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A study of the relationship of social planning processes to the social competence of learning-disabled adolescents

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A STUDY OF THE RELATIONSHIP OF SOCIAL PLANNING PROCESSES TO THE SOCIAL COMPETENCE OF LEARNING DISABLED ADOLESCENTS

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Roberta Swithers Barton

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My dissertation is dedicated
to my mother, Dorothy Bratton Swithers,
for her perpetual and resolute love
and
to those youth whose learning differences
inspire my work.

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CHAPTER I

Introduction

Justification for the Study

Although some adolescents with specific learning disabilities (SLD) are among the most well-liked of their peers and may exhibit better developed social planning skills, SLD adolescents, as a group, are viewed as less socially competent than their normal learning peers (e.g., Hazel & Schumaker, 1987; McConaughy, 1986; Perlmutter, Crocker, Cordray, & Garstecki, 1983; Sabournie & Kauffman, 1986). Clinical observation suggests that those in whom such skills are poorly developed are referred for counseling or psychotherapy because of their interpersonal difficulties. Heppner and Krauskopf (1987) support this conclusion:

> Many times in counseling it becomes clear that a client's presenting problem is the result of the lack of sequential planning or even the lack of awareness of the planning steps that are needed. Important decisions are made without much processing of information. (p. 406)

Some SLD adolescents may not have developed adequate behavioral planning control processes, hereafter called social planning processes. These psychological-processing mechanisms, which govern competent social behavior, are described in the process component of Martin E. Ford's (1986) triarchic, living systems theory of social

intelligence, which evolved from his investigations of an integrative conceptual framework for social competence (M. Ford, 1979, 1982, 1984, 1986; M. Ford, Miura, & Masters, 1984; M. Ford & Thompson, 1985; M. Ford & Tisak, 1983).

Certain SLD adolescents may be less adept at anticipating and planning in social situations. Both are cognitive behaviors addressed by two constructs: means-ends thinking (Spivack, Platt, & Shure, 1976) and social judgment (Kaufman, 1979).

Means-ends thinking, an interpersonal cognitive problem-solving skill (ICPS) (Spivack et al., 1976), involves planning the means to solve social problems while considering the obstacles to be overcome and the time involved. It is considered to be the ICPS skill central to effective adolescent social behavior (M. Ford, 1982; Marsh, Serafica, & Barenboim, 1981; Pellegrini, 1985a). For example, M. Ford (1982) found significant correlations, ranging from .28 to .48, between means-ends thinking and social competence in a sample of adolescents.

Kaufman (1979) refers to social judgment as the conventional ability assessed by the Picture Arrangement and Comprehension subtests of the Wechsler Intelligence Scale for Children - Revised (WISC-R) (Wechsler, 1974). Comprehension measures "knowledge of social conventions." Picture Arrangement measures "the capacity to plan and

anticipate in a social context" (Sattler, 1982, p. 202), hereafter called social schematic ability. The correlations between these subtests are .40 on the WISC-R and .48 on the Wechsler Adult Intelligence Scale - Revised (WAIS-R) (Wechsler, 1981), indicating that only 16% and 23% of the variance is common to both subtests. In the present study, knowledge of social conventions and social schematic ability have been treated separately and not combined into a single ability as Kaufman did.

In her review of the literature, Shantz (1983) questioned the strength of the relationship between social competence and social-cognitive processes. Yet, in studies published since data were collected for that review, significant relationships have been found between interpersonal problem-solving processes and social competence in normal learning populations (M. Ford, 1982; Marsh et al., 1981; Pellegrini, 1985a). A computer search found no studies in which Kaufman's social judgment construct has been related to adolescents' social competence.

The effect of poorly or well-developed social planning processes on the social competence of SLD adolescents when the reference group includes only SLD adolescents has not been investigated. Research has shown, however, that SLD adolescents are less capable of solving social problems than their normal learning peers

(Hazel & Schumaker, 1987) and are less adept at mean-ends thinking than normal learning peers (Schneider & Yoshida, 1988; Silver & Young, 1985).

The present study investigated the extent to which social planning processes, i.e., means-ends thinking, knowledge of social conventions, and social schematic ability, were related to each other and to the social competence of a sample of SLD adolescents as perceived by peers and teachers and the adolescents themselves. Also examined was the extent to which these processes distinguished high scorers from low scorers on the social competence measure. A clearer understanding of these relationships should enable counselors and therapists to enhance the interpersonal competence of SLD youth.

Statement of the Problem

Within a group of SLD adolescents, to what extent are their social planning processes, i.e., means-ends thinking, social schematic ability, and knowledge of social conventions, related to their social competence, as perceived by peers, teachers and the adolescents themselves?

Theoretical Rationale

The cognitive problems which SLD students experience in interpersonal relationships have been described in the literature beginning with Johnson's and Myklebust's (1967) observations of deficits in children's abilities to

understand social messages. Intensive research in childrens' development of social knowledge and reasoning has been carried out only in the past twenty years, although it originated in the pioneering work of Piaget, who investigated how children communicated with each other and how they understood rules of games (Shantz, 1983).

Much of the research on children's social behavior has stayed largely at the behavioral level. Few studies have investigated how they reason about the social situations in which they find themselves or which they observe. In her 1983 review of the literature on social cognition, Shantz cited the lack of "specific and detailed theory guiding research on social-cognitive/social-behavioral relations" (p. 526), a situation remedied in part by the contributions of Martin E. Ford (1984, 1986). He investigated aspects of social intelligence (1979, 1982; M. Ford et al., 1984; M. Ford & Thompson, 1985; M. Ford & Tisak, 1983), including the relationship of social cognition to social competence in adolescents (M. Ford, 1982). From these studies and from the theories of Robert Sternberg and Donald Ford, Martin Ford derived his triarchic, living systems theory of social intelligence.

The triarchic focus derived from Sternberg's (1985) theory of human intelligence, which consisted of three subtheories: a componential subtheory, a contextual

subtheory, and an experiential subtheory. The componential subtheory explained the mental mechanisms: those which facilitated behavioral planning (metacomponents), those which were instrumental in learning (knowledge-acquisition components), and those which manipulated data (performance components). The metacomponents included executive processes involved in planning, monitoring, and evaluating task performance. Whereas metacomponents directed performance components, the performance components themselves operated on data to solve problems. Included were abilities such as inferring relations, comparing alternatives, and classifying. Knowledge-acquisition components involved learning how to solve problems and encompassed how to select what was relevant, how to combine information into an organized, coherent thought or series of thoughts, and how to compare and connect the cognitive structure thus formed to previous learning and to relevant problem solving. The experiential subtheory emphasized the ability to deal with a continuum of experiences ranging from the novel to the fully automatized.

The contextual subtheory connected the internal world to the environment, emphasizing adaptive behavior, environmental shaping, and selection of alternative environments consonant with interests, abilities, and values.

> Taken together, these subtheories address all three of the central questions associated with the study of intelligence: (1) What kind of accomplishments are relevant to an assessment of intelligence? (2) What kinds of functional processes (cognitive and noncognitive) contribute to these accomplishments? (3) What kinds of developmental processes account for changes in intelligence? (M. Ford, 1986, p. 120)

Concurring with Sternberg's logic, M. Ford developed his theory of social intelligence to include "separate but compatible elements" (M. Ford, 1986, p. 120).

Sternberg's theory interfaced with and can be applied to understanding the nature of specific learning disabilities by emphasizing the heterogeneity of the SLD population and the specificity of their learning difficulties. (Kolligian & Sternberg, 1987). Bryan (1987) proposed that "an information processing paradigm would enhance our knowledge of learning disabilities, and provide, for at least some children a more economic and hueristic route to social skill assessment and intervention" (p. 9). Both M. Ford and Sternberg used the information processing paradigm in their theories. Sternberg's componential subtheory specified metacomponents, executive processes which plan, monitor, and evaluate performance. These executive processes are conceptually similar to M. Ford's (1986) governing functions. Both theorists emphasized the ways in which information processing affects social planning processes.

M. Ford's (1986) theory derived also from D. Ford's living systems theory, the most recent publication of which occurred in 1987. D. Ford integrated "the therapist's regard for the richness and subtlety of human experience" (M. Ford, 1984, p. 170) with the research literature dealing with social cognition and social behavior. A living system is a particular kind of open system, "which combines the characteristics of an adaptive control system with self-organizing and self-constructing capabilities" (M. Ford, 1986, p. 132).

D. Ford described four sets of functions made possible by the physical structure and organization of living systems.

> 1. Biological functions: Growth, maintenance, operation, and repair of the biological structure; energy production.
>
> 2. Transactional functions: Exchange of materials essential for biological functioning; body movement and other energy exchange processes; information collection and transmission.
>
> 3. Arousal functions: Varying the amount, rate, or intensity of system activity to meet situational demands.
>
> 4. Governing functions: System organization and coordination--direction, control, and regulation of behavior; information processing; information storage. (M. Ford, 1984, pp. 171-72)

Figure 1 (M. Ford, 1984, p. 173), which follows, is a representation of the four subsystems and some of the ways in which they interact.

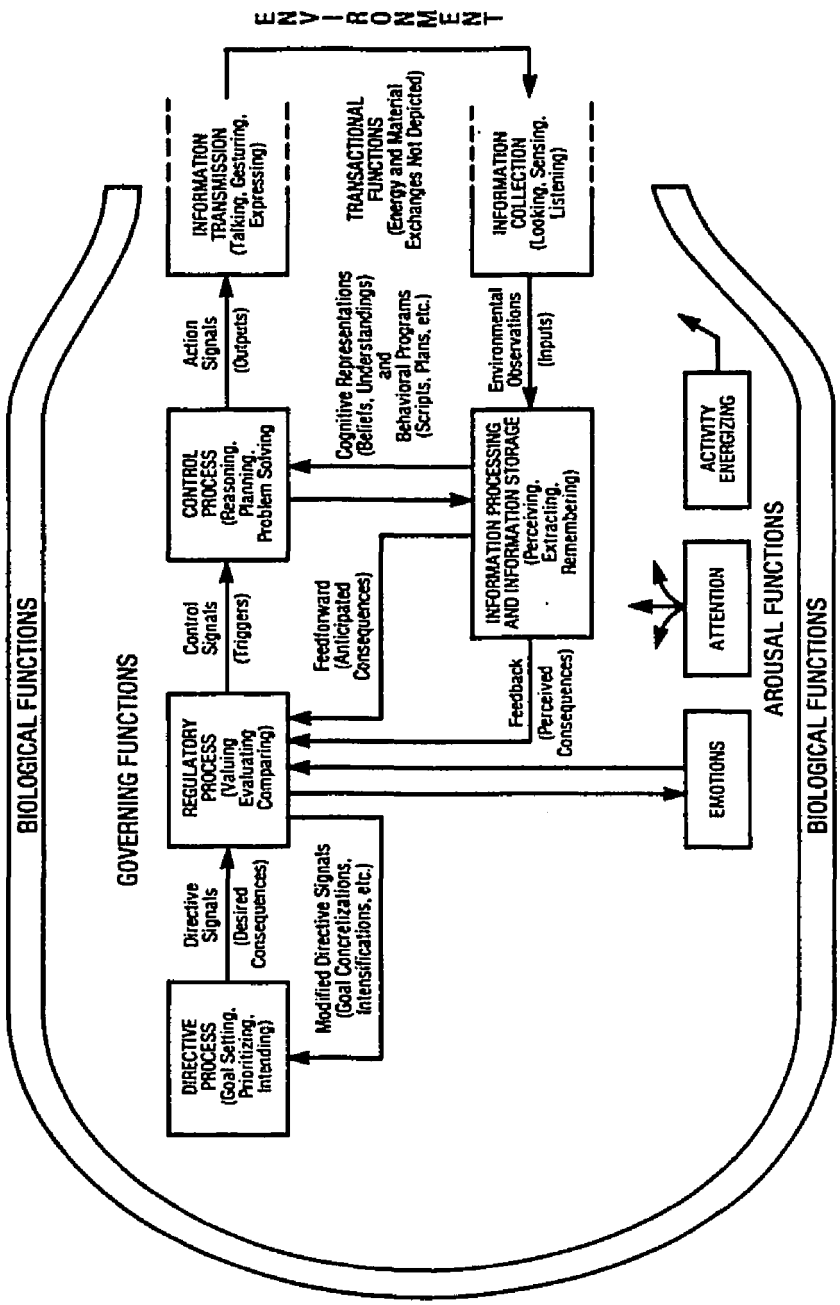

Fig. 1. A representation of the person as a living system. Only certain key functional relationships are explicitly portrayed. See text for further details. (Modified from D. Ford, 1984.)

Figure 1. A representation of the person as a living system and of some ways in which M. Ford's (1984) four subsystems interact.

M. Ford's (1986) social intelligence theory included three subtheories: (a) an outcome theory, identifying the accomplishments germane to the definition and assessment of social intelligence; (b) a process theory, identifying psychological functions contributing to social accomplishments; and (c) a developmental theory, describing functional social change processes. His systems perspective defined person-environment transactions contextually, a definition which considered situational, developmental, and cultural differences.

The outcome theory addressed social competence by assessing the extent to which a person perceives himself or is perceived by others to be accomplishing contextually relevant self-assertive and integrative goals (M. Ford, 1986). His approach fit the hierarchical organization used by systems theorists, such as D. Ford and Koestler, for whom "the meaning of competence lies in being able to maintain and promote both one's self and the social units of which one is a part" (M. Ford, 1985a, pp. 22-23). The physical structure and organization of living systems allows for four sets of functions: biological, transactional, arousal, and governing. The present study examined the control processes, one of the three governing functions (see Figure 1). These psychological processes are "responsible for the construction and selection of cognitive representations and behavioral plans relevant to

goals that have been activated by the directive process within the constraints imposed by the regulatory process" (M. Ford, 1986, p. 147).

M. Ford (1982, 1986) described two basic types of control processes. Representation construction control processes functioned to achieve cognitive goals. Although important, representation construction control processes alone did not produce socially competent behavior. They coexisted with the behavioral planning control processes "which select or create behavioral outputs that will produce desired consequences" (M. Ford, 1986, p. 148). In the present study, the behavioral planning control processes have been labelled social planning processes.

> The taxonomy of `interpersonal cognitive problem-solving´ [ICPS] skills developed by Spivack, Platt, and Shure has been the major stimulus for research on the contributions of behavioral planning control processes to socially intelligent behavior [Shure & Spivack, 1978; Spivack, Platt, & Shure, 1976; Spivack & Shure, 1974]. (M. Ford, 1986, p. 149)

Spivack et al. (1976) identified a series of interpersonal cognitive problem-solving skills, not just "a single unitary ability" (p. 5). The five skills included (a) awareness of and sensitivity to the existence of an interpersonal problem, (b) generating alternative solutions to problems (alternative thinking), (c) articulating the step-by-step means to achieve a solution to a problem (means-ends thinking), (d) considering the consequences of one's social acts

(consequential thinking) and (e) understanding and appreciating that how one acts and feels may be influenced by how others think and feel (perspective taking). M. Ford (1986) cited means-ends thinking and alternative thinking as the ICPS skills "most uniquely associated with the control process, and the ones most strongly related to effective social behavior" (p. 150). Pellegrini (1985a), Marsh et al. (1981), Shure (1982), and Spivack et al. (1976) found that mean-ends thinking mediated adjustment from middle childhood onward. Similarly, Hazel and Schumaker (1987) reported that SLD adolescents were less capable than peers of solving social problems and of predicting the consequences for their social behavior.

Several researchers have investigated adolescent means-ends thinking. Platt, Spivack, Altman, Altman, and Peizer (1974) concluded that normal adolescents were better able to use means-ends thinking than adolescent psychiatric patients. M. Ford (1982) found significant moderate correlations between means-ends thinking and the social competence of adolescents. Pellegrini (1985a) also found means-ends thinking consistently and significantly related to positive indicators of social competence. Silver and Young (1985) and Schneider and Yoshida (1988) found that SLD adolescents were significantly less capable than their NLD peers in means-ends thinking.

Two subtests of the Wechsler Intelligence Scales (Wechsler, 1974, 1981), Comprehension and Picture Arrangement, purportedly measure knowledge of social conventions and the ability to plan and anticipate or to scheme in a social context. Although linked by factor analysis (Kaufman, 1979) and conventionally used to describe social judgment ability, the relationship of these constructs and their measures to social competence has not been investigated.

The cognitive processes underlying these tasks appear to be related to means-ends thinking. Inherent to the Picture Arrangement task is a schematic reasoning process, i.e., ordering events to accomplish a specific social goal, whereas the Comprehension task involves reasoning about specific social goals.

Unlike means-ends thinking, for which empirical and theoretical relationships to social competence were found, a computer search of the literature disclosed no studies which related Kaufman's (1979) social judgment ability to social competence. Because they are conceptually and procedurally similar social planning processes, knowledge of social conventions and social schematic ability were included in the present study to see if either is related to means-ends thinking and to see if each is related to social competence.

Social planning processes have been related empirically and theoretically to social competence in samples of normal learning and SLD adolescents. The primary purpose of the present study is to contribute to the literature identifying and clarifying the relationship between the teacher-, peer-, and self-perceived social competence of SLD adolescents and the social planning aspects of their social intelligence, in particular, knowledge of social conventions, means-ends thinking, and social schematic ability.

