>-----</td>
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</tr>
</tbody>
</table>

*p<.05, **p<.01
psychological processing deficit, teachers' ratings of these two cases using the "Teachers' Rating Scale of the Child's Actual Competence" could possibly have been quite different. However, preliminary analysis revealed that teachers' ratings on these two cases were highly correlated (PPM coefficient = .72, p < .001). Thus, the mean score across the two cases was used for all subsequent analyses.

The score on the "Teachers' Rating Scale of the Child's Actual Competence" was then examined for possible correlation with subjects' social desirability scores, since twelve subjects refused to answer at least 75 percent of the questions on this questionnaire for both cases, basing their objections on feeling uncomfortable judging children. A Pearson correlation was done to examine a possible relationship between refusal to complete one or both questionnaires and those subjects' social desirability scores. There was no significant relationship.

"Individualized Educational Programming Questionnaire". Teachers' educational programming decisions yielded a numerical score for each of two hypothetical cases (#1 and #10). A preliminary analysis revealed that the two cases were highly correlated (.53, p < .001). Thus, the mean score across the two cases was used for all subsequent analyses.

In order to examine whether teachers' scores on the "Individualized Educational Programming Questionnaire" were related to number of years of teaching experience, a Pearson correlation was performed separately for each of the two cases (#1 and #10). No relationship was found for case #1 or for case #10.
Experience-Related Differences

Teachers' conceptions of learning disabilities. To test the null hypothesis that there are no significant differences among Special education students, Regular teachers, and LD teachers in level of understanding, chi-square tests of homogeneity were performed using level scores for each dimension on the "Conceptions of Learning Disabilities Questionnaire". The four initial chi-square tests yielded three 3 x 5 contingency tables and one 3 x 3 table. Experience-related differences were significant for Description, $\chi^2(6, N = 68) = 52.78, p < .01$, Causal Explanation, $\chi^2(8, N = 68) = 20.44, p < .01$, and Treatment, $\chi^2(8, N = 68) = 24.18, p < .01$. The mean level scores and standard deviations for each group on each dimension are shown in Table 3.

To determine whether differences occurred uniformly among all groups or only among certain groups, partitioning of chi-square into smaller tables was used for the three dimensions that indicated significant differences in the initial chi-square tests (Shaffer, 1973). Results of these chi-square tests showing group comparisons are summarized in Table 4, and are discussed below as they pertain to each of the four dimensions.

Description. The partitioned chi-squares for scores on the Description dimension revealed significant differences between all groups. Special education students were significantly lower in their level of definition of a learning disability that Regular teachers $\chi^2(3, N = 43) = 10.36, p < .05$, and LD teachers $\chi^2(3, N = 44) = 52.26, p < .01$. In addition, Regular teachers were significantly lower in their level of definition than LD teachers $\chi^2(3, N = 49) = 25.88, p < .01$. 

Table 3
Mean Level Scores for Teachers' Understanding of Learning Disabilities

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Group</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Special Ed.</td>
<td>3.8</td>
<td>0.8</td>
<td>4.5</td>
<td>1.3</td>
<td>5.9</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Regular</td>
<td>3.8</td>
<td>1.1</td>
<td>4.2</td>
<td>1.1</td>
<td>5.2</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>LD</td>
<td>5.2</td>
<td>0.9</td>
<td>5.6</td>
<td>1.5</td>
<td>6.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Cause</td>
<td>Special Ed.</td>
<td>3.8</td>
<td>0.8</td>
<td>4.5</td>
<td>1.3</td>
<td>5.9</td>
<td>0.3</td>
</tr>
<tr>
<td></td>
<td>Regular</td>
<td>3.8</td>
<td>1.1</td>
<td>4.2</td>
<td>1.1</td>
<td>5.2</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>LD</td>
<td>5.2</td>
<td>0.9</td>
<td>5.6</td>
<td>1.5</td>
<td>6.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Treatment</td>
<td>Special Ed.</td>
<td>3.4</td>
<td>0.8</td>
<td>3.7</td>
<td>0.7</td>
<td>3.9</td>
<td>0.4</td>
</tr>
<tr>
<td></td>
<td>Regular</td>
<td>3.8</td>
<td>1.1</td>
<td>4.2</td>
<td>1.1</td>
<td>5.2</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>LD</td>
<td>5.2</td>
<td>0.9</td>
<td>5.6</td>
<td>1.5</td>
<td>6.5</td>
<td>0.7</td>
</tr>
</tbody>
</table>
Table 4

Results of Partitioning of Chi-Square

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Stud. vs. Reg.</th>
<th>Stud. vs. LD</th>
<th>Reg. vs. LD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>10.36*</td>
<td>52.26**</td>
<td>25.88**</td>
</tr>
<tr>
<td>Cause</td>
<td>2.88</td>
<td>18.11**</td>
<td>10.24**</td>
</tr>
<tr>
<td>Treatment</td>
<td>2.54</td>
<td>19.43**</td>
<td>13.30*</td>
</tr>
<tr>
<td>Prognosis</td>
<td>2.03</td>
<td>5.54</td>
<td>1.61</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01.
Special education students generally responded with Level IV responses, whereas significantly more of the Regular teachers responded at Levels V and VI. Almost all of the LD teachers consistently responded at Level VI.

Causal Explanation. The partitioned chi-squares for scores on the Causal Explanation dimension revealed that significant group differences occurred between Special education students and LD teachers, and Regular teachers and LD teachers. There was no significant difference between Special education students and Regular teachers. LD teachers were significantly higher in their level of Causal Explanation of a learning disability than Special education students \( X^2(4, N = 44) = 18.11, p < .01 \), and Regular teachers \( X^2(4, N = 49) = 10.24, p < .05 \). The majority of the Special education students and Regular teachers responded at Level IV. In contrast, most of the LD teachers gave Level V and Level VI responses.

Treatment. The partitioned chi-squares on the Treatment dimension revealed significant differences between Special education students and LD teachers, and Regular teachers and LD teachers. There was no significant difference between Special education students and Regular teachers. LD teachers were significantly higher in their level of understanding of treatment of a learning disability than Special education students \( X^2(4, N = 44) = 19.43, p < .01 \), and Regular teachers \( X^2(4, N = 49) = 13.30, p < .05 \). Special education students and Regular teachers generally responded at Levels V and VI, whereas LD teachers responded at Level VII.
Prognosis. Since the initial chi-square for the Prognosis dimension did not indicate any significant experience-related differences, the scores on this dimension were not partitioned into smaller chi-squares. Almost all of the subjects responded at Level IV.

In summary, the null hypothesis that there are no significant differences among Special education students, Regular teachers, and LD teachers in level of understanding can be rejected for Description, Causal Explanation, and Treatment. In general, there was an increase with experience as defined by Special education students, Regular teachers, and LD teachers.

Teachers' expectations of the LD child's academic performance. To investigate whether teachers' expectations of the LD child's academic performance vary as a function of experience as operationalized by the three groups, an analysis of covariance was performed on the mean scores (across cases) on the "Projected Academic Performance Scale", with the social desirability score used as the covariant. The analysis showed no significant group effect. All subjects regardless of group expected children with learning disabilities to perform slightly below average. Table 5 shows the mean scores and standard deviations for each group. Results of the analysis of covariance are found in Appendix M.

Teachers' expectations of the LD child's social competence. To investigate whether teachers' expectations of the LD child's social competence vary as a function of experience, an analysis of covariance was performed on the mean score across cases on the "Teachers' Rating Scale of the Child's Actual Competence", with the social desirability score as the covariant. There was no significant group effect. Across
groups, subjects in general held the expectation that children with learning disabilities are not very competent in social skills (see Table 5 for group means and standard deviations). Results of the analysis are in Appendix N.

**Teachers' educational programming decisions.** To investigate whether teachers' educational programming decisions for the LD child vary as a function of experience as defined by the three groups, an analysis of covariance was performed on the mean score across cases on the "Individualized Educational Programming Questionnaire", with the social desirability score as the covariant. There was no significant group effect. All three groups were able to address the LD child's problem areas when making educational programming decisions (see Table 5 for group means and standard deviations). Results of the analysis are in Appendix O.

**Teachers' attitudes toward educational placement.** To investigate whether teachers' attitudes for educational placement for the LD child vary as a function of experience as defined by the three groups, an analysis of covariance was performed on the attitude score from the "Rucker-Gable Educational Programming Scale", with the social desirability score as the covariant. There was a significant group effect, $F(1, 66) = 4.62, p < .05$. Regular teachers were significantly less restrictive than Special education students and LD teachers. More of the Regular teachers chose consultation and direct services, whereas Special education students and LD teachers generally chose a part-time special class or resource room services (see Table 5 for group means and standard deviations). Results of the analysis are in Appendix P.
Table 5

Mean Scores for the Five Dependent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Group</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Special Ed.</td>
<td>Regular</td>
<td>LD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M  SD</td>
<td>M  SD</td>
<td>M  SD</td>
<td></td>
</tr>
<tr>
<td>Academic Expectations</td>
<td>4.2 0.5</td>
<td>4.2 0.4</td>
<td>4.4 0.5</td>
<td></td>
</tr>
<tr>
<td>Social Expectations</td>
<td>2.0 0.6</td>
<td>2.0 0.3</td>
<td>1.9 0.5</td>
<td></td>
</tr>
<tr>
<td>Educational Programming</td>
<td>12.7 4.2</td>
<td>13.0 6.5</td>
<td>14.5 4.6</td>
<td></td>
</tr>
<tr>
<td>Placement Attitudes</td>
<td>4.0 0.5</td>
<td>4.5 0.5</td>
<td>4.0 0.5</td>
<td></td>
</tr>
<tr>
<td>Placement Knowledge</td>
<td>3.5 0.9</td>
<td>3.1 0.9</td>
<td>3.4 0.9</td>
<td></td>
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</tbody>
</table>
Teachers' knowledge of educational placement. To investigate whether teachers' knowledge for educational placement for the LD child varies as a function of experience as defined by the three groups, an analysis of covariance was performed on the knowledge score from the "Rucker-Gable Educational Programming Scale", with the social desirability score as the covariant. There was no significant group effect. Teachers were less likely to place LD children in full-time special classes compared to the experts in the RGEPS original normative study (see Table 5 for group means and standard deviations). Results of the analysis are in Appendix Q.

Relationships with Level of Understanding

Teachers' expectations of the LD child's academic performance. To test the null hypothesis that there is no significant correlation between levels of understanding of learning disabilities and teachers' expectations of the LD child's academic performance, Pearson product-moment correlations were performed between level scores on all four dimensions from the "Conceptions of Learning Disabilities Questionnaire" and the mean score across cases on the "Projected Academic Performance Scale". Since experience-related differences were found, correlational analyses were performed separately for each group, then together across all three groups. (See Table 6 for the correlation matrix.)

It was found that the level scores on the Treatment dimension were significantly related to Special education students' and LD teachers' expectations of the LD child's academic performance. There was no relationship between level scores on the Treatment dimension and Regular
Table 6

Intercorrelations between Level of Understanding and Academic Performance Expectations

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Special Ed.</th>
<th>Regular</th>
<th>LD</th>
<th>All Grps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>.19</td>
<td>-.14</td>
<td>-.20</td>
<td>.11</td>
</tr>
<tr>
<td>Cause</td>
<td>-.13</td>
<td>-.20</td>
<td>-.11</td>
<td>-.03</td>
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<td>Treatment</td>
<td>-.50*</td>
<td>-.06</td>
<td>-.41*</td>
<td>-.15</td>
</tr>
<tr>
<td>Prognosis</td>
<td>-.07</td>
<td>-.00</td>
<td>-.06</td>
<td>.01</td>
</tr>
</tbody>
</table>

*p < .01
teachers' expectations of academic performance. However, there was a general trend among all groups for the Treatment dimension to be correlated with academic performance expectations.

No relationships were found between level scores on the dimensions of Description, Causal Explanation, and Prognosis.

In summary, the null hypothesis that there is no significant correlation between level of understanding and expectations of academic performance cannot be entirely rejected.

Teachers' expectations of the LD child's social competence. To test the null hypothesis that there is no significant correlation between level of understanding of learning disabilities and teachers' expectations of the LD child's social competence, Pearson correlations were performed between level scores on all four dimensions and the mean score across cases on the "Teachers' Rating Scale of the Child's Actual Competence". Correlational analyses were done separately for each group, then together across groups.

It was found that the level scores on the Treatment dimension were significantly related to LD teachers' expectations of the LD child's social competence. In addition, there was a trend for the scores on the treatment dimension to be related to social competence expectations for Special education students. There was no relationship between level scores and Regular teachers' expectations of social competence for the LD child, or across the three groups. (See Table 7 for the correlation matrix.)

No relationships were found between level scores on the dimensions of Description, Causal Explanation, or Prognosis.
Table 7

Intercorrelations between Level of Understanding and Social Competence Expectations

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Special Ed.</th>
<th>Regular</th>
<th>LD</th>
<th>All Grps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>-.18</td>
<td>-.05</td>
<td>.30</td>
<td>-.12</td>
</tr>
<tr>
<td>Cause</td>
<td>.28</td>
<td>.04</td>
<td>.03</td>
<td>.06</td>
</tr>
<tr>
<td>Treatment</td>
<td>.37</td>
<td>-.22</td>
<td>.39*</td>
<td>.07</td>
</tr>
<tr>
<td>Prognosis</td>
<td>-.05</td>
<td>.06</td>
<td>.08</td>
<td>-.03</td>
</tr>
</tbody>
</table>

*p < .05
The null hypothesis that there is no significant correlation between level of understanding and expectations of social competence cannot be entirely rejected.

**Teachers' educational programming decisions.** To test the null hypothesis that there is no significant correlation between level of understanding of learning disabilities and teachers' educational programming decisions, Pearson correlations were performed between the level scores on all four dimensions and the mean score across cases from the "Individualized Educational Programming Questionnaire". Analyses were done separately for each group, then across all three groups. (See Table 8 for the correlation matrix.)

It was found that the level scores on the Treatment dimension were significantly related to Regular teachers' educational programming decisions for the LD child. There was no relationship between level scores on the Treatment dimension and Special education students' or LD teachers' educational programming decisions. However, there was a significant correlation between Treatment and educational programming scores when the analysis was performed across groups.

No relationships were found between level scores on the dimensions of Description, Causal Explanation, and Prognosis and educational programming decisions.

In summary, the null hypothesis that there is no significant correlation between level of understanding and educational programming decisions cannot be entirely rejected.

**Teachers' attitudes toward educational placement.** To test the null hypothesis that there is no significant correlation between level of
Table 8

Intercorrelations between Level of Understanding and Educational Programming Decisions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Special Ed.</th>
<th>Regular</th>
<th>LD</th>
<th>All Grps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>-.28</td>
<td>.20</td>
<td>-.01</td>
<td>.17</td>
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<tr>
<td>Cause</td>
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<td>-.17</td>
<td>-.01</td>
</tr>
<tr>
<td>Treatment</td>
<td>-.05</td>
<td>.63*</td>
<td>.07</td>
<td>.37*</td>
</tr>
<tr>
<td>Prognosis</td>
<td>-.25</td>
<td>.07</td>
<td>-.19</td>
<td>-.03</td>
</tr>
</tbody>
</table>

*p < .001
understanding of learning disabilities and teachers' attitudes toward educational placement for LD children, Pearson correlations were performed between level scores on all four dimensions and the attitude score from the "Rucker-Gable Educational Programming Scale". No significant relationships were found between level scores on any of the four dimensions and attitudes toward educational placement. The null hypothesis cannot be rejected. (See Table 9 for correlation matrix.)

**Teachers' knowledge of educational placement.** To test the null hypothesis that there is no significant correlation between level of understanding of learning disabilities and teachers' knowledge of educational placement for the LD child, Pearson correlations were performed between level scores on all four dimensions and the knowledge score from the "Rucker-Gable Educational Programming Scale". Analyses were done separately for each group, then across all three groups. (See Table 10 for correlations matrix.)

It was found that the level scores on the Causal Explanation dimension were significantly related to Regular teachers' knowledge of educational placement for the LD child. There was no relationship between level scores on the Causal Explanation dimension and Special education students' or LD teachers' knowledge of educational placement. However, there were trends indicating relationships between three of the four dimensions (Description, Causal Explanation, and Treatment) and knowledge of educational placement decisions when the analysis was performed across the three groups.