Definition of Terms

1. Fuhrmann (1986) defined adolescence as follows:

> Adolescence extends from the onset of puberty (at about 10 or 11 in girls, 12 or 13 in boys) to the assumption of full adult responsibilities, physical, social, legal, and economic (usually about 21, but as early as 18 and as late as the mid-twenties or thirties). (p. 31)

2. M. Ford (1982) defined social competence as "the attainment of relevant social goals in specified social contexts, using appropriate means and resulting in positive developmental outcomes" (pp. 323-24). Hazel and Schumaker (1987) simply state: "A socially competent person . . . is one who can perform social skills in a socially acceptable manner" (p. 3). Social competence is "a general evaluative term that refers to the quality or adequacy of a person's overall performance regarding a social task, as judged by the individual or others"

(D'Zurrilla & Nezu, 1987).

In the present study, the social goals or tasks involved behaving "effectively in challenging social situations involving salient social objects, such as peers, parents, and teachers" (M. Ford, 1982, p. 324). Operationally, the Social Competence Nomination Form (SCNF) (Appendix A) (M. Ford, 1982) has been used to measure social competence. The use of the SCNF is justified by its internal consistency reliabilities (Cronbach's alpha), which ranged from the middle 70s to the middle 90s in two studies (M. Ford, 1982; M. Ford & Tisak, 1983). M. Ford considered his 1982 study to be a meaningful first step toward validating the SCNF, because correlations among the teacher-, peer-, and self-ratings were all significant. However, he recommended further research on the use of this measure. Since multiple perceptions avoid the dangers of judgments based on systematic bias or selective data, in the present study, peers (SCNF:P), teachers (SCNF:T), and the students themselves (SCNF:S) rated social competence. The combined ratings constitute a composite raw score (SCNF:CRS).

3. The social competence sample consisted of students enrolled at The New Community School (TNCS). Of the 59 students, SCNF data were available for 58. An original plan included a comparison of high SCNF scorers (HS), those whose SCNF scores fell at least one standard

deviation above the mean, to low SCNF scorers (LS), those whose scores fell at least one standard deviation below the mean. Because the SCNF distribution (M = 88.76, SD = 61.79) skewed upward, only two cases fell one standard deviation below the mean (SCNF:CRS = < 28) and only nine .rm55 fell one standard deviation above the mean (SCNF:CRS = >149. The revised plan includes instead the top and bottom quartiles (n = 15) where low scores equaled SCNF:CRS < 46 and high scores equaled SCNF:CRS > 108).

4. Behavioral planning control processes, in this study called social planning processes, are the array of cognitive skills required "for the construction and selection of cognitive representations and behavioral plans" (M. Ford, 1986, p. 147), and as such are a "central component of social competence" (M. Ford, 1982, p. 326).

5. Means-ends thinking, a social planning process examined in this study, is one of the ICPS skills identified by Spivack et al. (1976) and is the ICPS skill most central to mediating adjustment from middle childhood onward (M. Ford, 1982; Marsh et al., 1981; Pellegrini, 1985a; Shure, 1982; Spivack et al., 1976). "This process of thought is the ability to plan sequenced means to reach a stated goal, to consider potential obstacles that could interfere with reaching it, and to recognize that goal satisfaction may not occur immediately" (Shure, 1982, p. 135).

Operationally, four story roots (see Appendix B) from the MEANS-ENDS PROBLEM-SOLVING PROCEDURE: Stimuli and Scoring Procedures Supplement (MEPS) (Spivack, Shure & Platt, 1981) measured means-ends thinking. The combined score (MOT) from the four stories for means, obstacles, and time references represented means-ends thinking.

Studies have begun to establish the reliability and validity of the MEPS (Platt & Spivack, 1977; Spivack et al., 1981) as well as the validity of the means-ends thinking construct (M. Ford, 1982; Kennedy, Felner, Cauce, & Primavera, 1988; Marsh et al., 1981; Pellegrini, 1985a; Platt et al., 1974; Schneider & Yoshida, 1988; Silver & Young, 1985).

6. Kaufman (1979) identified social judgment as a conventional ability the measurement of which is shared by two WISC-R subtests, Picture Arrangement, which measures the "capacity to plan and anticipate in a social context," and Comprehension, which measures "knowledge of social conventions" (Sattler, 1982, p. 202). The rationale for these WISC-R subtests applies to the WAIS-R subtests as well (Sattler, 1988). The correlation between these subtests is .40 on the WISC-R and .48 on the WAIS-R indicating that only 16% and 23% of the variance is common to both subtests. Therefore knowledge of social conventions as measured by the Comprehension subtest (C) and social schematic ability as measured by the Picture

Arrangement subtest (PA) were treated separately and not combined into a shared ability as Kaufman did.

7. This study uses the definition of Specific Learning Disability (SLD) from the Regulations Governing Special Education Programs for Handicapped Children in Virginia:

> Specific Learning Disability means a disorder in one or more of the basic psychological processes involved in understanding or using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or to do mathematical calculations, which adversely affects the child's educational performance. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural, or economic disadvantage. (1984, pp. 133-34)

Students in the present study's SLD sample were currently enrolled in a special education program for the learning disabled approved by the Virginia Department of Education. They also met the admissions criteria of The New Community School (Appendix C) which include average to above average intelligence, diagnosis of specific language learning disability, and absence of significant or primary emotional-motivational difficulty that prevented learning or disrupted the educational process.

Research Hypotheses

1. Significant intercorrelations ($p<.05$) will be demonstrated among the social planning processes of a sample of SLD adolescents: (a) means-ends thinking as measured by the total score (MOT) from the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (Spivack et al., 1981), (b) social schematic ability as measured by the scaled score (PA) from the Picture Arrangement subtest of the Wechsler Intelligence Scales (1974, 1981), and (c) knowledge of social conventions as measured by the scaled score (C) from the Comprehension subtest of the Wechsler Intelligence Scales (1974, 1981).

2. The social planning processes (MOT, PA, C) will correlate significantly with the perceived social competence of the SLD adolescent sample as measured by the combined raw score (SCNF:CRS) from the Social Competence Nomination Form (M. Ford, 1982).

3. The social planning processes (MOT, PA, C) will be significant determinants ($p<.05$) of differences in perceived social competence (SCNF) in a sample of SLD adolescents.

Sample Description

The experimentally accessible population consisted of SLD adolescents who were judged to meet the Virginia Department of Education's definition of specific learning

disability and attended middle schools and high schools in central Virginia. To enable the SLD adolescents to judge the social competence of SLD peers required choosing a homogeneous sample, one in which students attended the same school and had opportunities to participate in all aspects of social life of that school.

The New Community School (TNCS) in Richmond, Virginia, which holds a Virginia Board of Education certificate to operate as a proprietary school for adolescents with specific learning disabilities, fits these requirements. TNCS's admissions criteria (Appendix C) include average to above average intelligence, diagnosis of specific language learning disability, and absence of significant or primary emotional-motivational difficulty that would prevent learning or disrupt the educational program of the school. The 59 students for whom permission to participate was obtained were included in the sample. Subjects' confidentiality was protected by using randomly assigned numbers in lieu of names on all instruments.

The UCLA system of markers (Keogh, Major-Kingsley, Omori-Gordon, & Reid, 1982) profiled the sample. Keogh (1986) and Morrison, McMillan, and Kavale (1985) recommended use of such a system to define SLD samples more precisely.

Descriptive Markers (Appendix D) provided information on age, sex, grade level, years at TNCS, socioeconomic level, primary language, educational history, and health issues. This information was gleaned from school records and the parent questionnaire (Appendix E).

Substantive Markers (Appendix D) included summary values for intellectual ability and for reading, arithmetic, and spelling achievement, as well as information about behavioral/emotional adjustment. These data were gleaned from school records and the parent questionnaire.

Topical Markers (Appendix D), those variables under investigation, included summary statistics for all scores including (a) composite social competence raw scores, (b) knowledge of social convention scaled scores, and (c) scaled scores measuring social schematic ability and (d) means-ends thinking total scores.

General Data Gathering

The Social Competence Nomination Form (SCNF) (Appendix A) (M. Ford, 1982) contains six hypothetical social situations. The researcher and a research assistant administered the SCNF to 59 students in grades seven through twelve at The New Community School. Peer nominations were obtained for each grade level group (7/8, 9/10, 11/12) and for the entire school.

The researchers gave each student two booklets (see Appendix A), one with each situation on a separate page and one with student photos and names to aid recall and to avoid spelling mishaps. The researchers read directions and each item aloud to the group, which prevented randomizing the situations. Each student named three peers from his/her grade level group and three peers from the entire school that he or she felt could best handle each situation, for a total of 36 nominations. Each also rated his or her own ability to handle each situation.

Similarly, each member of the the faculty (20) named three students from each grade level he or she taught, and three from the whole school that he or she felt could best handle each situation, for a total of between 36 and 126 nominations, depending on how many grade levels were taught.

For each student, adding scores from the peer and teacher nominations and the self-ratings resulted in a composite raw score.

Intercorrelations assessed internal consistency reliability.

Concurrently, research assistants individually administered four story roots (Appendix B) from the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (MEPS) (Spivack et al., 1981). The assistants were trained by the researcher.

Spivack et al. (1981) specify no training procedures to qualify examiners to administer and score the MEPS. However, for a year prior to the present study, the researcher included the MEPS, where appropriate, in evaluations of adolescents with learning problems, which provided an experiential basis for training examiners and scorers. Examiner training for the present study included study of the manual and supervised administration of the MEPS until the trainee executed the procedures without error.

Each MEPS story root poses a problematic social situation. The sex of the protagonist is varied to match the sex of the subject. The examiner presented only the beginning and the outcome of the story. The subject, or problem solver, devised and related the events which led to the outcome.

The examiner read the directions and each story root aloud, while the student followed a printed copy. Because SLD persons may have auditory processing problems, each student was asked to repeat the key words which ended the story to ensure content comprehension (Spivack et al., 1981). The examiner reread the story until the student expressed an understanding of the ending. The examiner probed for responses only if the subject began "by listing discrete alternate solutions" (Spivack et al., 1981, p. 3). When this occurred, she prompted the student to tell a

story, just as if he or she was watching a movie, telling everything from beginning to end (Spivack et al., 1981, pp. 3-4). She recorded responses in writing as well on audio-tape.

Originally the researcher planned to train the research assistants to score the MEPS responses. However, only one was able to devote the time required to learn and practice the process. Therefore, the researcher scored the protocols, while the research assistant scored a random sample of 20, which were used for interrater reliability estimates. The researcher scored the audio-taped transcriptions before exposure to the results of the SCNF to avoid bias.

Use of the MEPS scoring procedures (Spivack et al., 1981) resulted in four scores: (a) means (M), i.e., the number of discrete steps that enabled the story protagonist to achieve the specified goal; (b) obstacles (O), the frequency with which any problem or difficulty in attaining the goal is mentioned; (c) time references (T), the frequency with which the subject recognizes the passage of time as a part of the problem-solving process; and (d) a combined raw score for means, obstacles, and time references (MOT).

Extant scores from the most recent administration of the age-appropriate Wechsler Intelligence Scale (1974, 1981) were obtained from school records. Of the 59

students enrolled, only one did not have current Wechsler scores at the time the study began.

Temporal stability of Wechsler Intelligence Scales (1974, 1981) has been demonstrated in studies with handicapped populations (Elliott, Piersel, Witt, Argulewicz, Gutkin, & Galvin, 1985). In a sample of 382 cases drawn from special education cases in three states, Elliott et al. (1985) found the stability coefficients for Verbal, Performance, and Full Scale IQs for the total sample over a three-year period to be .81, .78, and .85 respectively, which validated use in this study of Wechsler scores within a three-year period of administration.

The following statistical analyses were used to examine the research hypotheses. First, Pearson intercorrelations assessed the relationships among the scores from the social planning process measures: means-ends thinking (MOT), social schematic ability (PA), and knowledge of social conventions (C). Next, Pearson correlations and multiple regression analyses compared the rankings of the total combined social competence raw scores (SCNF:CRS) to the rankings of each set of social planning process scores (MOT, C, PA). The last set of analyses used t-tests and crosstabulations to focus on differences between high and low scorers on the social competence measure for each of the three social planning

process measures.

Additional procedures examined reliability, compiled summary statistics, and explored relationships uncovered in the previous procedures. Pearson correlations were used to assess other relationships: (a) the interrater reliability of the MEPS, (b) the internal consistency of the SCNF, (c) certain Descriptive and Substantive marker variables, and the social competence and means-ends thinking scores. Additional crosstabulations compared the SCNF high and low scorers on certain Descriptive and Substantive variables.

Limitations of the Study

1. Descriptive studies are subject to lack of control for internal validity. Error from this source is reduced if cohort differences are negligible (Baltes, Reese, & Nesselroade, 1977). Because this sample spans only the period of adolescence, cohort differences are minimized.

2. The students in the sample attended a private school, which limits generalizing the findings to samples of SLD students in similar settings whose characteristics are comparable to those described by the Descriptive and Substantive markers.

3. Research involving persons with learning disabilities requires addressing the thorny question of how specific learning disability is defined, an issue

critical to sample selection and generalization of findings. Of concern is the reality that despite twenty years of often heated debate, a definition that addresses the heterogeneity of learning disabilities to everyone's satisfaction has yet to be developed. Lack of such a definition has been cited as a problem in many studies of the learning disabled (Maheady & Sainato, 1986; Morrison, et al., 1985; Schumaker & Hazel, 1984; Serafica & Walsh-Hurley, 1986). The National Joint Committee on Learning Disabilities (NJCLD) began working on their definition in 1975, and in 1981 proposed one that has been approved by most member organizations (Abrams, 1987). One result of this failure to formulate an acceptable definition has been inconsistency in reporting the incidence in the population (Silver & Young, 1985). Because the field has not explicated a set of "class principles" which define learning disabilities, there is as yet no way "to determine whether a given individual represents an instance of the class `learning disabilities'" (Morrison et al., 1985, p. 5). Even though this limitation hampers all research done with this population, the sample in the present study has been described as specifically as possible using the UCLA marker variable system (Keogh et al., 1982).

4. There were few girls (n = 11) and all but two students were Caucasian in the accessible population, which limited the ability to generalize the findings based on these variables.

5. The expense of paying research assistants, the time involved to conduct and to score the interviews and the expense of their transcription limited the size of the sample.

6. Data were gathered from interviews and from rating procedures, not in a natural setting. The social planning process measures were verbal or visual representations and the social competence measure was a verbal representation of what adolescents think about hypothetical situations. Both of these limit generalization, because the researcher cannot clarify how data collected in an interview "represents the social behaviors that SLD individuals actually use in the environment" (Schumaker & Hazel, 1984, p. 424). However, examination of the statistical relationships among the social planning process measures and the perceived social competence measure will help validate them by relating social cognition to behavioral functioning.

7. This study was limited by the instruments and statistical procedures used and did not address variables other than those described.

Ethical Considerations

The William and Mary Human Subjects Committee and the administration of The New Community School approved this study. Parents of minors and students 18 and older granted written permission (see Appendix F for copies of consent forms). The terms of agreement included the following: (a) access to TNCS confidential records and use of data therein; (b) protection of confidentiality by use of a code in lieu of names on all data; (c) permission to administer the appropriate form of the Wechsler Intelligence Scales (1976, 1981) at no cost and only if one had not been administered within three years; (d) permission to complete the SCNF and MEPS; (e) willingness to complete the parent questionnaire; (f) access to the results of the study by placing a copy of the study in the TNCS library; and (g) permission to withdraw from the study without penalty. Confidentiality was protected by using randomly assigned numbers in lieu of names.

CHAPTER II

Review of Literature

Summary of Theoretical Rationale

Adolescents invest much of their time and energy developing self-understanding and interpersonal competence (M. Ford, 1982), both of which are important for their identity formation (Erikson, 1963). Multifaceted interpersonal or social competence includes development of social planning processes, such as means-ends thinking (Spivack et al., 1976) and social judgment ability (Kaufman, 1979). Social planning processes have been related empirically to social competence in both normal learning preadolescents and adolescents (M. Ford, 1982; Marsh et al., 1981; Pellegrini, 1985a) and in learning disabled adolescents (Silver & Young, 1985; Schneider & Yoshida, 1988). This study's primary purpose was to examine the relationship of SLD adolescents' social planning processes to their social competence.

M. Ford (1986) included social planning processes in his triarchic, living systems theory of social intelligence, which evolved from his investigations of an integrative conceptual framework for social competence (M. Ford, 1982; M. Ford et al., 1984; M. Ford & Thompson, 1985; M. Ford & Tisak, 1983). M. Ford derived his theory

from Sternberg's (1985) triarchic theory of human intelligence and from D. Ford's living systems theory, which was published in 1987. M. Ford's theory of social intelligence included three subtheories: (a) an outcome theory defining the social behavioral outcomes needed for adaptive social goal attainment, which is how he defines social competence; (b) a process theory defining the psychological mechanisms that may explain social functioning and therefore, may be available for intervention; and (c) a developmental theory defining the mechanisms which enable changes in effective social behavior.

The control processes, one of the three governing functions, are among the psychological processing mechanisms used to select or create behavioral plans relative to social goals. When the goal is transactional, such as solving an interpersonal problem, behavioral planning control processes are used. In the present study, these are called social planning processes.