There was no relationship between level scores on the Prognosis dimension and knowledge of educational placement.
Table 9

Intercorrelations between Level of Understanding and Attitudes Toward Educational Placement Decisions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Special Ed.</th>
<th>Regular</th>
<th>LD</th>
<th>All Grps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>.15</td>
<td>.22</td>
<td>.16</td>
<td>.02</td>
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<tr>
<td>Cause</td>
<td>-.09</td>
<td>.04</td>
<td>-.03</td>
<td>-.07</td>
</tr>
<tr>
<td>Treatment</td>
<td>-.08</td>
<td>.19</td>
<td>.10</td>
<td>-.01</td>
</tr>
<tr>
<td>Prognosis</td>
<td>-.05</td>
<td>-.09</td>
<td>.02</td>
<td>-.06</td>
</tr>
</tbody>
</table>
Table 10

Intercorrelations between Level of Understanding and Knowledge of Educational Placement Decisions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Group</th>
<th>Special Ed.</th>
<th>Regular</th>
<th>LD</th>
<th>All Grps.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
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<td>-.14</td>
<td>-.26</td>
<td>-.07</td>
<td>-.16</td>
</tr>
<tr>
<td>Cause</td>
<td></td>
<td>-.28</td>
<td>-.35*</td>
<td>.08</td>
<td>-.19</td>
</tr>
<tr>
<td>Treatment</td>
<td></td>
<td>-.16</td>
<td>-.24</td>
<td>-.10</td>
<td>-.16</td>
</tr>
<tr>
<td>Prognosis</td>
<td></td>
<td>.26</td>
<td>-.01</td>
<td>.15</td>
<td>.10</td>
</tr>
</tbody>
</table>

*p < .05
The null hypothesis that there is a significant correlation between level of understanding and knowledge of educational placement cannot be entirely rejected.

Inter-test Relationships. Pearson correlations were also used to examine the relationship between teachers' mean scores on the "Projected Academic Performance Scale", "Teachers' Rating Scale of the Child's Actual Competence", and the "Individualized Educational Programming Questionnaire", and knowledge and attitude scores on the "Rucker-Gable Educational Programming "Scale". Strong relationships were found between scores of teachers' expectations of the LD child's academic performance, expectations of social competence, and knowledge and attitude of educational placements for LD children (see Table 11). Scores of teachers' educational programming decisions were not related to any of the other dependent variables scores. However, there was a trend for teachers' expectations of the LD child's social competence to be related to teachers' educational programming decisions. (See Table 11 for the intercorrelations between the five dependent variables).

Predictive relationships. Although there was no major hypothesis regarding predictive relationships, stepwise multiple regression procedures were performed in order to determine the extent to which level of understanding predicts the five dependent variables. Level scores for each dimension on the "Conceptions of Learning Disabilities Questionnaire" were entered in stepwise multiple regression analyses, with mean scores on the "Projected Academic Performance Scale", "Teachers' Rating Scale of the Child's Actual Competence", and "Individualized Educational Programming Questionnaire", and attitude and
Table 11

Intercorrelations Between the Five Dependent Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Social Competence</th>
<th>Educational Programming</th>
<th>Placement Decisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Performance</td>
<td>-.63***</td>
<td>-.14</td>
<td>-.25*</td>
</tr>
<tr>
<td>Social Competence</td>
<td></td>
<td>.18</td>
<td>.25*</td>
</tr>
<tr>
<td>Educational Programming</td>
<td></td>
<td></td>
<td>-.32**</td>
</tr>
<tr>
<td>Placement Decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td></td>
<td>.12</td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td>-.67***</td>
</tr>
</tbody>
</table>

*p < .05 **p < .01 ***p < .001
knowledge scores from the "Rucker-Gable Educational Programming Scale" used as the dependent variable scores. Since experience-related differences were found, the analyses were performed separately for each group, then together across groups. (See Appendix R for the tables of results of the stepwise multiple regressions for each group.)

It was found that the Treatment dimension significantly predicted Special education students' and LD teachers' expectations of academic performance for the LD child, $F(1, 19) = 4.76, p < .05, F(1, 25) = 10.33, p < .01$, respectively, but not for Regular teachers. The Treatment dimension predicted Regular teachers' educational programming decisions, $F(1, 24) = 11.94, p < .005$, but did not predict educational programming decisions for Special education students or LD teachers. None of the four dimensions were found to be predictors for teachers' expectations of social competence or attitudes of knowledge or educational placement. However, across groups, the Treatment dimension predicted subjects' educational placement decisions, $F(1, 68) = 6.70, p < .01$, and the Causal Explanation dimension predicted subjects' knowledge of educational placement, $F(1, 68) = 4.83, p < .05$. 
CHAPTER IV
DISCUSSION

The primary purpose of this study was to determine how teachers conceptualize the construct, learning disability, and to determine if there were experience-related differences in understanding of the construct. Experience-related differences between three groups were considered: LD certified teachers, Regular teachers with mainstreamed LD children, and Special education students.

The secondary objective was to examine whether level of understanding of learning disabilities is related to teachers' expectations of the LD child's academic performance and social competence, teachers' educational programming decisions for the LD child, and teachers' attitude and knowledge of educational placement for the child with learning disabilities.

In addition, the study provided further evidence for the usefulness and strength of the "Conceptions of Learning Disabilities Questionnaire" as a measure of an individual's level of understanding of the construct, learning disabilities. The measure showed good interrater reliability and internal consistency of the dimensions, and also some evidence for construct validity.

In the present study, a Wernerian developmental framework was adopted, which includes the following assumptions: 1) Development
proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation, articulation, and hierarchic integration (Werner, 1957); 2) The development of adults' understanding of a specific construct can be viewed in terms of less developed versus more developed levels of organization (Steiner, 1975); and 3) Concept formation involving a new domain or construct depends upon the individual's previous experience and incorporates corrective feedback for modification (Steiner, 1975).

Experience-Related Differences

Teachers' conceptions of learning disabilities. The first major null hypothesis, that there are no statistically significant experience-related changes in teachers' conception of LD, can be soundly rejected. The pattern of experience-related differences found in the present study are discussed below in relation to the general findings from Sweazy's (1980) research with children.

Description. On the Description dimension, the lowest levels (Levels 0 and I) were surpassed by all subjects in the present study. In addition, Levels II and III, generally reached by ages eleven and twelve in Sweazy's study, were rarely manifested in this population. Level IV, typically not seen until age twelve, was the lowest developmental level found with any frequency in the present study. The majority of the Special education students responded at this level, demonstrating an ability to differentiate a learning disability from mental retardation, mild adjustment reactions, and sensory impairments. However, there is no recognition that a learning disability involves a
psychological process deficit or that there must be a significant
discrepancy between academic achievement and potential.

Although one-fourth of the Regular teachers also responded at Level
IV, there was a significantly larger percentage of Regular teachers who
gave Level V responses, in contrast to the small percentage of Special
education students at this level. At Level V, there is an ability to
elaborate upon the number of characteristics that are associated with
learning disabilities. However, there is still no clear recognition
that a learning disability involves a psychological process deficit and
that there must be a significant discrepancy between ability and
academic achievement. Thus, the major difference between Special
education students' and Regular teachers' responses is seen in the
degree of elaboration used in the definition.

In contrast to Special education students and Regular teachers,
almost all of the LD teachers responded at Level VI. There were no
Special education students at this level, and only one-fourth of the
Regular teachers. At Level VI, responses indicated an understanding
that LD specifically involves a psychological process deficit and a
significant discrepancy between intellectual ability and academic
achievement. In addition, at the latter phase, there is an ability to
differentiate LD from severe emotional problems as well as mental
retardation, mild adjustment problems, and sensory impairments.

Causal Explanation. On the Causal Explanation dimension, there were
no subjects at the lowest developmental levels (Levels 0 and I), and
Levels II and III, usually reached by age twelve, were infrequent.
Level IV, not generally manifested in Sweazy's study until age ten, was a frequent response for both Special education students and Regular teachers (approximately one third of both groups). At Level IV, there is an ability to identify causes that are psychological. Although there is also an ability to cite multiple causes, there is no discussion of how these causes may interact.

More of the Regular teachers (another one-third) were able to give responses at Level V than Special education students. However, there were no significant differences between Special education students and Regular teachers. Level V responses, typically not manifested until ages eleven and twelve, indicate an understanding of the interplay between causes. However, the notion that various causes may interact is only implicit at this level, and is indicated by the degree of elaboration involved.