Social planning may be accomplished by simply selecting a plan of action already developed and stored in memory. Often, however, effective goal accomplishment depends on adapting old plans or devising new ones. Such adaptation or development of plans uses means-ends thinking, which is the ability to specify step-by-step solutions to interpersonal problems. Means-ends thinking

is a frequently studied ICPS skill (Spivack et al., 1976). It is the cognitive process "most uniquely associated with the behavioral planning control process" and is an ICPS skill "most strongly related to effective behavior," especially in adolescence (M. Ford, 1986, p. 150).

Among the subtests of the Wechsler Intelligence Scales (Wechsler, 1974, 1981) linked by Kaufman's factor analysis (1979), two are conventionally described as measuring social judgment ability. The Comprehension subtest assesses knowledge of social conventions, and the Picture Arrangement subtest assesses the ability to plan and anticipate in a social context, herein called social schematic ability. The relationship of these social judgment ability measures to social competence has not been validated. Unlike means-ends thinking, which researchers have related to social competence, (M. Ford, 1982, 1986; Marsh et al., 1981; Pellegrini, 1985a) a computer search found no studies that related Kaufman's (1979) social judgment ability construct to social competence.

The Comprehension subtest entails reasoning about specific social goals, whereas the Picture Arrangement task requires ordering events to achieve a specified social goal. Because they related conceptually to means-ends thinking, both were included in this study to see if either is empirically related to means-ends thinking and

to see if each is related to social competence.

Means-ends Thinking: Empirical Relationship to Social Competence

Spivack, Shure, and Platt (1976) stimulated much of the research on the contributions of social planning processes to social competence (M. Ford, 1986). Their work evolved from that of D'Zurilla and Goldfried, who proposed that internal cognitive processes enable solving problems in a variety of unfamiliar situations (Silver, 1984). The promise of such a proposition is that training at the process level will generalize across a broad range of situations (Pellegrini, 1985b).

The taxonomy of interpersonal cognitive problem-solving skills (ICPS), "is assuming the status of an established construct in psychology" and "is emerging as a fruitful area for research" (Kelly cited in Spivack & Shure, 1985, p. 222). Spivack and Shure proposed that the social adjustment of youth "is largely determined by the capacity to think through social problems, specifically the ability: (a) to think of alternative ways of solving problems, (b) to know the likely response of another to certain solutions, and (c) to use means-ends problem-solving" (Shantz, 1983, p. 533).

Means-ends thinking and alternative thinking both are related to children's adjustment (Shantz, 1983) and to social competence (M. Ford, 1986; Pellegrini, 1985a). The

ICPS skill most central to mediating adjustment from middle childhood onward is means-ends thinking (M. Ford, 1984; Pellegrini, 1985a).

Spivack and Shure are not only developmental psychologists, but are also community psychologists. They have tried to show that social problem-solving skills are important to the development of normal mental health (Spivack & Shure, 1985). Therefore "their research has always been guided by applied concerns" (Rubin & Krasnor, 1986, p. 4), which has meant that outcome studies, not model building or test validation, have been the focus of their research.

Spivack and Shure wanted to develop programs to alleviate deficits in children's social problem-solving. Spivack's clinical experience with institutionalized, maladjusted adolescents led him to believe that their maladaptive behavior might reflect "the habit or deficit of not thinking through a problem situation before deciding what to do" (Spivack & Shure, 1985, p. 228).

His early research (Thompson, Spivack, & Levine, 1960; Spivack & Levine, 1963) led him to conclude that the maladaptive behavior of some youngsters with poor self-control and narrow temporal perspective "did not exhibit, even under neutral circumstances, means-ends thinking, that is, the sequence of steps . . . to achieve their goal, anticipation of the obstacles to overcome, and

appreciation that solving a problem takes time" (Spivack & Shure, 1985, p. 228). Like normal adolescents, the maladjusted ones were likely to think of transgressing, but unlike normal adolescents, the maladjusted group did not use thought processes to appropriately mediate their actions. Shure's and Spivack's study (1972) with emotionally disturbed and normal 9- to 12-year-olds replicated earlier findings. They then directed much of their research and the development of training programs to the problems of younger children.

Platt and other members of the research team (Platt & Spivack, 1973; Platt et al., 1974) continued to examine adolescents' means-ends thinking. Platt et al. (1974) compared the ICPS skills of adolescent psychiatric patients to those of normal high-school-aged controls. The groups did not differ in age, race or socioeconomic status. The only variable which differentiated the groups was IQ, which was statistically controlled and were found not to relate to the variables under consideration here.

Among the tasks used was a 1971 edition of the Means-Ends Problem-Solving Procedure (Platt & Spivack, 1975). Data analyses demonstrated that the patients obtained significantly lower scores on MEPS than did the controls. The MEPS scores could have been affected by motivation or by verbal ability. Therefore, they examined the frequency

of ineffective and irrelevant story elements. The patient group responded with significantly more ineffective or irrelevant means, while at the same time producing fewer problem-solving means.

Platt et al. (1974) concluded that the normal adolescents were better able to generate step-by-step methods to achieve interpersonal goals. Furthermore, when they examined the findings in the context of other studies, they found means-ends problem-solving consistently related to behavioral adjustment and was "of preeminent importance in human adjustment at all age levels" (p. 791).

> Performance on the social means-ends thinking task has differentiated less from better adjusted 10-year-olds [Larcen et al., 1972; Shure & Spivack, 1972a], adolescent heroin addicts from nonaddicts [Platt et al., 1973], disturbed adult psychiatric patients from appropriate controls [Platt & Spivack, 1972a, 1973], and to a lesser degree, from more socially competent psychiatric patients [Platt & Spivack, 1972b]. (Platt et al., 1974, p. 791)

Recent reviewers (Hopper & Kirschenbaum, 1985; Kendall, 1986; Kendall & Fischler, 1984; Rubin & Krasnor, 1986; Pellegrini, 1985a & b; Shantz, 1983) critiqued both Shure's and Spivack's measures and their research methods. Rubin and Krasnor (1986) were concerned because the development of each of the problem-solving skills was "not an `all-or-none' process" (p. 5). Sensitivity to some interpersonal problems may appear before strategies can be articulated. The sequence of stages also may not be

stable, and the problem-solving process "may be characterized by multiple, embedded interruptions and detours, and vague, difficult-to-model ideas [Flavell, 1976]" (Pellegrini, 1985b, p. 841).

Kendall and Fischler (1984, Kendall, 1986) criticized the broad definition of adjustment used for criterion groups. For example, in many studies "the inhibited and impulsive groups have been collapsed into an `aberrant' group" (p. 880). They emphasized the need in future studies to carefully specify criterion groups and to identify the specific childhood pathologies where problem-solving deficits are critical and for which problem-solving interventions would be the treatment of choice.

Means-ends thinking scores depended on the number of alternative strategies, which presumably represented how children approached problematic situations. The kinds of solutions generated, whether or not their spontaneous responses represented their repertoire of solutions, and whether either related to increasing age have not been the subject of much study (Hopper & Kirschenbaum, 1985; Shantz, 1983).

Pellegrini (1985a) noted the connection between responses and age. He found that scores declined with increasing age in his preadolescent sample. He questioned whether the trend was an artifact of the assessment procedure or whether the age results reflected the

beginnings of a transformation in means-ends thinking itself. Some researchers argued for the importance of "social scripts," habituated responses to familiar situations. Pellegrini (1985a) proposed that older children may edit out references to uncommon or unsuccessful solutions, resulting in lower or stable scores on such spontaneous measures as MEPS. In contrast to Pellegrini's findings, M. Ford (1982) found a significant developmental trend for age in his sample of older adolescents. The relationship of age to means-ends thinking needs additional examination.

Rubin and Krasnor (1986) raised concerns about the problem content of ICPS items, including those on the MEPS. They felt that the measures sampled too narrow a range of problems, that information about the significance of these problems to children was not provided, and that the degree to which these problem situations actually occur in natural social situations was not given.

Another major problem was the lack of ecological validity of the measures, which prohibited prediction of children's natural social problem-solving strategies from their responses (Kendall & Fischler, 1984; Pellegrini, 1985b; Rubin & Krasnor, 1986). Although evidence exists to indicate the role of ICPS skills in adjustment, no evidence exists in observed or actual problem-solving behavior. Rubin and Krasnor began validation studies in

1986 with elementary-aged subjects, because the results of recent research relating comparable measures "to peer or teacher ratings of children's social competence have been mixed [e.g., Asher & Renshaw, 1981; Butler, 1978; Ladd & Oden, 1979; Sharp, 1978]" (Rubin & Krasnor, 1986, pp. 8-9). The extent to which this is true, if at all, may be related to how competence and interpersonal problem-solving are measured.

Despite its weaknesses, the ICPS taxonomy remains the only one which addresses the social-cognitive problem-solving of adolescents.

Means-Ends Thinking: Empirical Relationship to Social Competence in Adolescents

M. Ford (1982) studied the relationship between social cognition and social competence to identify characteristics of socially competent adolescents. The conceptual representation of social information had been the focus of much of the research and only rarely had the question of how these conceptual systems guide behavior been raised. The cognitive governing functions which control, direct, and regulate behavior are "a central component of social competence" (M. Ford, 1982, p. 326). Of the 13 predictor variables M. Ford studied, means-ends thinking, which is a behavioral planning control process in his model, was one of the strongest predictors of social competence.

M. Ford (1982) defined social competence theoretically as "the attainment of relevant social goals in specified social contexts, using appropriate means and resulting in positive developmental outcomes" (p. 324). The social goal in that study, as it is in this one, was the ability to behave effectively in social situations involving salient relationships with peers, parents, and teachers.

His operational definition of social competence in that study is the measurement of social-behavioral effectiveness. The Social Competence Nomination Form (SCNF) was designed to obtain valid ratings by using multiple sources (self, peers, teachers), "because judgments of social competence from different individuals or groups may be systematically biased or based on selective data" (p. 324).

The SCNF asked students to nominate students who they thought could best handle six hypothetical social situations and then to rate themselves in each situation. Teachers rated students based on their perceptions of the students' ability to do the tasks. The situations were common ones faced by high school students, such as choosing someone as a double-dating companion and choosing someone to persuade teachers not to give homework over Christmas vacation.

Analysis of the ratings revealed significant intercorrelations among all measures with peer and teacher ratings showing the highest level of agreement. Means-ends thinking was one of the best predictors of social competence both in strength and consistency (M. Ford, 1982, p. 332). Older students scored significantly higher as well. In a factor analysis, means-ends thinking loaded on a "cognitive resourcefulness" factor, a finding which replicated earlier studies: Pellegrini, 1980; Spivack et al., 1976; Spivack & Shure, 1974. "Socially competent adolescents are more cognitively resourceful; that is they are better able to think of ways to address interpersonal problem situations and to construct coherent plans or strategies for resolving them" (M. Ford, 1982, p. 335).

M. Ford (1982) cited the heavy use of paper-and-pencil measures as a general weakness reflecting the lack of more sophisticated measures of social cognition and social competence. In the present study, M. Ford's measure was used despite this weakness, because it was designed to obtain multiple perspectives and the situations were those that adolescents might really experience.

In a later study of early and preadolescents, Pellegrini (1985a) examined similar dimensions of competence and cognition. The degree to which means-ends

problem-solving was related to sex, age, IQ, socioeconomic status, and academic as well as social competence in 100 fourth to seventh graders was investigated. To measure social competence, the children cast their classmates into a variety of negative and positive roles in a hypothetical play. Teachers rated behavioral competence as well. Means-ends thinking was measured with a modification of Shure and Spivack's (1972) version of the Means-Ends Problem-Solving Procedure.

Pellegrini (1985a) proposed that means-ends problem-solving ability would make an important contribution in accounting for variance in competence within this age group, above and beyond other traditionally powerful variables, such as sex, IQ, and social class.

Pellegrini found that MEPS scores declined with age, which he interpreted either as an artifact of the procedure or as the emergence of maturity in problem-solving behavior. He cited Langer's proposal that adult social behavior is more automatic and proceeds more according to overlearned social scripts. Pellegrini concluded that as children mature, they may "edit out" uncommon or unsuccessful means in their social problem-solving, resulting in declining or stable scores on measures like MEPS. He recommended additional research in this area.

Pellegrini concluded that mature reasoning about the social world and resourcefulness in planning solutions to hypothetical social problems are both salient characteristics of children who are competent in the school environment.

Limitations in Pellegrini's study included the use of instruments that relied on verbal expressive ability and also the limitations inherent in correlational analysis. Correlational studies do not provide definitive evidence of the actual processes that link means-ends thinking with dimensions of competence. Nevertheless, Pellegrini's findings provide further justification for the present investigation of the relationship between means-ends thinking and social competence.

Marsh et al. (1981) did an earlier study exploring the relationship between means-ends thinking and the interpersonal functioning of 68 male and female eighth-graders. They used a teacher rating scale and a self-rating scale to assess positive and negative interpersonal behavior.

The results showed a consistent pattern of relationships between social-cognitive and interpersonal functioning measures for both teacher and self-ratings. High scores on measures of social cognition correlated with high scores on measures of positive interpersonal functioning.

Marsh et al. (1981) concluded, however, that the relationships were complex and confounded by sex, rating source, and the measures used, and that their findings were based on few significant correlations. Of the 68 possible correlations of MEPS to the 17 self- and teacher-rated behavioral indices, which were analyzed by sex, only 13 were significant. Mean-ends thinking was one of these and was significantly related to interpersonal competence, indicating a positive effect on social behavior. The small sample size (68), the number of independent variables, and the few significant correlations between measures of social cognition and social competence limited the usefulness of this study.

Although tenuous links between means-ends thinking and social competence have been established, further study is needed of the social planning resources of socially competent individuals. The conflicting results from M. Ford's (1982) and Pellegrini's (1985) studies indicate that the developmental nature of means-ends thinking in adolescence has yet to be clarified. Also questions remain about whether means-ends thinking and social judgment ability, i.e., knowledge of social conventions and social schematic ability, are related cognitive processes and whether each is related to social competence.

Social Competence of Learning Disabled Adolescents

The effort to understand the social competence and the social status of the learning disabled is a recent phenomenon with 75% of all published articles appearing since 1982 (Gresham, 1987). Reviews of studies of SLD children's social skills confirmed that, compared to normal learning peers, some SLD children are less well liked and are more likely to be rejected. They participated less in school activities and continued to have social problems as adults (Bruck, 1986; Bryan & Bryan, 1983; Hazel & Schumaker, 1987; Maheady & Sainato, 1986; Perlmutter, 1986; Schumaker & Hazel, 1984; Serafica & Walsh-Hurley, 1986). Comparable experiences among the normal learning persons caused higher drop-out rates, juvenile delinquency, "bad conduct" discharges from the military and mental health problems in adulthood (Hazel & Schumaker, 1987). It is clear that the social problems of some SLD persons may be just as handicapping as their academic problems (Schumaker & Hazel, 1984).

In their review of studies (1984, 1987) on social skills and learning disabilities, Hazel and Schumaker defined social competence in terms conceptually similar to those of M. Ford.

> A socially competent person, therefore, is one who can perform social skills in a socially acceptable manner. Hazel, Sherman, Schumaker, and Sheldon [1985] specified that in order for a person to be considered socially competent he/she must:
>
> 1. Discriminate situations in which social behavior is appropriate;
> 2. Choose appropriate skills to be used in a given situation;
> 3. Perform those skills fluently in appropriate combinations according to current social mores;
> 4. Accurately perceive the other person's verbal and nonverbal cues; and
> 5. Flexibly adjust to those cues [pp. 228-230]. (Hazel & Schumaker, 1987, pp. 3-4)

Such a clear definition is a rarity in the literature on the social competence of the learning disabled. Most researchers have not defined constructs clearly and have tended to use terms loosely (Serafica & Walsh-Hurley, 1986).

For instance, Hoyle and Serafica (1984) examined self-perceived social competence and peer popularity. From their findings, they inferred that social competence was the ability to perceive one's own social status, a simplistic and unidimensional definition. Valid social behavior or social competence results not only in the ability to self-perceive social status and self-esteem, but also in the approval of peers, significant others, and authority figures (Gresham, 1987). Social competence implies "social validity [Wolf, 1978], society's judgment that something is acceptable or `well done'" (Hazel & Schumaker, 1987, p. 3).

Defining social competence operationally but not theoretically has also been a problem in some studies (Hoyle & Serafica, 1984; McConaughy, 1986; McConaughy & Ritter, 1986). Often one learns only that SLD subjects were less socially competent than their normal learning peers on whatever measure has been used for the operational definition. Reasons for this may be that a universally accepted definition of social competence is still evolving and that in the SLD literature, a clear definition has been specified only recently (Hazel & Schumaker, 1987).

For example, McConaughy (1986) and McConaughy with Ritter (1986) compared the behavior problems and social competence of SLD boys and normal learning boys. The titles and the abstracts of these studies led the reader to expect that social competence was assigned equal importance with behavioral problems. Social competence, however, was represented by a 20 item scale, whereas behavior problems were represented by a 118 item scale. The focus of the data analyses and discussion was behavior problems and significant group differences in social competence were discussed. "Parents' ratings of their SLD adolescents on the Child Behavior Checklist produced significantly lower scores on all of the social competence scales" (McConaughy, 1986, p. 104). The scores were so poor that they fell within the range associated with

referrals to child guidance clinics.

These studies (Hoyle & Serafica, 1984; McConaughy, 1986; McConaughy & Ritter, 1986) supported the hypothesis that SLD students across a wide age span are less socially competent than normal learning students. Additional research is needed that not only compares socially incompetent SLD youth to comparably socially incompetent normal learning youth, but also examines individual differences in social competence and the causes of such differences among the learning disabled (Hazel & Schumaker, 1987).

Social status has been the most widely researched and reviewed criterion for judging the social competence of SLD youth (Bruck, 1986; Dudley-Marling & Edmiaston, 1985; Hazel & Schumaker, 1987; Maheady & Sainato, 1986; Perlmutter, 1986; Schumaker & Hazel, 1984). Many researchers did group comparisons with little or no emphasis on within-group differences. Dudley-Marling and Edmiaston (1985) reviewed all published research since 1972 "to ascertain whether all or most LD students are held in relatively low esteem or whether, as a group, LD students are merely at greater risk for low social status" (p. 109). Their findings concurred with those of Bruck (1986) and Perlmutter (1986) that "as a group, LD children and adolescents tend to enjoy relatively low social status among their teachers, peers, and parents" (p. 201).

Maheady and Sainato (1986) agreed but emphasized that "there is no support for the assumption that all LD students experience interpersonal problems" (p. 392). Maheady and Sainato (1986) go on to recommend that future researchers examine factors which contribute to differences in social status.

Dudley-Marling and Edmiaston (1985) identified only three studies in which social status differences were examined closely (Bryan, 1974; Perlmutter, Crocker, Cordray, & Garstecki, 1983; Siperstein, Bopp, & Bak, 1978). Both the degree to which low or high status was common among SLD youth and the determinants of the differences in their social status were investigated.

Bryan (1974) found that after matching subjects for sex, race, and classroom, that the SLD children consistently received fewer positive and more negative nominations from their classmates. Group-by-race and group-by-sex interactions indicated that white SLD children or female SLD children were not accepted but were rejected by their classmates. The interpretation of these interactions as significant has been questioned by Dudley-Marling and Edmiaston (1985), because no significant main effects for sex were obtained. Of equal importance to the group comparison data was that few members of either group (15% or less of the SLD group and 10% or less of the control group) were nominated for either social attraction

or social rejection.

Siperstein et al. (1978) looked at degree of acceptance or rejection. The SLD children were no more likely to be chosen by no one as they were to be "liked best" than their peers. Also, they "were not overly represented among the social isolates" (p. 49). About one-third of the SLD students received positive nominations by over one-third of their classmates.

Similarly, Perlmutter et al. (1983) found that of 28 SLD high school students, rated by teachers and peers, 21% were rated in the upper quartile, whereas 32% were rated in the negative range. The popularity ratings of the SLD adolescents may have been affected by enrollment in low ability mainstream classes, which raises the question of whether their peer acceptance would be the same among SLD classmates alone and among the full spectrum of high school students.

In a study published since Dudley-Marling's and Edmiaston's (1985) review, Sabornie and Kauffman (1986) proposed no significant differences in social acceptance between SLD and normal learning high school students on several dimensions: peer popularity, familiarity (how well they were known by regular classmates), and ratings based on sex and special education classification. They used a rating scale sociometric device because of its "superior test-retest reliability" (Sabornie & Kauffman, 1986,

p. 57). Hazel and Schumaker (1987) questioned using sociometric devices with adolescents because "they are insensitive to change in children above the ages of 9 - 10 years [Oden & Asher, 1977]" (p. 18).

Sabornie and Kauffman (1986) found that the groups did not differ significantly on any dimension examined. One factor which may have affected their findings was the treatment of familiarity as a variable. "Unknown" ratings were not included in a subject's sociometric status, because "a response indicating that a student is unfamiliar with a classmate to be judged is neither positive nor negative" (Sabornie & Kauffman, 1986, p. 55). Similar to the Perlmutter et al. (1983) findings, almost one half of the SLD students scored at or above the median score of the normal learning sample. SLD students's ratings of fellow SLD students were examined to see if they differed from normal learning students' ratings of the same SLD students. The SLD students reported a significantly greater liking for their SLD peers.

Together these studies support the conclusion that not all SLD students are rejected by peers, parents, and teachers. Some had low status, whereas others were among the most well liked. The factors which discriminated the well-regarded from the not-so-well-regarded await further elucidation.

Recent research and reviews focused more on the determinants of social status (Perlmutter, 1986). When they looked at "social decoding ability" (Perlmutter, 1986, pp. 349 - 350), Perlmutter et al. (1983) found that well-liked SLD subjects were able to assume the perspective of their peers and sense how well liked they were. Perlmutter et al. inferred that the well-liked students were better able to read social cues and to choose suitable social behaviors. Ratings of personality characteristics indicated that both "well-liked and not-as-well-liked LD subjects were rated as being equally aggressive and disruptive, and as exercising equal influence over others within the classroom environment" (p. 28). The popular group, however, was rated by classmates as more withdrawn and rated by teachers as less anxious.

Axelrod (1982) and Pearl and Cosden (1982) "each found unmistakable evidence that this group of [SLD] teenagers is less able to properly decode that which is presumed necessary for successful peer relationships" (Perlmutter, 1986, p. 351). Axelrod (1982) examined the ability of SLD and normal learning adolescents to perceive and understand nonverbal social cues. On standardized tests measuring ability to identify pictured emotional responses and measuring interpersonal problem-solving abilities using cartoon sequences, SLD students

interpreted pictured social cues more inaccurately. Differences in grade level and sex were not significant.

Using vignettes from soap operas, Pearl and Cosden (1982) compared adolescents' abilities to interpret situations in which subtle social and emotional relationships were depicted. "The actual feelings and intentions of the characters were often indicated only through indirect or subtle facial, behavioral, or verbal cues" (p. 372). After controlling for IQ and grade, as well as for familiarity with soap opera characters, they found that the SLD group was significantly less accurate than the normal learning group. When their answers were compared, the normal learning adolescents were correct more often than their SLD peers on 16 of 20 items.

Sabornie and Kauffman (1986) found a nonsignificant negative correlation between SLD subjects' IQs and their sociometric status. They recommended further exploration of this relationship, because "the results of other research (e.g., Sabornie & Kauffman, 1985) have shown that IQ was significantly negatively correlated with sociometric status of emotionally disturbed adolescents" (p. 59).

In their study of the relationship of ICPS skills to behavioral adjustment and peer status, Silver and Young (1985) found that those younger SLD adolescents, who were less likely to have been retained, and those with higher

IQ and ICPS scores were more likely to be rated by teachers as behaving more appropriately with peers.

In summary, these studies (Axelrod, 1982; Pearl & Cosden, 1982; Perlmutter et al., 1983; Sabornie & Kauffman, 1986; Silver & Young, 1985) demonstrated that determinants of social status include perception, comprehension, and ordering of the cues in a social situation and interpersonal problem solving. Although some SLD adolescents were more socially competent than others, determinants of differences in social competence need further exploration. According to Hazel and Schumaker (1987), "research is needed to determine how cognitive events are related to social performance" (p. 50) and the nature of those cognitive processes. Whether deficits in social planning processes are related to differences in perceived social competence was the primary focus of the present study.

Means-Ends Thinking: Empirical Relationship to Social Competence in SLD Adolescents

Hazel and Schumaker (1984, 1987) identified four cognitive social skills which influence performance and which merit additional research: (a) understanding another's perspective, (b) perceiving relevant social cues, (c) cognitively discriminating among situationally appropriate skills, and (d) using problem-solving

strategies to predict and to evaluate consequences of choosing the appropriate skill variation. The last of these skills is conceptually similar to M. Ford's (1982, 1986) behavioral planning control processes, which are called social planning processes in the present study.

Hazel and Schumaker (1987) stated that SLD youth are less capable than their normal learning peers at solving social problems and predicting the consequences of their social decisions. Several researchers found that SLD adolescents were less adept than normal learning peers at tasks involving social comprehension. For example, Axelrod (1982) and Pearl and Cosden (1982) found that SLD adolescents were less able to discriminate and interpret social cues than normal learning adolescents.

The results of two other studies (Schumaker, Hazel, Sherman, & Sheldon, 1982; Romano & Bellack, 1983) showed differences in social problem-solving ability between SLD and normal learning adolescents. In the Schumaker et al. (1982) study on the social skill performances of SLD, normal learning, and delinquent adolescents, the normal learning youths performed significantly better on seven of eight skills individually tested in role-playing situations. The normal learning group scored significantly higher on the problem-solving task than the SLD group, who scored higher than the delinquent group. Romano's and Bellack's (1983) use of an author-designed,

unstandardized measure limited this study's usefulness.

Means-ends thinking and its relationship to the behavioral competence of SLD adolescents was examined in two studies (Silver & Young, 1985; Schneider & Yoshida, 1988). In both, SLD adolescents were significantly less proficient at means-ends thinking than normal learning peers.

Silver and Young (1985) looked at three groups of Caucasian, eighth grade males: 44 with learning disabilities, 22 normal-achieving peers, and 22 low-achieving peers. Their hypotheses were that (a) the SLD adolescents would be less competent in their interpersonal problem-solving abilities, including means-ends thinking, than their normal-achieving peers and that (b) the deficits would be related to poor behavioral adjustment and to low peer status.

When the results of the means-ends thinking measure (Platt & Spivack, 1975) were examined using a one-way analysis of variance of the three group means, the normal-achieving group scored significantly higher than the SLD group, which in turn, scored higher than the low-achieving group. Post hoc comparisons supported significant differences between the scores of the normal-achieving and low-achieving groups and between the normal-achieving and SLD groups, but not between the low-achieving and SLD groups. MEPS scores correlated significantly with teacher

ratings of behavioral competence. Because of differences in IQ, an analysis of covariance was done to parcel out the effects of IQ. Afterwards, no significant differences remained. The low-achieving group had a significantly lower mean IQ than the SLD group but demonstrated about the same level of means-ends thinking ability, "which suggests that while intelligence many be an important component of social problem-solving ability, it is not an entirely adequate explanation for observed differences in levels of functioning" (Silver & Young, 1985, p. 216).

Schneider and Yoshida (1988) looked at two groups of 30 seventh and eighth grade, mainstreamed SLD and normal learning students matched according to sex, socioeconomic level, and IQ. They hypothesized that the SLD group would be less proficient than their normal learning peers in ICPS skills and would have more social behavioral problems. They also hoped to identify which ICPS skills were related to behavioral adjustment in school.

They found that the SLD group scored significantly lower than the normal learning group on four of the five ICPS measures, including the means-ends thinking measure. These differences apparently were not related to IQ nor to the verbal demands of the task, because the mean IQs of the SLD and normal learning groups differed by only five points.

Schneider and Yoshida (1988) found no significant difference between the normal learning and SLD groups on five of six scales measuring social behavioral problems. Only 10 of a possible 70 correlations between ICPS skills and teacher ratings of behavior were significant. They questioned whether mastering these skills as now conceptualized is a necessary condition for classroom adjustment of mainstreamed SLD students.

Before conclusions are made from these studies, several issues need to be addressed. First, because the construct validity of ICPS measures is still being established, generalizing findings to school populations may not be warranted. Secondly, the SLD sample was made up of mainstreamed SLD adolescents. More severely impaired adolescents may have been viewed differently by regular classroom teachers. In addition, because there is no consensus on the definition of SLD, determining whether the individuals comprising the samples are representative of the class "learning disabilities" (Morrison et al., 1985). Lastly, other measures of classroom adjustment might yield different results.

As in studies discussed earlier, the SLD group in Silver's and Young's (1985) study was rated lower in peer status and behavioral adjustment. Conditions imposed by the schools may have affected ratings of peer status. Silver and Young also found that parent- and self-ratings

of behavior at home and with peers were similar, although self- and teacher-ratings of school behavior were lower for SLDs and low-achievers than for normal-achievers. Because they were interested in the determinants of these differences, and so they used hierarchical grouping analysis to identify subgroups within the population using scores from the behavioral ratings. Those SLD students with the best ratings were (a) younger by at least eight months, which the researchers speculated occurred because this group was less likely to have experienced the negative effects of retention, (b) had higher scores on all measures of social problem solving, and (c) had slightly higher IQ scores than the mean IQ.

Silver and Young (1985) concluded that although their study offered support for the hypothesis that ICPS skills have an important effect on the social competence of SLD adolescents, further research with SLD adolescents and adults was needed with the "hope that characteristics of LD adolescents who are most likely to be at risk in terms of interpersonal skill deficits can be identified, and their needs be specifically addressed" (p. 220-21).

Defining Learning Disabilities: The Need for Marker Variables

Research in the field of learning disabilities has been conducted for at least twenty years, and as yet a definition of learning disabilities that addresses the

heterogeneity and specificity of learning disabilities to everyone's satisfaction has not been developed. Lack of such a definition has been cited as a problem in many studies of the learning disabled (Maheady & Sainato, 1986; Morrison et al., 1985; Schumaker & Hazel, 1984; Serafica and Walsh-Hurley, 1986).

One result of the failure to develop a definition has been inconsistency in reporting the incidence in the population (Silver & Young, 1985). Because a set of "class principles" defining learning disabilities has not been explicated, there is as yet no way to decide whether or not a person represents an instance of the class "learning disabilities" (Morrison et al., 1985).

Both Keogh (1986) and Morrison et al. (1985) have recommended defining SLD samples specifically and precisely, and Morrison et al. (1985) suggested the UCLA marker system as an effective means to do so.

> (S)ample specification is imperative in research areas that lack conceptual clarity and where definitions are imprecise. The learning-disabilities field qualifies on all counts, thus, is a logical research area for routine use of markers to describe samples. (Keogh, 1986, p. 86)

Keogh et al. (1982) developed the UCLA system of marker variables in a three-phase project funded by the then Bureau of Education for the Handicapped. Phase One included a comprehensive review of over 4600 citations in the learning-disabilities literature for the years 1970 -

1977. Of those citations, only about 25% or 1400 proved to be data based. Of the data-based citations, they chose to review 408, selected by age of subject and discipline of investigator. The review underscored the need for more systematic description, because the sample descriptions were "on the whole fragmented, limited, and incomplete" (Keogh, 1986, p. 87). For example, investigators reported sex, socioeconomic status, and race or ethnicity in only about 30% of the studies.

In Phase Two, Keogh et al. examined the feasibility of a marker system and the adequacy of the proposed markers. They next developed and piloted a marker reporting form. In Phase Three, 61 investigators field tested the system. These efforts resulted in development of the Marker Guide (Keogh et al., 1982).

The Marker Guide includes four marker categories. Descriptive Markers depict general sample characteristics, those not specific to learning disabled subjects. They provide demographic and background information about subjects: "number of subjects by sex, chronological age, grade level, locale, race/ethnicity, source of subjects, socioeconomic status, language, educational history, educational placement, and physical health status" (Keogh, 1986, p. 88).

Substantive Markers include summary values for general intellectual ability, academic achievement, and

behavioral/emotional adjustment. These markers provided information more specific to learning-disabled samples, including the data for ability-achievment discrepancy analyses and for the exclusion of mental retardation and severe emotional disturbance.

Topical Markers include the variables being investigated. In the present study, included are the scores from the measures of social planning processes and social competence.

Background Markers provide a context for interpreting the findings and included year of study, geographic location, and exclusionary criteria.

The UCLA markers served as the basis for the markers used in the present study (see Appendix D). Use of this system allowed comparison of these SLD subjects to those in other studies and identified important differences in subjects.

Summary

Social competence is complex and requires the development of cognitive resources including social planning processes, such as means-ends thinking (Spivack et al., 1976) and social judgment ability (Kaufman, 1979), i.e., knowledge of social conventions and social schematic ability. These social planning processes are an integral part of the governing subsystem in M. Ford's (1986) triarchic, living systems model of social intelligence.

Research has demonstrated that social planning processes are related to social competence (e.g., M. Ford, 1982; Marsh et al., 1981; Pellegrini, 1985a). These processes are especially important during adolescence (M. Ford, 1982), when the growth of social competence is critical to the development of ego identity (Erikson, 1963).

Studies have supported the hypothesis that SLD youth are less socially competent than normal learning youth (e.g., Hoyle & Serafica, 1984; McConaughy, 1986; McConaughy & Ritter, 1986). Reviewers concluded that although as a group, SLD youth may be perceived as less socially competent by peers, parents, and teachers than normal learning youth, not all SLD youth are perceived as less socially competent (Dudley-Marling & Edmiaston, 1985; Maheady & Sainato, 1986). Studies show that although some SLD youth have low social status, others are among the most well liked (Bryan, 1974; Perlmutter et al., 1983; Siperstein et al., 1978; Sabornie & Kauffman, 1986).

Factors discriminating well-liked SLD students from the not-as-well-liked have not been researched extensively (Maheady & Sainato, 1986). Determinants of SLD adolescents' social status uncovered so far include understanding and organizing the cues in social situations and interpersonal problem solving (Axelrod, 1982; Pearl & Cosden, 1982; Perlmutter et al., 1983; Sabornie &

Kauffman, 1986; Silver & Young, 1985). Hazel and Schumaker (1987) cited the need for further study of the nature of cognitive social skills, including social problem solving, and their relationship to social performance. Discovering to what extent the social planning processes previously investigated are determinants of the perceived social competence of SLD adolescents was the primary goal of the present study.