Level VI responses were rarely given by Special education students and Regular teachers. In contrast, over half of the LD teachers gave responses at Level VI, with an understanding that is specific, elaborate, and integrated into an organized response demonstrating a clear interactional understanding of both internal and external causes or factors that play a role in learning disabilities.

**Treatment.** On the Treatment dimension, there were no subjects at Levels 0, I, or II, which were generally surpassed by age eight in Sweazy's study. In addition, Levels III and IV, usually shown by ages eight through twelve, were infrequent.

Level V, generally not reached until ages eleven and twelve, was the lowest developmental level found with any frequency in this population.
The majority of both Special education students and Regular teachers responded at Level V (approximately half of the subjects in each group). At this level, there is an understanding of the interaction between the child and the form of treatment, but there is no recognition that the method of treatment should be adjusted depending on the child's specific strengths and deficits.

Level VI was a frequent response for all three groups of subjects, with one-fourth of the Special education students, one-third of the Regular teachers, and one-fourth of the LD teachers indicating an ability to make specific suggestions such as the use of manipulatives and more concrete approaches. However, there is still no clear understanding at this level that the method of treatment should be adjusted depending on the child's specific strengths and deficits.

In contrast to the Special education students and Regular teachers, the majority of the LD teachers were able to respond at the highest level, Level VII, with an awareness of the importance of adjusting the treatment modality according to the child's specific strengths and deficits.

Prognosis. On the Prognosis dimension, none of the subjects responded at the lowest developmental levels (Levels 0 and I). Level II, usually surpassed by age nine, was rarely manifested, and Level III, generally reached by ages eleven and twelve, was also infrequent.

Almost all of the subjects responded at Level IV which was not demonstrated until age ten in Sweazy's study. There was a clear recognition at this level that prognosis depends on severity, chronicity, and generality. In addition, a learning disability is
viewed as something that is always there, but the person has learned to cope with it or compensate for it.

In summary, there was a linear increase with experience as defined by Special education students, Regular teachers, and LD teachers, with Special education students receiving the lowest scores, reflecting the lowest developmental levels, while LD teachers received the highest scores, reflecting the highest developmental levels.

This is consistent with Sweazy's (1980) findings with children's conception of learning disabilities. Sweazy concluded that children have a developmentally-based "organized knowledge system" as related to the construct, learning disability. The present study found that adults can be viewed within a similar developmental framework, as represented by the category scoring system, with only slight revisions along the upper continuum.

When adults encounter a new construct such as learning disabilities with which they are relatively unfamiliar, the development of their understanding of the construct progresses from being undifferentiated, incomplete, and inaccurate toward being more differentiated, complete, and accurate as a function of experience. In the present study, Special education students can be viewed as the novices, and LD teachers as the experts, with Regular teachers typically being midway along the continuum of less developed versus more developed levels of organization. In order for the Special education students and Regular teachers to become experts regarding the learning disabilities construct, there must first be a generalization about related data. However, differentiation is also involved in the learning of a
construct, with incorporation of corrective feedback for modification. Finally, there is a complex, abstract, theoretical definition along with a hierarchic integration of the parts. In general, domain-specific insights gathered from one's experience are achieved as one undergoes a progression of the specific construct that involves increasing differentiation, articulation, and abstraction.

**Teachers' expectations of the LD child's academic performance.** Although there was no major hypothesis regarding experience-related differences in teachers' expectations of academic performance, this was examined given that group differences were found in level of understanding of learning disabilities. Teachers' expectations of academic performance for the LD child did not vary as a function of experience. The LD child was generally perceived as performing slightly below average academically by the majority of subjects in this study. This is consistent with previous research that indicates that teachers have lower expectations for the academic achievement of learning disabled children than normal children (Boersma & Chapman, 1978). Given prior research findings regarding the strong influence that teachers' expectations can have on the success of a student (Good & Brophy, 1973), the present study's finding that teachers have somewhat lower expectations for the LD child is important to consider when examining a child's school performance.

In the present study, almost all subjects were able to differentiate learning disabilities from mental retardation and mild adjustment reactions. This finding relates to prior studies that have shown that regular teachers seem to have a more positive attitude toward
mainstreaming the LD child as compared to the emotionally disturbed and mentally retarded child (Blazovic, 1972; Mooney & Algozzine, 1978; Vacc & Kirst, 1977; Williams & Algozzine, 1977). It may be that teachers assume that although children with learning disabilities have academic problems, they will be only slightly behind their "normal" peers in their schoolwork rather than have more substantial difficulties such as with the mentally retarded child.

**Teachers' expectations of the LD child's social competence.**

Teachers' expectations of social competence for the LD child did not vary as a function of experience. The LD child was generally perceived as not very competent in social skills. This is consistent with previous research that indicates that teachers view the LD child as less desirable behaviorally within the classroom than the non-LD child (Keogh, Tchir, & Windeguth-Behn, 1974; Pullis, 1985). Given prior studies that have shown that teachers may react negatively to the LD child due to the child's poor social skills (Bryan, 1974 & 1981; Serafica & Harway, 1979), the present finding that teachers do generally view the LD child as having poor social skills is important to consider when examining teacher-child interaction patterns and the effect a teacher can have on influencing a child's self concept and level of aspiration (Brophy & Good, 1970; Bryan, 1974; Good & Brophy, 1973). In the present study, all subjects were able to recognize that a learning disability involves a difficulty despite willingness or motivation. It may be that teachers assume that children with academic problems that are not a result of something in their control are more likely than their "normal" classroom peers to lack adequate social
skills.

**Teachers' educational programming decisions.** Teachers' educational programming decisions did not vary as a function of experience. All subjects were able to address the child's problem areas when making educational programming decisions. Nevertheless, previous studies have shown that teachers have lower expectations for the academic achievement of the LD child than "normal" children, even if areas of scholarship were included in which the child had performed adequately (Boersma & Chapman, 1978).

In the present study, many subjects did not indicate an understanding that teaching procedures should emphasize the child's strengths and address particular deficits. It may be that teachers are able to identify specific problem areas, yet do not recognize that the LD child may also have many strengths and abilities. This is supported by Rothlisberg's (1984) finding that there were no differences in the way teachers characterized learning disabled and "slow learner/low achiever" populations.

**Teachers' attitudes toward educational placement.** Teachers' attitudes of educational placement for the LD child varied as a function of differences in conception. Regular teachers tended to choose consultation and direct services for LD children, whereas Special education students and LD teachers generally chose a part-time special class or resource room services. This is consistent with Knoff's (1984) findings that indicated a pro-mainstreaming attitude among regular teachers, in contrast to significantly less positive attitudes of special education teachers. The present study's findings are
inconsistent with previous research that found regular teachers to have an unfavorable attitude toward mainstreaming (Gickling & Theobald, 1975; Hudson, Graham, & Warner, 1979; Moore & Fine, 1972; Ringlaben & Price, 1981). However, investigators have posited that this attitude may be related to such factors as unavailability of support services. In the present study, Regular teachers clearly indicated that their willingness to have LD children mainstreamed into regular classroom settings depended upon availability of support services.

**Teachers' knowledge of educational placement.** Teachers' knowledge of educational placement for the LD child did not vary as a function of experience-related differences in level of understanding. All subjects were less likely to place LD children in full-time special classes compared to the experts in the normative study. This is somewhat inconsistent with research that suggests that special education teachers probably feel that special education classes are generally more effective with exceptional students (Knoff, 1984). However, Special education students and LD teachers clearly indicated that they felt that the LD child could best be served in part-time special classes.

**Relationships with Level of Understanding**

**Teachers' expectations of the LD child's academic performance.** Teachers' level of understanding on the Treatment dimension was related to Special education students' and LD teachers' expectations of academic performance for LD children. For both groups of subjects, it was found that as level of understanding regarding treatment for the LD child increased, the expectations of the LD child's academic performance
increased. Thus, an understanding that the treatment modalities should be adjusted according to the child's specific strengths and deficits was related to Special education students' and LD teachers' higher expectations for the LD child's academic achievement.

Although no relationship was found between Regular teachers' level of understanding and their expectations of academic performance, there was a general trend among all subjects for the Treatment dimension to be related to academic expectations. This trend suggests that there may be a relationship for Regular teachers as well, but that it was not sufficiently strong to be identified statistically without the cumulative effect of pooling all subjects together.