Means-ends thinking (Spivack et al., 1976) and two dimensions of social judgment ability (Kaufman, 1979), i.e., knowledge of social conventions and social schematic ability, were the social planning processes examined in the present study. The major research on the contributions of means-ends thinking to social competence was done by a team led by Platt (Platt & Spivack, 1973; Platt et al., 1974), who with Shure and Spivack (1976) developed a taxonomy of interpersonal cognitive problem-solving skills.

Means-ends thinking, the skill considered to be most central to mediating adjustment from middle childhood onward (M. Ford, 1984; Pellegrini, 1985a), was found to relate to children's adjustment (Shantz, 1983) and to social competence (M. Ford, 1984; Pellegrini, 1985a). Studies by M. Ford (1982), Marsh et al. (1981), and Pellegrini (1985a) demonstrated the significance of the relationship between social planning processes and social

competence in normal learning youth. Silver and Young (1985) and Schneider and Yoshida (1988) found that SLD youth were less proficient in means-ends thinking than normal learning youth and found tenuous links between means-ends thinking and behavioral competence and peer status.

The present study examined the relationship of social planning processes, in particular means-ends thinking, knowledge of social conventions, and social schematic ability, to the perceived social competence of a sample of SLD adolescents, who were described using the UCLA system of merker variables (see Apendix D).

The following questions were addressed: (1) Are the social planning processes examined here related to each other? (2) Are the social planning processes related to social competence? (3) Are these social planning processes determinants of differences in the perceived social competence of SLD adolescents?

CHAPTER III

Methodology

Population and Sample

The experimentally accessible population consisted of SLD adolescents who met the Virginia Department of Education's definition of Specific Learning Disability and attended middle schools and high schools in central Virginia.

To assess the social competence of SLD students as perceived by SLD peers, a homogeneous sample was chosen. The sample (N = 59) consisted of students enrolled at The New Community School (TNCS) in Richmond, Virginia, which is certified by the Virginia Board of Education to operate as a school for adolescents with Specific Learning Disabilities. TNCS's admissions criteria (Appendix C) include average to above average intelligence, diagnosis of Specific Learning Disability, and absence of significant or primary emotional-motivational difficulty that would prevent learning or disrupt the educational program of the school. These SLD adolescents could judge each other's social competence independent of the influence of normal learning peers and had the opportunity to participate in all aspects of school social life.

All students enrolled at the time the study began agreed to participate. Randomly assigned numbers in lieu of names protected their confidentiality on all instruments.

The UCLA system of markers (Keogh et al., 1982) was used to describe the sample using data gleaned from school records, a parent questionnaire (Appendix E) and the measures of social planning ability and social competence. Keogh (1986) and Morrison et al. (1985) recommended defining SLD samples specifically and precisely, and Morrison et al. (1985) cited the UCLA system as an effective system to do so.

The present study used four of the UCLA marker categories (see Appendix D). Descriptive Markers depicted general sample characteristics, those not specific to learning disabled subjects. They provided demographic and background information about subjects: "number of subjects by sex, chronological age, grade level, locale, race/ethnicity, source of subjects, socioeconomic status, language, educational history, educational placement, and physical health status" (Keogh, 1986, p. 88). Substantive Markers included summary values for general intellectual ability, academic achievement, and behavioral/emotional adjustment. These markers provided information more specific to learning-disabled samples, including the data for ability-achievement discrepancy analyses and for the exclusion of mental retardation and severe emotional

disturbance, exclusionary criteria addressed in the Virginia definition of Specific Learning DisabilitY. Topical Markers included the variables investigated and were represented by the scores from the measures of social planning processes and social competence. Background Markers provided a context for interpreting the findings and included year of study, geographic location, and exclusionary criteria.

Procedures

Permission to Participate

Parents and those students who were 18 at the beginning of the study received consent forms and a letter explaining the study (Appendix F). Everyone approached agreed to participate. Results from the measures of social competence and social planning processes will be released to the school only if the parents or the subject has signed a release.

Faculty cooperation

Faculty attended a workshop led by the researcher who explained the theory and design of the study. They will also attend a workshop to review the findings.

Sample Description

The researcher and an assistant gathered data from school records and from the parent questionnaire and compiled summary statistics for the following Descriptive, Substantive, General Background, and Topical Markers.

Descriptive Markers. "Descriptive Markers contain information which is common to all human subject research: demographics, language, education, and health" (Keogh et al., 1982, p. 82). In the present study, demographic markers included the following: (a) sex; (b) chronological age in months as of May 31, 1988; (c) grade level (7 - 12); (d) locale of residence, i.e., the percent from rural, small town, suburban, and urban communities; (e) race/ethnicity, i.e., the percent of Asian American, Black, Caucasian, Hispanic, North American Indian, or of other race or ethnic origin; (f) sample source; (g) socioeconomic (SES) status, i.e., the percent from upper, middle, and lower income groups based on school administration's data. The language marker indicated the primary language used in the home, i.e., the percent in English-speaking, bilingual, and non-English-speaking homes. The following markers represented the sample's educational history: (a) the percent who repeated grade levels, (b) the percent in age-appropriate grade, (c) number of grades repeated, (d) number of schools attended, (e) the percent never attending public schools, (f) the percent eligible for SLD special education, (g) years eligible for special education, (h) years enrolled in private SLD schools, and (i) the percent classified by school division with handicapping conditions in addition to SLD, i.e., visually or hearing impaired, orthopedically

impaired, multi-handicapped, severely emotionally disturbed, and speech/language impaired. Other educational markers were the sample's present educational placement and the number of years they had attended The New Community School.

Physical and health status markers included these: (a) the percent supposed to wear glasses; (b) the percent medically diagnosed as neurologically impaired; (c) the percent medically diagnosed with chronic illness, e.g. allergies, asthma, kidney disease; (d) the percent medically diagnosed with attention-deficit disorder including the percent of those with hyperactivity and the percent of those currently on medication.

Substantive Markers. "Substantive Markers are closely tied to most definitions of LD. They include intellectual ability, educational achievement, behavioral and emotional adjustment" (Keogh et al., 1982, p. 84). Intellectual ability markers included (a) the intellectual estimate, the sample percent with FSIQs within the average range (+ 1 to - 1 SD), below the average range, and above the average range; (b) techniques used to determine intellectual ability; (c) by whom intellectual ability was assessed; (d) time of assessment; (e) summary values for intellectual ability including mean, standard deviation, range for all scores: Full Scale IQs, Verbal IQs, Performance IQs, and subtest scores of the Wechsler

Intelligence Scales (Wechsler, 1974, 1981).

Reading, arithmetic, and spelling achievement markers included (a) the achievement estimate: the sample percent in the average, above average, and below average ranges; (b) by whom achievement was assessed; (c) time of assessment; and (d) summary values: mean, standard deviation, and range of standard scores for each measure.

The following techniques were used to assess achievement. Four measures assessed reading achievement: (a) Wide Range Achievement Test - Revised (WRAT-R) Level II, Reading subtest (Jastak & Wilkinson, 1984); (b) Gray Oral Reading Test - Revised (GORT) (Weiderholt & Bryant, 1986); (c) Iowa Silent Reading Tests (IOWA), Levels 1 and 2 (Farr, 1973); and the (d) Diagnostic Spelling Potential Test (DSPT), Word Recognition subtest (Arena, 1981). Three measures examined arithmetic achievement: (a) Wide Range Achievement Test - Revised (WRAT-R) Level II, Arithmetic subtest (Jastak & Wilkinson, 1984); (b) Stanford Diagnostic Math Test (SDMT), Blue Level (Beatty, Madden, Gardner, & Karlsen, 1976), and KeyMath Diagnostic Arithmetic Test (KM) (Connolly, Nachtman, & Pritchett, 1976). Two measures assessed spelling achievement: (a) Wide Range Achievement Test - Revised (WRAT-R) Level II, Spelling subtest (Jastak & Wilkinson, 1984) and (b) Diagnostic Spelling Potential Test (DSPT), Spelling subtest (Arena, 1981).

The following behavioral and emotional adjustment markers were used: (a) the percent referred for counseling or psychotherapy during the current school year, (b) the percent currently involved in counseling or psychotherapy, (c) the techniques used to determine behavioral and emotional adjustment, (d) by whom behavioral and emotional adjustment was assessed, and (e) the time of assessment.

Background Markers. General Background Markers identify study-relevant information (Keogh et al., 1982) and for this study, included the time for the data collection and the location where the study was conducted.

Topical Markers. The variables under investigation were the Topical Markers. Summary values reported included mean, standard deviation, and range. Social competence was represented by the combined raw score of teacher and peer nominations and of self-ratings from the Social Competence Nomination Form (M. Ford, 1982). Means-ends thinking was measured by the total means-ends score (MOT) from the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (MEPS) (Spivack et al., 1981). Knowledge of social conventions was measured by the scaled score (C) from the Comprehension subtest of the Wechsler Intelligence Scales (Wechsler, 1974, 1981). Social schematic ability was measured by the scaled score (PA) from the Picture Arrangement subtest of the Wechsler Intelligence Scales (Wechsler, 1974, 1981).

Administration of the Social Competence Measure

The Social Competence Nomination Form (SCNF) (Appendix A) (M. Ford, 1982) contains six hypothetical social situations and measures peer, teacher and self-perceptions of social competence. The researcher and a research assistant administered the SCNF to the 59 TNCS seventh through twelfth grade students in grade level groups of about 20. The students associate most frequently with students in their own grade level group (7/8, 9/10, 11/12). The school is small, and the students know each other from shared activities. Therefore, peers were nominated for each grade level group and for the entire school.

The researcher altered the SCNF format to meet the needs of SLD students. To avoid difficulty with spelling and with the association of names and faces, the researcher designed a photo booklet, organized by grade with each photo labelled with the student's name. Each student had a photo booklet. (This booklet is not in the appendixes in order to protect the confidentiality of participants.) She next designed a second booklet with each situation placed on a separate page with clearly marked places for responses (see Appendix A).

To avoid reading problems, the researcher read the directions (see Appendix A) and each situation aloud, while the research assistant made sure that directions

were being followed and names written in the correct places. If writing was not readable, the assistant asked students to tell her the names and she recorded them. The situations could not be presented in random order, because the researcher read them aloud to the whole group.

Each student named three peers from his or her grade level group and three peers from the entire school for each of the six hypothetical SCNF social situations for a total of 36 peer nominations (3 x 6 + 3 x 6 = 36). Next, each rated his or her own effectiveness in each situation (score of 1 to 5 x 6 = score range of 6 to 30).

At a faculty meeting, each faculty member was given a photo booklet and a situation booklet formatted for their responses (see Appendix A). They read the situations and nominated three students from each grade level they taught and three from the whole school for each of the SCNF situations, for a total of between 26 and 126 nominations depending on how many grade levels each taught.

A research assistant counted nominations and self-ratings for each student. She derived a summary raw score by adding scores from the peer- and teacher- nominations and the self-ratings. Pearson correlations assessed the internal consistency reliability for the scores. Extreme groups (n = 15) of high and low scorers were identified based on the total SCNF combined raw scores.

Administration of Social Planning Process Measures

Means-ends thinking measure. Concurrently, research assistants administered the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (MEPS) (Spivack et al., 1981) (Appendix B) to each student. Educators familiar with learning disabilities were trained by the researcher to administer the MEPS. They understood the nature of the study but had no access to student data.

Spivack et al. (1981) provide no specific training procedures for examiners who will administer and score the MEPS. However, for a year prior to the present study, the researcher used the MEPS in evaluations of adolescents with learning problems which provided clinical experience for training examiners and scorers.

For this study, examiners studied the MEPS manual and practiced administering the MEPS until they demonstrated procedural mastery. They were required to know the items and the instructions. They were required to administer it at least three times, once while being observed by the researcher.

Each story root presented an interpersonal dilemma and its resolution. The student's task was to imagine and tell the events which led to that resolution. The sex of the protagonist was varied to match the sex of the subject.

Spivack et al. (1981) recommended using at least three of the seven story roots to obtain minimum reliability. The researcher chose four story roots involving peer relationships: (a) meeting a person of the opposite sex and developing a relationship, (b) overcoming loneliness after moving to a new neighborhood, (c) managing avoidance by peers, and (d) managing a peer's verbal aggression.

A research assistant read the directions on the test booklet cover and each story root aloud while the students followed a copy printed in enlarged print. The instructions were repeated before succeeding stories only when it was obvious that the student misunderstood them (Platt & Spivack, 1975). The research assistant emphasized that the student was to tell a "real good story" (Spivack et al., 1981, p. 3).

She read each story root aloud once. Because these SLD students may have auditory processing problems, she asked each to repeat the key words which ended the story to ensure content understanding (Spivack et al., 1981). She reread the story until the student stated an understanding of the ending. This direction was printed on the examiner's test booklet.

The research assistant probed for responses only if the student began "by listing discrete alternate solutions" (Spivack et al., 1981, p. 3). If this

occurred, she prompted the student to tell a story, just like he or she was "watching a movie--everything that happens" from the time . . . (here she filled the beginning of the story) . . . to the time . . . (here she filled in the end of the story). (Spivack et al., 1981, pp. 3-4). This prompt, which was not on the original form, was printed on the examiner's test booklet (see Appendix B).

Spivack et al. (1981) advised that it is "preferable to administer the MEPS individually with the subject telling the story" (p. 3) and the examiner recording it verbatim. In the present study, a research assistant recorded responses in verbatim in writing and also audio-taped them. She did not condense the written responses in case she was not the person to score them (Platt & Spivack, 1975). Transcriptions were made from the audio-tapes. Usually the audio-tapes were transcribed by the same research assistant who administered the MEPS.

In an effort to avoid researcher bias, the researcher scored the audio-taped transcriptions before exposure to other data about the students. Originally the researcher planned to train research assistants to score the MEPS responses. However, only one was able to devote the time required to learn and to practice the process. She practiced scoring protocols not included in the interrater sample until she demonstrated understanding of the process

and consistency in applying the scoring principles. As a result, the researcher scored the protocols, while the research assistant scored the random sample (n = 20) used for interrater reliability estimates. Both the researcher and assistant scored the audio-taped transcriptions before seeing the social competence nominations or other data related to the study.

Cronbach's alpha was used to compute internal reliability on all scores. Pearson correlations compared the scores on the two sets of protocols for interrater reliability. The acceptable level of reliability was .80, "the conventional criterion for adequate assessment in individual differences research" (Waters & Tinsley, 1985, p. 487).

Social judgment: knowledge of social conventions and social schematic ability. School records supplied extant scores from the most recent administration of the age-appropriate Wechsler Intelligence Scale (Wechsler, 1974, 1981). The WISC-R or WAIS-R had been administered within three years of the date the study began.

The scaled score from the Comprehension subtest was used to represent knowledge of social conventions, and the scaled score from the Picture Arrangement subtest was used to represent social schematic ability.

The temporal stability of Wechsler Intelligence Scales (1974, 1981) shown in the Elliott et al. study

(1985) supported using the three year time span. In a sample of 382 cases drawn from special education cases in three states, Elliott et al. (1985) found that the stability coefficients for Verbal, Performance, and Full Scale IQs for the total sample over a three-year period were .81, .78, and .85 respectively.

Instrumentation

Social Competence Nomination Form (SCNF)

Description. The Social Competence Nomination Form (M. Ford, 1982) (Appendix A) contains six hypothetical situations, "each pertaining to performance in challenging, developmentally salient social contexts involving peers, parents, or teachers" (M. Ford & Tisak, 1983, p. 199). The situations described various social goals requiring a mixture of cognitive and behavioral skills: persuading a group of teachers not to give homework over Christmas vacation, being fun and easy to be with on a date as well as sensitive to the signals of a double-dating companion, sincerely expressing condolences to the family of a favorite teacher who had recently died, escorting someone else's parents around the school as part of a PTA program to enhance parents' awareness of their childrens' instructional experiences, and directing a class play depicting some significant event in American history (M. Ford & Tisak, 1983, p. 199).

> [T]he measure was constructed on the principle that 'although global self-assessments of competence do not relate well to . . . behavioral . . . assessment(s), self-reports of discomfort and incompetence in specific situations . . . do correlate well with behavioral assessments' [Levenson & Gottman, 1978, p. 454] (M. Ford, 1982, p. 329).

Scoring method. SCNF:P was the total number of peer-nominations each student received. SCNF:S was the total number of self-rating points. SCNF:T was the total number of teacher-nominations received. In the present study, these scores were also added together (SCNF:P + SCNF:S + SCNF:T) to form a combined raw score (SCNF:CRS).

Reliability. Internal consistency reliabilities (Cronbach's alpha) were in the 70s to the mid-90s in M. Ford's studies (M. Ford, 1982; M. Ford & Tisak, 1983). M. Ford and Tisak (1983) found self-ratings to be lower than peer- and teacher-ratings, which resulted from "the greater situational discriminativeness of self-assessments compared to the more traitlike judgments of others" (p. 200).

Validity. M. Ford stated that his 1982 investigation was a meaningful first step toward validation of the SCNF, because of "the significant correlations between the behavioral (interview) and rating measures of social competence" (p. 337). Correlations among the self-, peers' and teachers' ratings were all significant as well. Peers and teachers showed the highest correlations, .57 to .71. Teacher- and self-rating correlations ranged

from .22 to .48. These social competence judgments followed Rothenberg's (1970) results in which the correlation between peer- and teacher-nominations was .71, peer-nominations and self-ratings was .28, and teacher- and self-ratings was .27 (M. Ford, 1982). These findings supported the validity of a behaviorally defined construct of social intelligence.

Justification for use. Although excellent psychometric properties have been reported for sociometric procedures (Dudley-Marling & Edmiaston, 1985), Hazel and Schumaker (1987) questioned using these devices with adolescents, because of their insensitivity to change in children older than nine or ten. M. Ford (1982) designed his situationally specific nomination procedure especially for adolescents. The SCNF's face validity looks adequate, because the hypothetical situations are ones adolescents might really experience. Sternberg and Smith (1986) commended M. Ford and Tisak (M. Ford, 1982; M. Ford & Tisak, 1983) for their social intelligence measures, which included the SCNF, because of the "substantial evidence of an underlying social intelligence ability" (p. 171). Clearly, the validity and reliability of the Social Competence Nomination Form (M. Ford, 1982) are still being established.

MEANS-ENDS PROBLEM-SOLVING PROCEDURE (MEPS)

Description. The MEANS-ENDS PROBLEM-SOLVING PROCEDURE (Spivack et al., 1981) (Appendix B) involved conceptualizing "appropriate effective means of reaching a specified goal in order to satisfy an aroused need" in a hypothetical interpersonal problem situation (Platt & Spivack, 1977, p. 1). The subject devised and told the events leading to the problem's resolution. An unlimited number of means could be stated. Spivack et al. (1981) recommended using at least three of the seven story roots appropriate for use with adults and adolescents for minimum reliability. The four MEPS story roots (Appendix B) chosen for this study involved peer relationships: (a) meeting a person of the opposite sex and developing a relationship, (b) overcoming loneliness after moving to a new neighborhood, (c) managing avoidance by peers, and (d) managing a peer's verbal aggression. These four were selected, because they involved situations adolescents might actually experience.

Scoring Method. The scoring procedures of Spivack et al. (1981) were used: (a) means (M), the number of discrete steps that enabled the story protagonist to achieve the specified goal; (b) obstacles (O), the frequency with which any problem or difficulty in attaining the goal was mentioned; (c) time references (T), the frequency with which the subject recognized the

passage of time as a part of the problem-solving process; and (d) a combined score for means, obstacles, and time references across all stories (MOT).

Categorization of means facilitated the organization of multiple ideas on the same topic (Platt & Spivack, 1977). For example, in the dating story, the category "doing something to get attention" encompassed the various behaviors used to meet the other person. Stories ranged from simple and unelaborated to very detailed and fully elaborated. To remove the scoring effects of these detailed elaborations, categories of means were counted separately from elaborations of means (Spivack et al., 1981). Time references received a score of one per story no matter how many references to time were made (Spivack et al., 1981).

Reliability. Pellegrini (1985a) reported interrater reliabilities ranging from .86 to .96 and internal consistency (Cronbach's alpha) ranging from .62 to .84 for MEPS component scores. Interrater and internal consistency reliabilities for the summary score were .98 and .88 respectively. Silver and Young (1985) and Kendall and Fischler (1984) reported interrater reliabilities ranging from .74 to .94. Platt and Spivack (1975) reported significant test re-test reliabilities in studies with institutionalized delinquent adolescents and college males. They examined internal consistency in two samples

of psychiatric patients, obtaining Spearman-Brown odd-even reliabilities of .84 and .82 and Kuder-Richardson reliabilities of .82 and .80.

Construct Validity. Platt and Spivack (1975) looked at how well the scores on the MEPS described differences among persons tested. Studies indicated that the procedure consistently discriminated groups, as well as individuals within groups. Adult psychiatric patients were differentiated from non-patients (Platt & Spivack, 1973), as were adolescent psychiatric patients from non-patients (Platt et al., 1974) and heroin addicts from non-addicts (Platt et al., 1973).

Discriminant Validity. Platt and Spivack (1975) reported that MEPS scores showed a minimal relationship to scores on paper and pencil measures of personal adjustment, including scales of the Adjective Check List and the California Test of Personality. The correlations tended to be low and of borderline significance. However, MEPS was not meant to be a measure of total adjustment, and so correlations should have been low.

Similarly, Platt and Spivack (1975) stated that MEPS was not a measure of IQ. Several correlations between IQ scores and MEPS reached significance, although generally they were "of a magnitude indicating that the MEPS is not merely another IQ test" (p. 61). The IQ measures cited did not include the Wechsler Intelligence Scales

(Wechsler, 1974, 1981). They reported that removing the statistical effects of IQ generally had resulted in maintaining or strengthening the relationship between psychiatric status and MEPS. Kendall (1986) criticized the use of less than optimal measures of IQ in the Platt and Spivack studies (1973; Platt et al., 1973; Platt et al., 1974).

Content Validity. Platt and Spivack (1975) examined content validity to determine whether each story sampled "the same quality of thinking" (p. 61). Factor analysis in three samples (male and female psychiatric patients and youthful offenders) resulted in a single factor indicating that the same quality of thinking was measured by the stories. Rubin and Krasnor (1986) criticized the content of the ICPS measures questioning the range of problems sampled, the significance of these problems to children, and the degree to which these problem situations occur in real life.

Predictive Validity. In a study of young heroin addicts, MEPS correlated significantly with length of time on parole before re-arrest (Platt & Spivack, 1975). M. Ford (1982), Marsh et al. (1981) and Pellegrini (1985a) found that MEPS statistically predicted aspects of social competence.

Justification for Use. Studies have begun to establish the reliability and validity of the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (Spivack at al., 1981) as well as the validity of the means-ends thinking construct (M. Ford, 1982; Marsh et al., 1981; Pellegrini, 1985a; Platt & Spivack, 1973; Platt et al., 1974, 1975; Silver & Young, 1985; Kendall & Fischler, 1984). The content is appropriate for adolescents, and the presentation format allows SLD adolescents to express their ideas without being limited by written expression.

Wechsler Intelligence Scales (WISC-R, WAIS-R)

Description. The Wechsler Intelligence Scale for Children - Revised (WISC-R) (Wechsler, 1974) and the Wechsler Adult Intelligence Scale - Revised (WAIS-R) (Wechsler, 1981) each consist of a Verbal Scale, where items are presented orally and require a spoken response, and a Performance Scale, where items require the manipulation of pictures or objects. Together these two scales make up the Full Scale.

The WAIS-R Verbal Scale includes six subtests. The Information subtest covers information generally learned in everyday life. For the Digit Span subtest, random strings of digits are presented orally, and the person repeats them, some forwards and others backwards. Vocabulary words are given which the person defines. Arithmetic problems are presented orally and are solved

mentally. For the Comprehension subtest, questions are asked measuring common sense reasoning and social judgment, i.e., knowledge of social conventions (Sattler, 1982). The Similarities subtest presents word pairs, and the person states how the two words are alike.

The WISC-R Verbal Scale includes subtests with the same names as the WAIS-R. However, Digit Span is optional and is not included when computing the Verbal Scale IQ.

The WAIS-R Performance Scale includes five subtests. For the Picture Completion subtest, a picture is shown, and the person tells what is missing. The next subtest, Picture Arrangement, requires laying out picture cards in front of the person. Within a time limit, the person arranges the pictures so that they tell a story. The pictures involve social interaction, especially the capacity to anticipate and plan in a social context (Sattler, 1982), herein called social schematic ability. For the Block Design subtest, the person reproduces increasingly complex designs with multicolored blocks within a time limit. The Object Assembly subtest requires the assembling of cardboard puzzle pieces to form familiar objects with a time limit. Digit Symbol is also a timed task where the person writes symbols, corresponding to a key where each symbol is paired with one of nine digits.

The WISC-R Performance Scale included subtests with the same names as the WAIS-R with two exceptions. The

Digit Symbol subtest is named Coding. There is an optional subtest, Mazes, which requires a child to draw a line to find his or her way out of a series of mazes without becoming blocked.

Because the WAIS-R was not developed until 1981, some of the students may earlier have been administered the WAIS, which is still in use. However, only the WAIS-R was administered to students in the present study.

The WAIS-R overlapped the WISC-R for the age period 16-0-0 to 16-11-30; scores from the most recent measure were used for this age group. The choice of which test to use in this age period "should depend on the validity of the inferences that can be made from scores on it" (Sattler, 1988, p. 139) or on which test yields the smallest standard error of measurement for scores at the level attained. Standard errors of measurement are in the Wechsler manuals for age but not for ability level. Therefore, the information needed to make an informed decision was not available (Sattler, 1988). The manual did indicate that the standard error of measurement is slightly smaller for the WAIS-R Full Scale and Verbal IQs, but not for the Performance IQ at 16.5 years.

Social judgment ability. Social judgment is an ability which is measured by both of the WISC-R subtests, Comprehension and Picture Arrangement. A "conventional" ability, references to social judgment appeared

"repeatedly in sources such as Sattler [1974] or Glasser and Zimmerman [1967]" (Kaufman, 1979, p. 101). Both subtests contain stimuli involving social interaction. The rationale presented for these two WISC-R subtests applies to the WAIS-R subtests as well (Sattler, 1988). The correlations between these two subtests were .40 on the WISC-R and .48 on the WAIS-R indicating that only 16% and 23% was shared variance. Therefore knowledge of social conventions as measured by the Comprehension subtest and social schematic ability as measured by the Picture Arrangement subtest were treated separately, and not combined into a shared ability in Kaufman's study.

Standardization. Four geographic regions, both sexes, white and nonwhite populations, urban and rural residents, and the entire range of socioeconomic classes were sampled for the WISC-R. The proportions in the WISC-R sample approximated the 1970 census more closely for whites than for nonwhites. Effects of this discrepancy on test score should be small (Sattler, 1988).

The WAIS-R was standardized on a sample of 1880 white and nonwhite Americans selected to represent the U.S. late adolescent and adult population during the 1970s (Sattler, 1988). The following stratification variables were used: age, sex, race, geographic region, occupation, education, and urban-rural residence (Wechsler, 1981).

Scoring Method. A Verbal Scale score (VIQ), a Performance Scale score (PIQ), and a Full Scale score (FSIQ) can be reported for each test. All are Deviation IQs with a mean of 100 and a standard deviation of 15. Because Deviation IQs are standard scores, the mean IQs and standard deviations at each age level are equal. Scaled scores with a mean of 10 and standard deviation of 3 are used to describe the individual subtests.

In this study, extant scores were used from the most recent administration of the age-appropriate Wechsler scale.

Reliability. "The reliabilities of the WISC-R Full Scale IQs are extremely high . . ., with standard errors of measurement of the IQs on the three scales being less than 5 points" (Sattler, 1982, p. 165). Each IQ scale had a reliability coefficient of at least .89 over the entire standardization group's age range. Average reliability coefficients, based on the eleven age groups, were .96 for the Full Scale IQ, .94 for the Verbal Scale IQ, and .90 for the Performance Scale IQ (Sattler, 1982, pp. 146 - 147). "The reliabilities for the three WAIS-R IQs are very high across all nine age groups, with average coefficients of .97, .93, and .97 for Verbal, Performance, and Full Scale IQs, respectively." (Wechsler, 1981, p. 31)

Reliabilities (Spearman Brown split-half correlations) across all nine age levels of the WAIS-R

were .84 for Comprehension and .74 for Picture Arrangement (Wechsler, 1981). On the WISC-R, these same subtests had reliabilities of .77 and .73, respectively (Sattler, 1982).

WISC-R Validity. Based on concurrent and criterion validity studies, intercorrelations, and factor analysis, the WISC-R's validity was adequate (Sattler, 1982). The WISC-R's concurrent validity was based on its relationship to various intelligence tests and receptive vocabulary tests (Sattler, 1982). Median correlations based on Sattler's (1982) analyses ranged "from the upper .30s to low .80s" (p. 149) with the median correlation with the WAIS-R at .82. Median correlations for criterion validity were between .56 and .60 with achievement tests and .39 with school grades (Sattler, 1982).

Intercorrelations among subtests "range from a low of .19 to a high of .69, with a median of .40" (Sattler, 1982, p. 149). Median correlations between the Verbal Scale and its subtests were .70. Between the Performance Scale and its subtests, the median correlation was .53.

Based on his 1975 factor analysis of the standardization sample, Kaufman (1979) reported three factors supporting the structure of the WISC-R scales: Verbal Comprehension, Perceptual Organization, and Freedom from Distractibility. The Verbal Scale subtests loaded mainly on Verbal Comprehension; the Performance Subtests

loaded mainly on Perceptual Organization; and the Arithmetic, Digit Span, and Coding subtests loaded mainly on Freedom from Distractibility.

WAIS-R Validity. A body of empirical and rational evidence "attests to the validity of the Wechsler adult scale as a measure of global intelligence" (Wechsler, 1981, p. 49). WAIS-R has satisfactory concurrent validity with the WAIS, the WISC-R, the Stanford-Binet: Fourth Edition, other intelligence tests, measures of achievement, and years of schooling (Sattler, 1988). Likewise, available research "provides substantial support of the construct validity of the WAIS-R" (Sattler, 1988, p. 225).

Justification for Use. Sattler (1982) stated that the WISC-R had "excellent standardization, reliability, and validity" (p. 167), which accounts for its extensive use in the diagnosis and placement of SLD children and adolescents. The WAIS-R, which measures the same abilities as the WISC-R and has similar strengths and weaknesses, was deemed suitable for those students for whom the WISC-R was not age appropriate. Both measures are acceptable, but imperfect, measures of intelligence.

Research Design

Correlational analyses examined the relationships among the measures of social planning processes, i.e.,

means-ends thinking, knowledge of social conventions, and social schematic ability, and the relationship of each process to the perceived social competence of SLD adolescents. Additional t-tests and crosstabulations examined differences in the social planning processes of the high scorers and low scorers on the social competence measure.

Specific Null Hypotheses

1. Significant intercorrelations ($p<.05$) will not be found among the three social planning processes of a group of SLD adolescents: (a) means-ends thinking, as measured by the total score (MOT) from MEANS-ENDS PROBLEM-SOLVING PROCEDURE (Spivack et al., 1981); (b) knowledge of social conventions, as measured by the scaled score (C) from Comprehension subtest from the Wechsler Intelligence Scales (Wechsler, 1974, 1981); and (c) social schematic ability as measured by the scaled score (PA) from the Picture Arrangement subtest also from the Wechsler Intelligence Scales.

2. The social planning processes will not correlate significantly ($p<.05$) with the perceived social competence of these SLD adolescents, as measured by the total combined raw score (SCNF:CRS) from the peer and teacher nominations and the self-ratings from the Social Competence Nomination Form (M. Ford, 1982).

3. The social planning processes will not be significant determinants ($p<.05$) of differences between high (HS) and low (LS) scorers on the perceived social competence measure in a sample of SLD adolescents.

Statistical Analyses

Hypothesis 1: Pearson product moment intercorrelations compared the rankings of the scores (MOT, C, PA) on the social planning process measures.

Hypothesis 2: Pearson product moment correlations and multiple regression analyses compared each set of scores (MOT, C, PA) from the social planning process measures with the set of total combined raw scores (SCNF:CRS) from the social competence measure.

Hypothesis 3: Crosstabulations and *t*-tests compared the social planning process scores (MOT, C, PA) of the 15 highest SCNF scorers (HS = SCNF:CRS > 108) with those of the 15 lowest SCNF scorers (LS = SCNF:CRS > 46).

Other analyses included compiling summary statistics for the UCLA system of markers (Keogh et al., 1982), reliability assessments, and explorations of relationships uncovered during the hypothesis testing. Pearson correlations assessed the interrater reliability of the means-ends thinking measure and the internal consistency of that measure as well as the social competence measure. Pearson correlations compared Descriptive and Substantive markers with social competence and means-ends thinking

scores. Crosstabulations compared the high and low scorers on several Descriptive and Substantive markers.

Summary of Methodology

The UCLA system of marker variables (Keogh et al., 1982) described the sample of 59 SLD students from The New Community School. Summary statistics included means, standard deviations, and ranges derived school records, a parent questionnaire (Appendix E), and the social planning process and social competence measures.

First, the research team administered the Social Competence Nomination Form (SCNF) (Appendix A) (M. Ford, 1982), a measure of self-, peers', and teachers' perceptions of social competence in hypothetical situations. A research assistant scored the SCNF. Extreme groups (n = 15) of the high scorers (SCNF:CRS > 108) and low scorers (SCNF:CRS < 46) were identified.

Concurrently, to measure the students' means-ends thinking, research assistants administered four story roots from the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (MEPS) (Appendix B) (Spivack et al., 1981). All responses were audio-taped and transcribed. The MEPS was scored by the researcher who was blind to scores on the SCNF. A research assistant scored a random set of 20 protocols to use for interrater reliability.