**Teachers' expectations of the LD child's social competence.** Level of understanding on the Treatment dimension was related to LD teachers' expectations of the social competence of the child with learning disabilities. In addition, level of understanding on the Treatment dimension tended to be related to Special education students' expectations of social competence. It was found that as level of understanding on the Treatment dimension increased, LD teachers' (and typically Special education students') expectations of the LD child's social competence also increased. Thus, an understanding that the LD child's specific process deficit(s) can be addressed by teaching through strengths and developing weaknesses was related to LD teachers' more positive expectations of the LD child's social competence. This relationship also tended to hold true for Special education students. Regular teachers' level of understanding was unrelated to their expectations of social competence. It may be that Regular teachers have
lower expectations of social competence of learning disabled children regardless of the LD child's strengths, whereas Special education students and LD teachers were more optimistic of the LD child's social competence skills as they recognized the importance of teaching through the LD child's strengths in order to address specific deficits and develop areas of weakness.

**Teachers' educational programming decisions.** Level of understanding on the Treatment dimension was related to Regular teachers' educational programming decisions. As level of understanding on the Treatment dimension increased, Regular teachers' ability to address the LD child's specific problem areas when writing an individualized educational plan for the LD child increased. Thus, an understanding that teaching procedures should emphasize the child's strengths and address particular deficits was related to more adequate educational programming decisions.

Although Special education students' and LD teachers' level of understanding on the Treatment dimension was found to be unrelated to their educational programming decisions, there was a trend for Treatment to be related to educational programming decisions in general among all groups. This trend suggests that there may be a relationship, but it is not sufficiently strong to be indicated unless all the subjects are pooled together for the statistical analysis.

**Teachers' attitudes toward educational placement.** Level of understanding on all four dimensions was unrelated to Special education students', Regular teachers', and LD teachers' attitudes toward educational placement. Although Regular teachers tended to choose less restrictive settings for the LD child than Special education students or
LD teachers, the level of understanding of a learning disability did not affect teachers' attitudes toward mainstreaming. It may be that other factors such as the availability of immediate and long-term support services are more important influences on teachers' attitudes toward educational placement of the LD child than their level of understanding of learning disabilities.

**Teachers' knowledge of educational placement.** Level of understanding on the Causal Explanation dimension was related to Regular teachers' knowledge of educational placement for LD children. As the level of understanding on the Causal Explanation dimension increased, Regular teachers' knowledge of educational placement for LD children increased, indicating a tendency toward more restrictive services.

Although Special education students' and LD teachers' level of understanding on the Causal Explanation dimension was found to be unrelated to knowledge of educational placement, there was a general trend for level of understanding to be related to all subjects' knowledge of educational placement when the analysis was done across groups. This trend suggests that there may be a relationship for Special education students and LD teachers as well, but that it was not sufficiently strong to be identified statistically without the cumulative effect of pooling all subjects together.

In Knoff's (1984) research, both regular and special educators tended to agree more with the experts on the "Rucker-Gable Educational Programming Scale" when the cases were more severe (regardless of type of exceptionality). This suggests a possible explanation for the finding in the present study. Perhaps teachers' ability to understand
causal explanations for learning disabilities is associated with a tendency to feel that the LD child's problems are of a more serious nature.

Inter-test relationships. Strong relationships were found to exist between teachers' expectations of LD children's academic performance, expectations of social competence, and knowledge and attitude of educational placements. Although educational programming decisions were found to be unrelated to the other variables, there was a trend for educational programming decisions to be related to teachers' expectations of the LD child's social competence. It could be that teachers recommend one type of educational programming if the LD child is perceived to be socially competent, and another type of individualized educational plan for the LD child who is not socially competent. Overall, these findings support previous research that suggests strong interrelationships between teacher expectations for academic achievement, social-personal attributes of the LD child, and differential behavior toward the LD child (Bryan, 1981; Brophy & Good, 1970; Good & Brophy, 1973; Lyon, 1977; Keogh, Tchir, & Windeguth-Behn, 1974).

Predictive relationships. Level of understanding on the Treatment dimension predicted both Special education students' and LD teachers' expectations of the LD child's academic performance. Thus, it can be predicted that Special education students and LD teachers who were able to recognize that teaching procedures should be adjusted depending upon the LD child's specific strengths and deficits also tended to have higher expectations of the LD child's academic
performance. Given prior research findings that teachers demand better performance from those children for whom they have higher expectations and are more likely to praise such performance when it occurs (Brophy & Good, 1970), it may be particularly important for teachers to be able to recognize that the mode of teaching should be adjusted according to the child's strengths and deficits.

Level of understanding on the Treatment dimension also predicted Regular teachers' educational programming decisions. Thus, it can be predicted that Regular teachers who were able to recognize that various teaching modalities depend upon the child's particular strengths and deficits also tended to be able to address specific problem areas when writing individualized educational plans for LD children. Although special educators are typically responsible for developing IEP's, regular classroom teachers are frequently requested to review and modify a draft IEP, especially according to the feasibility of various classroom interventions (Tymitz, 1984; White & Calhoun, 1987). It may be particularly important for regular classroom teachers to have an understanding of treatment for the LD child as they formulate IEP's for children with learning disabilities.

Limitations

One of the major limitations of this study involves the problem in attempting to address the theoretical issue of the relationship between cognition and behavior due to the methods used. Caution must be used in studies that rely solely on subjective information without objective measures of behavior. It cannot be assumed that real-life, in-vivo manifestations of teachers' expectancies of LD children and programming
and placement decisions are identical to hypothetical verbal ones. The methods used do not allow a determination of the relationship between teachers' conceptions and their actual expectations and behavior toward LD children in their classrooms. However, McKinney and Feagans (1983) suggested that there is surprising concordance between teacher ratings and objective measures of classroom behavior and achievement.

Another limitation of this study is the quasi-experimental nature of the design, since random assignment of subjects to experiential conditions was impossible. However, other than being a member of a specific class subject to each condition, subjects were randomly selected from the general population of interest. It is also impossible to rule out the possibility that differences across groups may be a function of differential recruitment, particularly in a volunteer study. In addition, subject selection was not balanced across age due to the nature of one of the experiential conditions. Age-related differences between special education students and the other two groups of teachers may have conceivably caused possible artifacts or spurious relations.

**Implications**

**Theoretical Implications.** The conclusions reached about the major problems posed in this study support the efficacy of conceptualizing adult cognition within a developmental theoretical framework. Experience-related differences were found to follow a developmental progression consistent with Wernerian developmental theory. Teachers' conceptions of learning disabilities in terms of definitions, causal explanations, and perceptions of treatment involved a progression from a
more primitive level of differentiation to a more flexible, adaptive level, and finally to a more sophisticated, professional level.

This study goes beyond Sweazy's research by examining the higher levels of understanding of the construct, learning disability, as defined by the increasing elaboration of the construct. The degree of elaboration increased as teachers' conceptions of learning disabilities became more sophisticated and abstract, which is consistent with Werner's work with adult development. Viewing adults within a developmental framework rather than as "outcomes of positive growth" provides a research orientation that may prove beneficial in answering research questions involving an examination of adult cognition.

Finally, the results of this study lend some support to previous research that views cognition as a major influence in both the affective and behavioral aspects of attitudes (Blasi, 1980; Cooney & Selman, 1980; Fishbein & Ajzen, 1974; Mischel, 1974; Zajonc, 1980).

**Practical Implications.** This research contributes to a more complete understanding of teachers' definitions, causal explanations, perceptions of treatment, and perceptions of prognosis of learning disabilities. The results of this study point to the importance of increased experience and contact with LD children in order to develop knowledge about learning disabilities. In addition, the findings can be used in order to better prepare teachers dealing with LD children, which may in turn have a significant influence on the formation of more positive teacher attitudes. For example, inservice workshops that incorporate a more abstract, professional level of knowledge attainment regarding learning disabilities may be particularly beneficial.
Another practical implication of this study is the importance for the clinical psychologist working with teachers to be aware of the teacher's level of knowledge about LD. As the psychologist communicates with the teacher in an initial school conference or in working together on a specific in-school program for the child with a learning disability, it may be helpful to provide the teachers with specific information regarding learning disabilities related to the dimensions of Description, Causal Explanation, Treatment, and Prognosis. For example, Regular classroom teachers must be able to adapt their normal teaching style as well as be more aware of employing different teaching modalities and strategies.

Research Implications. Areas of future significant research regarding teachers' attitudes toward learning disabilities should examine the relationship between levels of understanding of the LD construct to actual observable behavior within the classroom setting. In addition to the questions considered in the present study regarding teachers' academic and social expectations of LD children and educational programming and placement decisions, further questions to be answered include the following: Does the level of teacher understanding of the LD construct relate to the LD child's actual academic achievement and/or social competence? Does teacher level of understanding relate to their interaction with LD children?

Exploratory research certainly offers more questions than answers, and points to the need for specific analyses of the complex interplay between affective, cognitive, and behavioral components.
APPENDIX A

"Conceptions of Learning Disabilities Questionnaire"
1. What is a learning disability?

Prompts:
A. How is the condition of LD diagnosed?
B. What are the criteria for determining eligibility and need for LD services?
C. How is a discrepancy between intellectual ability and academic achievement defined?
D. Is there anything else besides a significant gap between intellectual ability and academic achievement that is taken as additional criteria for LD?
E. What are the exclusion criteria?
F. If a child is blind or deaf and that causes them to have learning problems, does that child have LD? Why/why not?

2. How can a teacher or a parent tell if someone has a learning disability?

Prompts:
A. What are some of the signs that you would look for?
B. What are some behaviors that you might observe if a child was LD?
C. What would you look for in his or her work assignments?
D. Are all LD children hyperactive, or can a child be hyperactive and not LD or LD and not hyperactive?

3. What causes a "true" learning disability?

Prompts:
A. What do you mean when you say "born with it"?
B. Does the ______ occur before, during, or after birth?
C. Is it possible for a child to have a learning disability if he was not born with it, has not had any serious injury, or does not have any neurological dysfunction?
D. What kind of environmental factors?
4. What are the appropriate treatment and remediation procedures for children with learning disabilities?

Prompts:

A. What type of special education (if any)?

B. What specific academic procedures should be used?

C. Are there any other aspects of a learning disability that you feel it is important to address and deal with?

D. Are there other forms of treatment besides special education that are used with LD children?

5. Is it possible for someone with a learning disability not to have it anymore?

Prompts:

A. What are the chances that a child with a learning disability will not have it anymore when he or she gets older?

B. What are the chances of at least decreasing the difference between intellectual ability and academic achievement?

C. What are the chances that an LD child will overcome any secondary emotional/behavioral problems as he/she gets older?

D. What are the chances that this child will become a socially competent adult?

E. How could you tell if a person has learned to compensate for the learning disability?

F. How could you tell if someone no longer had a learning disability?
APPENDIX B

Scoring Categories for the "Conceptions of LD Questionnaire"
Description:

Scores for Descriptions of learning disabilities range from a score of 0 for Level 0 to a score of 6 for Level VI. The questions related to the Description category are numbers 1 and 2 on the "Conceptions of Learning Disabilities Questionnaire".

Level 0. At this level, there is no indication whatsoever of any rudimentary comprehension of learning disability. Furthermore, there is no attempt to conceptualize learning disability by responding either to the word "learning" or "disability". Instead, the person acknowledges incomprehension or masks it by giving an irrelevant response, which, upon further inquiry, is not shown to be related to the content of the question in any way.

Level I. At this level the person makes an attempt to conceptualize learning disability but limits the response to the word "learning", ignoring the term "disability" altogether. The term "learning" is defined as the acquisition of positive competencies which may or may not be school related. At this level, the existence of a learning disability is defined through concrete external signs.

Level II - A. Learning disability is viewed as a general negative state involving a problem, including learning problems. However, the latter are described in general terms and no mention is made of specific academic skills or of these problems as being school related.
Level II - B. Learning disability is viewed as a condition involving problems in school. Problems may be behavioral or general learning difficulties. There is no understanding that a distinguishing characteristic is a difficulty in learning one or more of the basic academic skills. Even when an instance of an academic problem is cited, it is treated as an isolated, specific behavior and not as a sign of a more general difficulty in learning a basic academic skill.

Level III - A. Learning disability is defined as a difficulty in learning one or more academic subjects. However, it is not yet seen as associated with psychological process disorders.

Level III - B. Learning disability is defined as a difficulty in learning one or more academic subjects. This difficulty is implicitly referred to by use of such words as "can't, unable, have problems, or have trouble", usually signifying difficulty despite willingness or motivation. However, there is still a difficulty in differentiating this from individual differences in degree of general intelligence or rate of learning.

Level IV - A. At this level, all of the elements necessary to accurately define a learning disability are there, but it is not elaborated or specific. As at Level III, learning disability is defined as a condition characterized by the presence of both academic problems and, implicitly, a psychological process deficit. The distinguishing feature at this level is the recognition of a significant discrepancy
between academic achievement and potential, which is at least implied by differentiating LD from mental retardation (MR).

**Level IV - B.** Same as Level IV - A. In addition, there is an ability to differentiate LD from mild adjustment reactions (e.g. parents recently divorced), as well as from MR.

**Level IV - C.** Same as Level IV - B. In addition, there is an ability to differentiate LD from sensory impairments (e.g. blindness and deafness), as well as from MR and mild adjustment reactions.

**Level V.** As at Level IV - C, there is an ability to differentiate LD from MR, mild adjustment reactions, and sensory impairments. However, at this level, the definition of a learning disability is more elaborate, which is seen in the number of characteristics cited that are typically associated with learning disabilities. Nevertheless, a psychological process deficit is still just implied.

**Level VI - A.** As at previous levels, there is an ability to differentiate LD from MR, mild adjustment reactions, and sensory impairments. The distinguishing feature at this level is the professional, more sophisticated quality of the definition by the clear recognition of a learning disability as involving a psychological process deficit. In addition, there is a specific reference to a significant discrepancy formula used to determine eligibility for LD services. However, at Level VI - A, there is still an inability to differentiate LD from severe emotional problems.
Level VI - B. Same as Level VI - A, but now there is an ability to differentiate LD from severe emotional problems. Although environmental factors may come into play, severe emotional problems or traumas are not solely a cause of LD.

Causal Explanations:

Scores for causal explanations of a learning disability range from a score of 0 for Level 0 to a score of 5 for Level V. The question related to the Explanation category is number 3 on the "Conceptions of Learning Disability Questionnaire".

Level 0. At this level, there is no indication that the child has any comprehension of a causal explanation for a learning disability. Answers at this level show either incomprehension or are irrelevant to the content of the question.

Level I. At this level, description and explanation are fused. The definition is given as an explanation which exhibits circular logic in their level of understanding causal explanation. The connotation of a learning disability may be positive or negative.

Level II. A global, general, and single cause. It may be related to an internal or external cause. Vague, undifferentiated quality of the response.
Level III. A differentiated, specific answer with single or multiple causes that are physical actions of the child or someone else. Linkage between cause and effect is not specified (e.g., the response may be either "brain damage" or "it's environmental", with no further explanation.

Level IV. A differentiated, specific answer with single or multiple causes that are psychological (e.g. lack of stimulation, lack of motivation, family problems, attitude, emotional). There is no discussion of how these causes might interact.

Level V. An interactional understanding of causes. Multiple causes, either internal or external, are given. However, the interaction is only implicit from the degree of organized elaborations of the various causes.

Level VI. An interactional understanding of causes that are both internal (physiological) and external (psychological), with an elaborated, specific discussion of how both factors come into play.

Perceptions of Treatment:

Scores for perceptions of treatment of learning disabilities range from a score of 0 for Level 0 to a score of 7 for Level VII. The question related to the Treatment category is number 4 on the "Conceptions of Learning Disabilities Questionnaire".
Level 0. At this level, there is no indication that the person has any comprehension of treatment for a learning disability. Answers show either incomprehension or are irrelevant to the content of the question.

Level I. At this level the person has a positive connotation of a learning disability and sees no need for "treatment" in terms of remediation or correction. The response indicates the idea of maintaining the condition, or of an external or internal occurrence which removes a positive state.

Level II. At this level the conception of treatment is externally based. Treatment is viewed as the remediation of a problem. The responses are general.

Level III. The focus for treatment is behavioral. Responses may be general or specific. The actions may be the child's or someone else's (e.g. parents' or teachers'). These are observable practices, events, activities, or procedures (e.g. "testing").