To measure knowledge of social conventions and social schematic ability, researchers used school records to

obtain extant scaled scores from the Comprehension and Picture Arrangement subtests from the age-appropriate Wechsler Intelligence Scales (Wechsler, 1974, 1981).

Statistical procedures explored the three research hypotheses. First, Pearson correlations examined significant relationships among the scores from the social planning process measures. Then Pearson correlations and multiple regression analyses compared the rankings of the total combined raw scores from the social competence measure to the rankings of each set of social planning process scores. The next set of analyses used t-tests and crosstabulations to focus on differences between high and low scorers on the social competence measure.

Additional procedures examined reliability, compiled summary statistics, and explored relationships uncovered in the other procedures. Pearson correlations assessed the interrater reliability of the means-ends thinking measure and the internal consistency of that measure and the social competence measure. Pearson correlations compared Descriptive and Substantive markers with social competence and means-ends thinking scores. Crosstabulations compared the high and low scorers on several Descriptive and Substantive markers.

These analyses uncovered the relationships between measures of the perceived social competence of SLD adolescents and measures of aspects of their social planning processes.

CHAPTER IV

Results

Sample Description

The sample consisted of the students enrolled at The New Community School in Richmond, Virginia. Because all attended this small school for SLD adolescents, the social competence of the SLD cohort was assessed without the influence of NLD peers and with opportunity for all to participate in school social activities.

The four categories from UCLA system of markers (Appendix D) (Keogh et al., 1982) described the sample (N = 59). Data were drawn from school records, a parent questionnaire (n = 57, Appendix E), the social competence measure and the social planning process measures (n = 58).

Descriptive Markers

These markers comprised data common to all human subject research: demographics, language, education, and health (Keogh et al., 1982).

Demographics. Of the 59 students in grades 7 through 12, 48 (81.4%) were males and 11 (18.6%) were females. Students were distributed evenly across the six grade levels with the fewest students in grades seven and twelve: grade seven = 5 (8.5%), grade eight = 15 (25.4%),

grade nine = 10 (16.9%), grade ten = 9 (15.3%), grade eleven = 14 (23.7%), grade twelve = 6 (12.3%). When the grades were combined in grade-level groups, which is how they are organized for some classes, students were more evenly distributed. Grades seven/eight and grades eleven/twelve each had 20 students (33.9%), and grades nine/ten had 19 students (32.2%).

The majority (n = 47) lived in the suburbs (52.6%) or in the city (29.8%). The rest (n = 10) lived in rural areas (12.3%) or in small towns (5.3%).

No racial or ethnic minority students were in the sample. Two families identified students as being of a race or ethnic origin other than Asian American, Black, Caucasian, Hispanic, or North American Indian. However, they did not indicate the race or ethnic origin of these students. Fifty-five students (96.5%) were Caucasian. All were from English-speaking homes.

Two members of the school's admissions committee rated socioeconomic status based on confidential data in admissions applications. The specific basis for the categorization was not available to the researcher. Over 90% of the students were rated in either the middle (n = 38, 66.7%) or upper (n = 14, 24.6%) income groups, and only 9% (n = 5) were rated in the lower income group.

Educational history. The students had attended TNCS from a minimum of one semester to a maximum of six years with an average enrollment period of 2.8 years. Three had attended private SLD schools for at least eight years. Twenty-eight (49.2%) had repeated one or two grades. Twelve students (21%) had attended six or more schools.

Seventeen students (29.8%) had never attended public school, an important consideration when examining how many had been found eligible by local school divisions for special education services. Of the 53 students for whom all data were complete, i.e., the 53 valid cases, 31 students (58.6%) were eligible for public school special education services. There is some overlap because some public school divisions deemed some of the private school students eligible for services. Special education eligibility was unknown for six students (12%). Of those eligible for special education services, the duration of eligibility was from one to fourteen years with a mean of four years. Of those found eligible, all were classified learning disabled with two additionally classified as speech/language impaired. No students were identified as severely emotionally disturbed nor mentally retarded.

Health issues. Thirteen students (22.8%) wore glasses. Six (10.7%) were medically diagnosed as neurologically impaired. Fourteen students were medically

diagnosed as chronically ill: nine (15.8%) had allergies, four (7%) had asthma, and one had kidney disease. The most pervasive health problem was medically diagnosed attention-deficit disorder. Twenty-four (42.1%) were so diagnosed, with eleven of those also diagnosed hyperactive and sixteen currently on medication.

Substantive Markers

Substantive Markers, which are associated with most definitions of SLD, included markers for intellectual ability, academic achievement, behavioral and emotional adjustment (Keogh et al., 1982).

Intellectual ability. Licensed clinical psychologists, licensed professional counselors, and school psychologists had administered the age-appropriate Wechsler Intelligence Scale (Wechsler, 1974, 1981) within three years of the study's initiation date. Data were available for all but one student. WISC-Rs accounted for 42 cases (72%); WAIS-Rs accounted for 16 cases (28%).

Forty-six students (78%) earned FSIQs which fell within the average range, i.e., within one standard deviation of the FSIQ mean of 100. Thirteen students (22%) earned scores which fell more than one standard deviation above the mean. No students' scores fell more than one standard deviation below the mean. The range of FSIQ scores was from 85 to 136. The group's mean FSIQ was 108.09 (SD = 10.09).

Verbal and Performance IQ scores followed a similar pattern. The mean VIQ was 107.67 (SD = 11.4), and the mean PIQ was 107.52 (SD = 12.37). The range for Verbal scores was 85 to 137 and for Performance scores, 85 to 135.

The mean subtest scaled score for the Verbal Scale was 11.05 and for the Performance Scale was 11.07. Mean scaled scores ranged from a low of 8.8 on the Coding/Digit Symbol subtests to a high of 12.6 on the Comprehension subtest.

The next two lowest scores occurred on the Arithmetic and Digit Span subtests, which are associated with the Freedom from Distractibility factor on both the WISC-R and the WAIS-R (Sattler, 1988). This pattern of scores may be related to the fact that 42% of this population was medically diagnosed with attention-deficit disorder.

Reading, arithmetic, and spelling achievement.

TNCS faculty administered the age-appropriate achievement measures during the Spring of 1988. Standard scores with a mean of 100 and a standard deviation of 15 described achievement levels.

Although achievement scores at time of admission were available, the researcher chose not to analyze the discrepancy between intellectual ability and academic achievement, because statistical analysis could not account for the influence of previous education on

admissions scores.

Scores were not combined to represent global reading, spelling, and arithmetic achievement, because the tests reported here were all normed on different populations and assessed multiple academic functions. There was considerable variation among the scores reported. It is not within the scope of this paper to analyze those variations, but clearly this is an area in need of additional research.

Unless noted, mean scores represent achievement for all 59 subjects.

Reading achievement. Two measures of reading achievement were administered as part of the admission process: (a) the reading subtest from the Wide Range Achievement Test - Revised (WRAT-R), Level II, (Jastak & Wilkinson, 1984) and (b) the Iowa Silent Reading Tests (IOWA), Levels 1 and 2 (Farr, 1973).

The percentile rank for each student's IOWA Total Reading score was converted to a standard score equivalent using the chart in the WRAT-R manual (Jastak & Wilkinson, 1984). When percentile ranks fell between standard scores, the higher one was used, which may have caused a slight elevation in the IOWA mean score.

In the Spring of 1988, the mean standard score on the WRAT-R Reading subtest was 101.36 with a standard deviation of 13.72 and a range of 64 t0 131. The mean

IOWA Total Reading Score was 104.25 with a standard deviation of 11.68 and a range of 75 to 132.

Two additional measures had been used to aid in educational programming: (a) Gray Oral Reading Test - Revised (GORT-R) (Weiderholt & Bryant, 1986) and (b) the Word Recognition subtest from the Diagnostic Spelling Potential Test (DSPT) (Arena, 1981). Based on Spring 1988 scores, the mean GORT-R standard score was 107.4 with a standard deviation of 16.12 and a range of 79 to 139. The mean for the DSPT Word Recognition subtest was 99.85 with a standard deviation of 10.62 and a range of 67 to 126.

Arithmetic achievement. Spring 1988 scores from three arithmetic achievement measures were available: (a) Arithmetic subtest from the Wide Range Achievement Test - Revised (WRAT-R), Level II, (Jastak & Wilkinson, 1984), (b) Stanford Diagnostic Math Test (SDMT), Blue Level (Beatty, Madden, Gardner, & Karlsen, 1976) and (c) KeyMath Diagnostic Arithmetic Test (KM) (Connolly, Nachtman, & Pritchett, 1976).

The percentile rank from the SDMT for each student's total score was converted to a standard score equivalent, using the chart in the WRAT-R manual (Jastak & Wilkinson, 1984). When percentile ranks fell between standard scores, the higher one was used, which may have caused a slight elevation in the SDMT mean score.

In the Spring of 1988, the mean standard score on the WRAT-R arithmetic subtest was 98 with a standard deviation of 12.20 and a range of 54 to 145. The mean SDMT score for the 51 who took this test was 105.6 with a standard deviation of 11.32 and a range of 80 to 129. Grade equivalents were the only global scores available for the KeyMath. The mean grade equivalent for the 19 students who took this test in Spring 1988 was 8.3 with a standard deviation of 1.43 and a range of 3.7 to 9.5.

Spelling achievement. The spelling subtests from the Wide Range Achievement Test - Revised (WRAT-R) Level II, (Jastak & Wilkinson, 1984) and the Diagnostic Spelling Potential Test (DSPT), (Arena, 1981) also were administered in Spring 1988. The mean WRAT-R standard score was 88.34 with a standard deviation of 15.66 and a range of 65 to 126. The DSPT mean score was 97.37 with a standard deviation of 12.96 and a range of 78 to 137.

Behavioral/emotional adjustment. Local school divisions found no students eligible for services for the seriously emotionally disturbed. Parents, however, reported that 16 students (28%) had been referred for counseling or psychotherapy during the current school year and that 13 students (23%) were currently receiving counseling or psychotherapy.

Background Markers

Background Markers identify study-relevant information (Keogh et al., 1982) and for this study included the time for the data collection and the study's geographical location. The study was done in Richmond, Virginia, and included subjects residing in central Virginia. Data collection began on April 22, 1988 and ended on June 10, 1988.

Topical Markers

Variables under investigation were the Topical Markers (Keogh et al., 1982).

Social competence markers. The combined raw score (SCNF:CRS) of teacher and peer nominations and of self-ratings from the Social Competence Nomination Form (Appendix A) (M. Ford, 1982) represented the social competence of this SLD sample. The sample's mean SCNF:CRS was 88.78 with a range of 21 to 342 and a standard deviation of 61.19.

Social planning process markers. Means-ends thinking was measured by the total means-ends score (MOT) on the MEANS-ENDS PROBLEM-SOLVING PROCEDURE (Appendix B) (Spivack et al., 1981). The mean MOT score was 15.83 with a range of 4 to 40 and a standard deviation of 7.3.

The Comprehension subtest of the Wechsler Intelligence Scales (Wechsler, 1974, 1981) measured knowledge of social conventions. The mean Comprehension

scaled score was 12.57 with a range of 6 to 18 and a standard deviation of 2.73.

The Picture Arrangement subtest of the Wechsler Intelligence Scales (Wechsler, 1974, 1981) measured social schematic ability. The mean Picture Arrangement scaled score was 12.16 with a range of 4 to 18 and a standard deviation of 2.82.

Reliability

Pearson product moment correlations tested the internal reliability of the Social Competence Nomination Form (M. Ford, 1982). Correlations among the teacher-, peer-, and self-perceived social competence scores, as well as correlations between these scores and the combined social competence raw score, were positive and significant at the .001 level, except for the correlation of self-ratings and teacher-nominations, which was significant at the .05 level. As in M. Ford's 1982 study, the highest correlation was between the teacher and peer nomination scores (.75), and the lowest was between teacher nomination scores and the self-ratings (.25). The correlation for peer nomination scores and self-ratings was .45.

Pearson product moment correlations also examined the interrater reliability of the means-ends thinking scores. All were positive and significant ($p<.001$) and ranged from .82 to .97, exceeding the .80 level set by Waters and

Tinsley (1985).

Internal consistency reliabilities (Cronbach's alpha) for the MEPS were less than those obtained by Pellegrini (1985a) and by Platt and Spivack (1975) and ranged from .49 to .68 for the component scores and .76 for MOT.

Relationships among Social Planning Skills

Pearson product moment correlations tested the first null hypothesis by examining intercorrelations among the social planning process scores: means-ends thinking, knowledge of social conventions, and social schematic ability. The null hypothesis that significant intercorrelations would not be found was rejected, because the following correlations were statistically significant at least the .05 level of significance. Means-ends thinking correlated moderately (.42) and significantly ($p<.001$) with knowledge of social conventions and minimally (.23) and significantly ($p<.05$) with social schematic ability. Social schematic ability also correlated moderately (.41) and significantly ($p<.001$) with knowledge of social conventions.

Relationship between Social Competence and Social Planning Processes

Pearson correlational analyses tested the second null hypothesis, i.e., that there was no relationship between the measure of social competence and the measures of social planning processes. This hypothesis was

accepted, because the data analyses proved that of the three social planning processes, only knowledge of social conventions correlated significantly ($p<.05$) although minimally (.22) with perceived social competence.

Scattergram analysis revealed the existence of outliers, i.e., extreme scores, on both the social competence and means-ends thinking measures. To determine the effects of these outliers on the correlations, a second correlational analysis was done where they were omitted. Removal of the outliers reduced the range of SCNF scores from 21 through 342 to 21 through 244 and the MEPS scores from 4 through 40 to 4 through 30. This process improved the significance of the correlations with social competence to .07 for means-ends thinking, to .02 for knowledge of social conventions and to .08 for social schematic ability.

Multiple regression analyses predicted the variance in social competence attributed to the social planning process variables. All variables entered the equation. However, together they accounted for only 5% of the variance ($R^2=.05$, $p=>.05$).

Comparisons of the High SCNF Scorers with the Low SCNF Scorers

Additional analyses tested the third null hypothesis, i.e., that SLD adolescents with the highest social competence scores would not score significantly higher on

the three measures of social planning skills than the group with the lowest social competence scores.

The upwardly skewed distribution of the SCNF combined raw scores (M = 88.78, SD = 61.18, MIN = 21, MAX = 342) precluded using plus or minus one standard deviation (28 - 150) to define the boundaries, because the groups would have been small and uneven (> -1 SD = 2, > +1 SD = 9). Therefore, the top and bottom quartiles were used (n = 15, LS = SCNF:CRS = < 46, HS = SCNF:CRS = > 108).

The HS group mean on the SCNF was 171.2 (SD = 61.40), and the LS group mean was 36 (SD = 8.0). As expected, t-tests comparing the group means confirmed that the two groups were significantly different (t [28] = -8.46, p<.000).

First, t-tests compared the HS and LS group means from the social planning process measures. The group means on the social schematic ability measure and the means-ends thinking measure were not significantly different. The means differed significantly only on the knowledge of social conventions measure (t[28] = -2.64, p<.01). The HS group mean was 14, and the LS group mean was 11. Consequently, the null hypothesis was accepted that there was no significant difference between the scores of the HS and LS groups on the measures of social planning processes.

Crosstabulations depicted the HS and LS score distributions on the three social planning process measures. On the means-ends thinking measure, the scores distributed identically. Distribution differences were more evident, but the chi-square values were still not significant on the other two social planning process measures.

On the social schematic ability measure, 13 LS students (87%) and 14 HS students (93%) scored above or within one standard deviation of the mean, i.e. the average range. However, more HS students (n = 6) than LS students (n = 2) scored above the average range.

On the knowledge of social conventions measure, the HS students scored in or above the average range. Two of the LS students obtained below average scores. None of the chi-square values were significant, so there were no significant differences in the distributions of scores on these measures.

Differences between the LS and HS groups on descriptive and substantive variables also were examined with t-tests and crosstabulations to see if any other factors contributing to perceived social competence could be discerned.

Descriptive variables inspected included demographics, educational history, and health status. Of the variables examined, chi-square values were significant

for age ($p<.01$), grade level ($p<.05$), and years at TNCS ($p<.05$). The chi-square value approached significance for socioeconomic status ($p=.0566$). Nonsignificant variables included sex, medically diagnosed attention-deficit order, wearing of glasses, number of schools attended, locale of residence, number of grades repeated, and medically diagnosed neurological impairment.

The LS group mean for age ($M = 15.3$) was significantly ($p<.01$) lower than the HS group mean ($M = 17.2$). Eight of the 15 students in the LS group were between 13 and 14.9 years old, and ten of the students in the HS group were between 17 and 19 years old. Only three of the oldest students were in the LS group and only one of the youngest was in the HS group. No seventh grade students and only two eighth grade students were in the HS group. Two seventh graders and six eighth graders were in LS group.

Length of time students had attended TNCS was a factor as well. Ten of the LS group had been there one year or less, while ten of the HS group had been there three or more years.

Although not significant, the distribution of socioeconomic levels among the groups was interesting. In the LS group, eleven were classified at the middle income level, one was classified at the upper income level, and two were classified at the lower income level. In the HS

group, no students were classified at the lower income level, nine were classified at the middle income level, and six were classified at the upper income level.