Level IV. Treatment relates to an additional change or an implied psychological process change. Although the response shows an indication of psychological conceptions of treatment (i.e. inferred rather than observable), there is no understanding that there is an interaction between the child and the form of treatment or that it takes time.
Level V. At this level, the response begins to show an appreciation of the concept of interaction between the child and the form of treatment. There is an implication that the process takes time. However, there is no understanding that teaching procedures should emphasize the child's strengths and address particular deficits.

Level VI. At this level, there is a recognition that treatment should include teaching through the child's strengths. This is implied by suggestions such as using manipulatives and more concrete approaches in general. However, there is no specific, clear understanding of using various teaching modalities depending upon the child's particular strengths and deficits.

Level VII. The distinguishing feature at this level is an emphasis on adjusting the mode of presentation depending upon the child's particular strengths in order to address the child's specific process deficits and simultaneously develop areas of weakness.

Perceptions of Prognosis:
Scores for perceptions of Prognosis of learning disabilities range from a score of 0 for Level 0 to a score of 4 for Level IV. Question 5 on the "Conceptions of Learning Disabilities Questionnaire".

Level 0. At this level, there is no indication that the person has any comprehension of prognosis for a learning disability. Answers
are either incomprehensible or irrelevant to the content of the questions.

**Level I.** At this level, there is a positive connotation of the concept learning disability. Prognosis is viewed as continuation of a positive condition. There is no sense of remediation implied.

**Level II.** Prognosis is viewed without qualifying statements but as positive if help is received and negative if the child does not receive help. A vague answer.

**Level III.** Prognosis is qualified with factors such as type of help given, amount of help given, and/or the child's response to help.

**Level IV.** Prognosis is qualified by severity, chronicity, or generality. Typically, learning disability is viewed as something that is always there, but the person has learned to compensate or cope with it.
APPENDIX C

"Survey of Attitudes Concerning Learning Disabilities"
PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

94-101

111-112

123-124
APPENDIX E

Case Examples
Please read the following hypothetical case examples. These children will be assigned to your class at the beginning of the upcoming academic year, in September. After reading about each child, please answer the following questionnaires.

1. Kenny, a 9-year-old 4th grader, has a severe reading problem. Although a recent psychological evaluation indicates average intellectual functioning, achievement test scores show him to be reading at a 1st grade level. Oral reading is marked by gross mispronunciations, and he often guesses wildly at words on the basis of first letters. Spelling errors include frequent omissions and substitutions. His greatest difficulty is with phonetic/analytic skills. In addition to a visual scanning problem, there is a deficit in visual-auditory integration. Besides these cognitive problems, home reports and previous school records reveal social withdrawal, as well as negative interactions with the parents and teachers regarding homework and individual desk work in class.

2. Matthew, an 8-year-old 3rd grader, is doing very poorly in reading, spelling, and math. Psychological test results have shown a significant discrepancy between his intellectual level and his academic problem areas. He is very poor at sight-word skills when reading, and he often misspells even the simplest of frequently-encountered words. He also has poor recall of sentences, whether read to him or by him. His major difficulty lies in the visual processing of information. His 2nd grade teacher described him as disruptive, frequently getting out of his seat.
and talking to classmates during individual work, and talking back disrespectfully.

3. Jim is a 9-year-old 4th grader whose math skills are at a 1st grade level, although there are no problems with reading or spelling. Testing indicates an average level of intelligence. He has poor reasoning skills, a short attention span, and also a memory deficit. Although Jim has not been a behavioral problem in previous grades, he appears to have a very negative self concept.

4. Paul, an 8-year-old 3rd grader of average intellectual functioning, has problems with the planning and execution of voluntary motor movements, especially those involved in writing. He has poor visuospatial and sequencing skills when doing paper work. Since his visual-motor coordination is poor, Paul often finds himself in situations in which he feels inadequate. Written assignments are seldom completed, although he seems to try very hard. Playground activities often result in negative interactions with peers because his performance in group games is so poor.

5. John is an 8-year-old 3rd grader who is having reading and language arts problems that seem to be a result of a major auditory processing disorder. Psychological test results show a significant discrepancy between his average intellectual level and his achievement scores in reading and language, which are at the 1st grade level. He frequently appears not to hear or understand when spoken to directly, although a
hearing test was normal. He also seems generally disoriented and unaware of himself in relation to the classroom or other people. He cannot follow, grasp, or participate in classroom discussions, but his seatwork is satisfactory if he is given a lot of time to complete the written assignments.

6. Randy is a bright 9-year-old in 4th grade who is reading only slightly below a 4th grade level. However, school records indicate a large discrepancy between his reading skills and his superior level of intellectual functioning (other academic areas were at the 6th and 7th grade level on achievement test. Many things point to a visual-perceptual deficit. He lacks good word-attack skills, cannot seem to remember the configurations of words, reverses whole words as well as letters, and has poor visual planning skills. Although he is making satisfactory progress, his frustration tolerance is low. He becomes upset and angry at himself concerning his reading performance. Recently, he became especially frustrated with his inability to read a relatively complex book about electronics that was related to a science project.

7. Larry, an 8-year-old in 3rd grade, has very poor writing skills. He approaches written assignments in a haphazard, random manner, and is unable to plan or organize a task. His work is extremely sloppy, and he makes a lot of careless mistakes. However, a recent psychological evaluation indicates an average level of intelligence. His behavior is
characterized by forgetfulness, poor judgment, impulsivity, and hyperactivity. He has also quickly become known as the class clown.

8. Allen, a 9-year-old 4th grader, is unable to grasp mathematical concepts, despite concrete and visual aids. Test results from an evaluation at the end of last year show math scores at a 1st grade level, while reading and spelling were at a 3rd grade level. Although of average intelligence, he feels that he is "dumb" and that his classmates make fun of him because he is so slow in math. Poor visual-motor coordination contributes to his low self concept. Even though reading comes easily for him, he refuses to trade off as a peer tutor for reading in return for help in math.

9. Kevin is a 9-year-old in 4th grade whose language arts skills are poor, especially in comprehension, which is at a 2nd grade level. He cannot summarize the main parts of a passage read silently to himself and written on a level he can decode. He also has problems understanding and following instructions, written or oral, which makes test-taking very hard for him. His major problems point to attention and memory deficits, and he also has difficulty with abstract reasoning. He is extremely hyperactive, constantly fidgeting in his seat, getting up and distracting the other kids, and watching whatever is going on around him.

10. Tim is a bright 8-year-old 3rd grader who is doing 1st grade work in math, although a recent evaluation places his verbal and language
abilities at a 5th grade level. He appears to be unable to order the numbers or put them in the correct sequence, making his computational skills very poor. He does not seem to understand the relationships between numbers or the actual process of how to compute a math problem. Tim has reacted to his difficulty with math by becoming increasingly aggressive. Fights with his peers have become frequent, and he often argues. His parents report that recently he has been verbally and physically abusing his younger sister.
APPENDIX F

"Projected Academic Performance Scale—Teacher Version"
In terms of the academic areas that are listed, please write the number of the statement that best describes how good you think each of the ten children will be in all six subjects at the beginning of the school year, as compared to normal third and fourth graders.

1) one of the best in the grade,
2) better than most in the grade,
3) better than some in the grade,
4) average,
5) not as good as most in the grade,
6) one of the worst in the grade.

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APPENDIX G

"Teacher's Rating Scale of the Child's Actual Competence"
Social Competence Subscale

© Susan Harter, Ph.D., University of Denver (Colorado Seminary), 1979.
APPENDIX H

"Individualized Educational Programming Questionnaire"
The individualized education program (IEP) is an important part of the Education for All Handicapped Children Act (PL94-142). It is a written agreement that is developed by a team composed of a school psychologist, special education teacher and/or supervisor, the child's regular classroom teacher(s), and others when appropriate. It is a planning instrument used to establish annual goals, instructional objectives, and methods that provide for the child's educational needs based on his/her present level of performance.

Case #1: "Kenny"

Based on the information regarding Kenny found on the "Case Examples" sheet, which of the following is the most appropriate educational placement for this child:

- Regular classroom only
- Consultation
- Consultation and Direct Services
- Resource Room
- Part-Time Special Class
- Full-Time Special Class
- Not for Public Education

Please formulate or write an IEP for Kenny that would address all of his problem areas. For each problem area, specify the goal(s) and instructional objective(s) and list the methods you would use to achieve them.
Problem Area:
Goal:
Instructional Objective(s):
Methods:

Problem Area:
Goal:
Instructional Objective(s):
Methods:

Problem Area:
Goal:
Instructional Objective(s):
Methods:

Problem Area:
Goal:
Instructional Objective(s):
Methods:

(Note: An IEP questionnaire sheet was also provided for case #10.)
APPENDIX I

IEP Scoring System
IEP Scores

1. One point for each problem area addressed. Problem areas may include academic problems, psychological process deficits, behavioral problems, and personal/interpersonal problems.

2. One point for each goal/instructional objective listed.

3. One point for each specific suggestion regarding teaching methods.
APPENDIX J

Educational Placement Decisions:
"Rucker-Gable Educational Programming Scale"
LD Subscale

© 1973 by Chauncy N. Rucker and Robert K. Gable
Teachers are ordinarily faced with a wide variety of problems arising from the many different kinds of students they work with each day. On the following pages are brief descriptions of children actually referred for special education services. For each student you are to indicate what you feel would be the best educational setting at this time.

You would actually need more information before placing most of the students, but please make your best judgments based on the information provided. Assume that all of the programs are available and competently staffed. Also assume that placements within the continuum are flexible and that it is possible for a student to be moved up or down the scale after treatment.

PLACE EACH STUDENT IN ONE OF THE SEVEN PROGRAMS FROM THE CONTINUUM BELOW

7.REGULAR CLASSROOM - with no basic change in teaching procedures.

6.CONSULTATION - regular classroom with specialists available for consultation with teacher (or parent) whenever needed.

5.CONSULTATION & DIRECT SERVICES - regular classroom with specialists available in the school to consult with teacher and provide short-term direct services to students.

4.RESOURCE ROOM - regular classroom with resource room services (special education teacher providing supplemental instruction) provided on a continuing basis in which the student can participate for as much as two hours each day.

3.PART-TIME SPECIAL CLASS - student enrolled in a special class for the majority of each day, but enters regular classroom for certain subjects.

2.FULL-TIME SPECIAL CLASS - student enrolled in a special class on a full-time basis.

1.NOT - student placed in a residential school, hospital program, treatment center, etc. because he or she cannot reasonably be handled within the context of regular or special public education.
1. Ray, age 12, is a two-time repeater with above average potential; he has great difficulty remembering material presented in a visual manner and, in spite of a great deal of remedial instruction, remains a non-reader.

2. Stan is a 12 year old of average ability who wants desperately to read, but even though he has had remedial reading instruction, he is virtually a non-reader. He disturbs other children by humming to himself much of the time. Although he is frustrated in most academic endeavors, he does very well in experiments and class discussions in science and on all oral tests.

3. Fred is a 10 year old fourth grader who was retained in first grade. His attention span is short and many of his interests are immature. His motivation for classroom work is very low, but improves markedly in a one-to-one relationship. He has difficulty with reading, spelling, and arithmetic concepts. His oral performance indicates that he is far more able than his written work would indicate.

4. Nancy is a third grader who has difficulty keeping her place during oral reading. Her handwriting is labored, the letters are very large and irregular, and she cannot write on the lines. Her work is disorganized. She gives up easily and needs a lot of personal attention.

5. Clifford, a 9 year old, is very alert and imaginative; he is able to discuss a variety of topics intelligently, but is unable to read.

6. Noel is a second grader who was retained in first grade. His performance is low in all subjects, but he appears fairly capable. He is lethargic, passive, and non-reactive, seeming to lack emotional responsiveness. He still checks each letter when copying a word and often confuses letters and whole words.

7. Vance, age seven, is a good student in all areas except mathematics which is a constant frustration to him; he is unable to deal successfully with the most basic arithmetic concepts.

8. Christopher is a very articulate second grader with many interests. He works very slowly, particularly in reading. He is weak in phonetic analysis, can't seem to retain reading skills, and any academic growth on his part depends on a great deal of drill.

9. Don, age 10, is only slightly slower than his average classmates, but he is clumsy and other students have nicknamed him "Don the dunce".

10. Jason, age 6, occasionally prints letters on backwards, writes from right to left, and is restless in class. His parents are concerned that he is still on reading readiness material rather than in a reading group like his classmates.
Scoring System for the RGEPS

Attitude Scores

Attitude scores are calculated directly from the respondent's placement choices ranging from Regular Classroom (7) to Not for regular or special public education (1). A total attitude score is calculated by summing the responses to the ten items.

Knowledge Scores

Knowledge of appropriate placement is calculated by a formula that compares the response on each item to the average placement on that item by a group of experts in special education employing the Euclidean distance formula:

$$\sqrt{\sum_{i=1}^{N} (X_i - Y_i)^2}$$  \hspace{1cm} (1)

where $X_i$ = a respondent's placement choice on item i, and $Y_i$ = the mean placement choice for the experts on item i.

Table for Calculation of Knowledge scores on the RGEPS

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APPENDIX K

"Social Desirability Scale"
APPENDIX L

Oral Presentation for Subject Recruitment
In recent years, the number of children that are being diagnosed as having learning disabilities appears to have increased, yet relatively little is known about what a learning disability is. Within the clinical-child program, there is an ongoing program of research on the development of these children and their assessment and remediation. One of these studies is designed to investigate teachers' ideas about learning disabilities, and how that might vary with the teacher's classroom experience. I am also interested in the academic and social expectations of the LD child and teachers' ideas regarding placement and educational programming. This study is my dissertation research, and is being done under the supervision of Dr. Serafica, as part of the ongoing research program in clinical-child psychology. I am here to request your participation in this study. Those who are eligible to participate are student teachers who have completed practicum requirements and teachers already in practice. Both must be in elementary or regular special education. Participation will involve an individual interview with each teacher and a series of self-report questionnaire. There are no right or wrong answers to any of the questions, and you can refuse to answer any part of the questionnaire or discontinue at any time. The interview session will probably last about thirty to forty-five minutes. Completion of the other questionnaire takes approximately 1 to 1 1/2 hours, to be done at your convenience and then returned to me. All information will remain 100% confidential. Each set of protocols will be assigned an arbitrary code number, with no identifying information on any of the data collected.
APPENDIX M

Analysis of Covariance: Experience-Related Differences for Expectations of Academic Performance
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APPENDIX N

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APPENDIX P

Analysis of Covariance: Experience-Related Differences for Attitudes toward Educational Placement
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APPENDIX R

Stepwise Multiple Regression Analyses
### Special education students

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| **Regular teachers** |     |    |     |     |     |      |
| Education          |     |    |     |     |     |      |
| Programming:       |     |    |     |     |     |      |
| Treatment          | 11.94| 18 | .01 | .54 | .40 | .64  |
| Description        | ----| -- | .70 | --- | --- | .07  |
| Cause              | ----| -- | .48 | --- | --- | -.13 |
| Prognosis          | ----| -- | .55 | --- | --- | .11  |

| **LD teachers**    |     |    |     |     |     |      |
| Academic           |     |    |     |     |     |      |
| Performance:       |     |    |     |     |     |      |
| Treatment          | 10.33| 15 | .01 | .64 | .41 | -.64 |
| Description        | ----| -- | .30 | --- | --- | -.22 |
| Cause              | ----| -- | .69 | --- | --- | -.08 |
| Prognosis          | ----| -- | .55 | --- | --- | -.13 |

### All groups

| Educational        |     |    |     |     |     |      |
| Programming:       |     |    |     |     |     |      |
| Treatment          | 6.70 | 49 | .01 | .35 | .12 | .35  |
| Description        | ----| -- | .92 | --- | --- | .01  |
| Cause              | ----| -- | .42 | --- | --- | -.12 |
| Prognosis          | ----| -- | .63 | --- | --- | -.07 |

| Knowledge of       |     |    |     |     |     |      |
| Placement          |     |    |     |     |     |      |
| Cause              | 4.83| 49 | .03 | .30 | .09 | -.30 |
| Description        | ----| -- | .56 | --- | --- | -.09 |
| Treatment          | ----| -- | .47 | --- | --- | -.11 |
| Prognosis          | ----| -- | .64 | --- | --- | .07  |

Note: .05 limit reached for all other variables entered.
REFERENCE LIST