Substantive variables examined included intelligence, academic achievement, and behavioral/emotional adjustment. FSIQ represented intelligence. Academic achievement was represented by WRAT-R Reading, Spelling, and Arithmetic subtest scores, IOWA scores, and GORT-R scores. Whether students were currently in therapy was the criteria for behavioral/emotional adjustment. The groups' FSIQ means were identical and the distributions were similar and nonsignificant. The distributions of scores on the measures of academic achievement were not significant nor was there any significant difference on the measure of behavioral/emotional adjustment.

Effect of Age on Means-Ends Thinking and Social Competence Scores

Questions in the literature about the relationship between age and means-ends thinking scores as well as age and social competence scores led to a closer examination of these relationships. Pellegrini (1985a) found that older subjects' means-ends thinking scores declined significantly, although M. Ford (1982) found that older students scored significantly higher. Pearson correlation of age and means-ends thinking scores found no significant relationship. M. Ford (1982) also found that young

students were viewed as less socially competent than older students, a finding supported in this study by the significant difference in age between the older HS group and the younger LS group and by the significant correlation between age and total social competence raw scores (R = .40, P<.001).

Summary

In this sample of SLD adolescents, perceived social competence was not related to the social planning processes under examination: means-ends thinking, knowledge of social conventions, and social schematic ability. Nonetheless, those processes were related significantly to each other and, in part, measured a common attribute. Also, the scores of the social competence measure and the means-ends thinking measure interrelated significantly, supporting the reliability of each.

Group comparisons revealed that the high scorers on the social competence measure differed in some ways from the low scorers. They were older, had attended TNCS longer, and were in either the middle or upper income groups. The high scorers were similar to the low scorers in social planning ability, general intelligence, academic achievement, health factors, educational history, and behavioral/emotional adjustment. The discriminating social competence factors in these two groups were not

those associated with social cognition but apparently were ones which could be expected to discriminate similarly in a normal learning sample.

CHAPTER V

Discussion

This study addressed three questions: (1) Are social planning processes, i.e., means-ends thinking, knowledge of social conventions, and social schematic ability, related to each other? (2) Are they related to the social competence of SLD adolescents as perceived by teachers, peers, and the adolescents themselves? (3) Are they determinants of differences in the perceived social competence of SLD adolescents?

Positive significant intercorrelations among the three sets of social planning process scores supported the hypothesized relationship among them and strengthened the reliability data for the means-ends thinking measure and the social competence measure.

The intercorrelational analyses did not support the hypothesized relationship between social planning processes and the perceived social competence of SLD adolescents. Nor did the t-tests and crosstabulations results support these social planning processes as determinants of differences in perceived social competence. Social competence high scorers resembled low scorers in general intelligence, academic achievement, health factors, educational history, and behavioral/emotional adjustment. They differed only by being older, by

attending the school longer, and by being more likely to be in the middle or upper socioeconomic groups. The tenuous links between social cognition and social competence, whose sturdiness Shantz (1983) questioned, were not fortified here. However, as the strengths and weaknesses of the present study unfolded, worthwhile ideas for related research emerged.

Theoretical Issues

The hypothesized relationship between social planning processes and perceived social competence in SLD adolescents did not emerge in this study, although previous studies uncovered a relationship for means-ends thinking and social competence, both in NLD and SLD adolescents (M. Ford, 1982; Marsh et al., 1981; Pellegrini, 1985a; Schneider & Yoshida, 1988; Silver & Young, 1985). A computer search found no research on the relationship of knowledge of social conventions and social schematic ability to the social competence of adolescents. The present study did support the behavioral planning control process component of M. Ford's (1986) social competence theory, but the methodological and sampling issues, which are discussed in the following pages, may have interfered with demonstrations of an empirical relationship between social competence and these processes. The study also disclosed the possibility that means-ends thinking and social schematic ability might be

related but independent measures of divergent and convergent social reasoning. Lastly, the shared variance found here replicated Kaufman's (1979) providing similar support for the social judgment ability construct.

Social Planning Process Theory

The reliability of the means-ends thinking measure, the significant intercorrelation of the three social planning process measures, and the similarity of performance on those measures by the high and low scorers gave support to the social planning process theory, i.e., M. Ford's behavioral planning control process theory.

Internal consistency analysis (Cronbach's alpha) of the MEANS-ENDS PROBLEM-SOLVING PROCEDURE scores (Spivack et al., 1981) produced results ranging from .49 to .68 for the component scores and .76 for the total score. These results were lower than Platt's and Spivack's (1975) and Pellegrini's (1985a). Few items (4 situations) and the upwardly skewed score distribution (M = 15.83, SD = 7.3, MIN =4, MAX = 40) contributed to the lower reliabilities.

The positive, significant social planning process score intercorrelations indicated a tenuous relationship, because all were low to moderate. Knowledge of social conventions explained less than 20% of the variance in means-ends thinking and social schematic ability explained only 5%.

Means-ends thinking may rely then in part on understanding conventional social behavior. Such understanding may affect one's choices of means to solve social problems. The sequencing process may be the shared ability of means-ends thinking and social schematic ability. These hypothesized relationships need further investigation.

The similarity of the high and low scorers' performance on the social planning process measures supported the cohesiveness of the social planning process construct. Despite the skewed distribution of the means-ends thinking scores, the high and low scores distributed identically with only a difference of about three points in the groups' mean scores. Even though distribution differences were evident on the other social planning process measures, the chi-square values of these distributions were not significant either.

Social Competence Theory

The positive, significant intercorrelations of the component and total scores of the Social Competence Nomination Form and the positive, significant correlation of the total combined raw scores with the knowledge of social conventions scores gave support to the outcome component of M. Ford's (1986) theory of social intelligence, where he defines social competence as the extent to which a person perceives himself or herself or

is perceived by others to be able to achieve relevant social goals.

The intercorrelations of the SCNF scores supported the social competence construct and validated using ratings from multiple sources. The correlations followed closely those M. Ford (1982) reported. The highest correlation (.75) was between the peer and teacher nominations, followed by peer and self-ratings (.45), then by teacher and self-ratings (.25).

Several factors contributed to the lower self-rating correlations. In a related study, M. Ford and Tisak (1983) concluded that self-ratings were lower, because people tend to make assessments by their perceptions of how well they handle specific situations, whereas they tend to judge others' abilities to handle situations by their perceptions of others' personality traits. Also, because of the developmental nature of perspective taking ability (Spivack et al., 1976), some adolescents may not have developed the ability to judge their own capabilities as well as others can, especially adults. Or it may be simply be that these adolescents wisely knew that rating themselves high would improve their scores.

Knowledge of social conventions was included in the study, because reasoning about specific social goals is integral to the social planning process and to social competence as M. Ford (1986) defined it. The significant,

positive correlation between the social competence scores and the knowledge of social conventions scores supported this hypothesized relationship. Knowledge of social conventions accounted for only 5% of the variance, because social contextual understanding constitutes only one aspect of the complex social goal attainment process.

Divergent and Convergent Aspects of Social Planning Processes

The present study focused on a cluster of social planning processes and the hypothesized relationship between them and social competence and not on the cognitive processes involved in each task. However, the low correlation between the measures of means-ends thinking and social schematic ability suggested that different cognitive processes might be used on each task. The means-ends thinking task requires use of divergent, verbal reasoning processes and allows the person to select from his or her own repertoire the steps to resolve a social problem. On the other hand, the social schematic ability task requires use of convergent and visual/verbal reasoning processes and restricts one to ordering prescribed steps in pictured social situations. One or the other of these measures may assess a person's social planning ability more accurately depending on which cognitive process is the more efficient. Further investigation of the differences between these measures of

social reasoning using normal learning samples is warranted.

Social Judgment Ability Construct

The moderate correlation (.41) of social schematic ability with knowledge of social conventions provided some support for continuing to use them both to describe the shared ability called social judgment (Kaufman, 1979). Part of social judgment ability might be the capacity to plan and anticipate in social situations using knowledge of social conventions. The Wechsler subtests' shared variance, however, remains only 17%, consistent with Wechsler's findings (1974, 1981).

This study strengthens the empirical base for the social planning process and social competence theories, but not the hypothesized relationship between them. Nonetheless, the validity of the instruments and the nature of the sample need to be considered before concluding that no relationship exists between social planning processes and social competence.

Methodological Issues

Validity of the Social Competence Nomination Form

The most obvious problem with the social competence measure was the upwardly skewed distribution of the combined total raw scores. Comparison of the range of high and low scorers demonstrated this problem. The high scores ranged from 108 to 342 (M = 171.2, SD = 61.4), a

range of 234 points. The low scores ranged from 21 to 46 (M = 36, SD = 8.0), or a range of only 23 points. Three students, all girls, scored more than 230 points, at least 35 points above the highest boy's score. Despite this visible difference, the high score range was so wide that the chi-square value in the crosstabulations for sex was not significant.

The high scorers' profile indicated that factors other than social planning process ability affected social competence choices. For example, the highest score, by well over 100 points, was earned by a seventeen-year-old girl who had attended TNCS for 6 years and whose social planning process scores fell near each instrument's mean. Clearly her social planning processing was not the factor that made her social competence outstanding to her peers and teachers.

The profile of the high scorers' demographic and substantive markers indicated that health status, educational history, IQ, academic achievement, and behavioral/emotional adjustment did not distinguish the two groups either. The data suggested that peers and faculty selected older students familiar with and experienced in the system whose socioeconomic level indicated that their family experience went beyond basic survival needs and allowed for the development of community social concerns.

Another problem may have resulted from the process used to combine raw scores. Both students and teachers nominated students from the three grade-level groups (7/8, 9/10, 11/12) and from the entire student body. This process allowed for both a narrow and wide range of choices with the intention of reducing discrimination by age. It also considered the social structure of a small school (n = 60) where students not only know people in their classes but also know those with whom they share school-wide social and athletic activities. However, using this process allowed students to be named twice for each situation, which may have inflated some scores and contributed to the upward skewed distribution.

In future studies using a similar school setting, the researcher may want to weight the peer- and teacher-grade-level nomination scores and the self-ratings in order to balance them better with the whole-school nominations. For example, the raw peer- and teacher-nomination scores could be statistically weighted with a probability factor that reflected the likelihood of being nominated. Such refinement of the scoring process might help to eliminate the SCNF distribution inequities found in this study.

Familiarity may also have played a role in students' and teachers' choices, because length of time at TNCS discriminated high scorers form low scorers. Should this

study be replicated in a similar setting, confining choices to groups where students know each other well may improve the significance of the social competence/social planning process relationship.

M. Ford (1982) intended the situations to be situationally specific. However, those situations may not have tapped this sample's experiences. Some students may not have understood very well the competencies involved in dealing with grief or in directing a play to make informed choices. Others, especially the younger ones, may have lacked the experience to judge the double date situation. Situational specificity remains a thorny issue, because if situations are specific to a given sample's experiences, the response validity is improved but generalization decreases, unless the situations chosen represent common adolescent experiences.

Some situations may have been contaminated by age and sex factors. In this sample, boys outnumbered girls four to one. If in choosing a partner for a double date, most of the boys chose the same girl, a disproportionate number of points might have accrued for the chosen girls. In addition, when asked to pick a partner from the whole school, age may have affected choices more than when the choice was within grade-level groups.

The situations may not have been problematic enough for resolutions using planning abilities, or the students

may have used personality traits, physical attractiveness, or familiarity when making choices. In future studies with the SCNF, a rating scale could be used where faculty and students indicate the reasons for their nominations and ratings, e.g., personality traits, physical attractiveness, extensive to no experience with a given situation, degree of familiarity with the nominee, etc.

The sample itself may have contributed to problems with the SCNF. These were SLD students, 42% with medically diagnosed attention-deficit disorder, many of whose lowest WISC-R or WAIS-R subtest scores occurred on the Arithmetic, Digit Span, and Coding/Digit Symbol subtests. The SCNF is a paper-and-pencil task. The researcher adapted it to compensate for reading problems by reading situations and directions aloud, and for spelling problems by checking legibility of written responses. Students also had pictures and names of all the students. However, scanning the pictures and reading the names required accurate visual perceptual processing and accurate visual memory processing. With many students having somewhat low Coding/Digit Symbol scores ($\underline{M}$ = 8.8), problems with attention to visual detail as well as with concentration and memory could have affected their choices and the scores.

Despite its methodological problems, the SCNF did provide a multidimensional evaluation of social competence

in this SLD sample. The researcher tried to define social competence theoretically as well as operationally and to give the term a positive connotation rather than to associate it with behavioral problems, which other researchers have done (McConaughy, 1986; McConaughy & Ritter, 1986).

Earlier studies compared SLD students to normal learning peers on social status or peer popularity measures. Reviewers emphasized the need to examine factors which contribute to differences in social status (Dudley-Marling & Edmiaston, 1985; Maheady & Sainato, 1986). Studies demonstrated that determinants of social status included perception and comprehension of the cues in a social situation, and interpersonal problem solving. None of the social cognitive processes investigated here proved to be determinants of social competence. Significant determinants included only age, length of attendance at TNCS, and possibly socioeconomic status. As Hazel and Schumaker (1987) recommended, further research into the relationship of cognitive events and the social performance of SLD youth still needs to be done, with consideration given to the methodological problems identified here.

Additional validity studies are needed before decisions can be made about the usefulness of M. Ford's (1982) measure of social competence. In particular,

studies need to be done which address content validity, cognitive processing involved in the task, situation specificity, and factors having an impact on the nomination process. In addition, predictive validity needs to be examined by follow up observation in natural settings to see if perceived social competence translates into observed social competence and if so, to identify the actual behaviors students use in real life situations.

Validity of the Means-Ends Problem-Solving Procedure

Problems with the interview process, the students' previous test experience, the scoring procedures, and the predictive and content validity of the means-ends thinking measure need to be addressed in future research.

Problems with the interview process included the notable similarity among some younger boys' stories, as if they had shared ideas, especially that of using a "surprise party" as a means to regain friends. The research assistant had told them not to discuss the interviews, but somehow several of them reached the same, fairly specific solution.

In addition, some students responded to the audio-tape as if they were on stage, whereas others became reticent and ill-at-ease. Some students worried about whether the research assistant was able to write fast enough and kept interrupting themselves to check with her, despite assurances that they were also being taped.

A third concern was the SLD students' perception of the interview as a testing procedure. Because they are tested both educationally and psychologically more often than their normal learning peers, many SLD students perceive the testing process as intentionally designed to display their inadequacies. Despite reassurances, many of these students expressed concern about being "tested" and about doing the means-ends thinking task. Discovering ways to control the effects of factors such as communication with peers about the procedure, distractibility, self-confidence, and test experience will be a challenge to future researchers.

Investigators have questioned how well responses on ICPS measures predict naturalistic problem-solving strategies (Kendall & Fischler, 1984; Pellegrini, 1985b; Rubin & Krasnor, 1986). These students' responses did not resolve this issue.

Many stories lacked realistic problem-solving, even though means, obstacles, and time references were clearly enumerated and earned credit. For example, 40 of 59 subjects said they would use physical harm, a prank, or property damage as a means to get even with a peer who said something "nasty," which obviously would complicate rather than solve the problem. Practicality and reality orientation of responses were not scored, although responses were categorized by nature of the content,

e.g. use physical harm, get even verbally.

Several students, including the one who earned the highest score, told rambling, convoluted, bizarre stories. Scoring such stories was a challenge, because ideas just tumbled forth randomly. Sorting ideas into appropriate means categories and deciding when obstacles and new means were introduced often was difficult. Such stories gave little sense of the students' every day problem-solving.

Indecisive students struggled to choose among options. Some earned high scores when they told long stories, moving from means to obstacle to new means and changing course several times before arriving at a solution. Whether this process reflected their actual problem-solving strategies or their difficulty with verbal sequential organization was not discernible.

Some of the high SCNF scorers earned only average means-ends thinking scores, possibly because their use of previously learned responses enabled them to respond concisely. Their responses also gave inadequate clues to their real problem-solving strategies.

Rubin & Krasnor (1986) questioned the content validity of the ICPS measures, because of the narrow range of problems sampled, the significance of these problems to youth, and the degree to which these problem situations occur in real life, concerns similar to those raised about the SCNF. Indeed, many of the SLD sample expressed a lack

of familiarity with the problem of making friends after a move or with how a relationship develops from first meeting to marriage.

Further research into the content, construct, and predictive validity of the means-ends thinking measure is needed before accepting or rejecting the hypothesized relationship between social planning processes and social competence.

Sampling Issues

For practical reasons, the researcher did not compare the SLD sample's performance on the social planning process measures with that of a matched NLD sample, primarily because of the expense and the time it would take to locate and test a set of matched controls. Before drawing conclusions about the strength of the relationship among these social planning processes, such a study should be done. Ideally, the matched control group would attend a school of comparable size so that the researcher could obtain comparable data on Descriptive and Substantive Markers and within-group measurements of perceived social competence. Although the results from that study, like those from this one, would generalize only to comparable populations, use of small samples with a high degree of familiarity among the students might enable the researcher to discern factors which discriminate between high scorers and low scorers on the social competence measure. The

researcher could clarify the effect of Specific Learning Disability on differences in perceived social competence and discriminate SLD factors from other variables affecting social competence and social planning processing.

If a similar study is undertaken, whether it uses only SLD students or both an SLD group and matched controls, the researcher should study a larger sample with a narrower age range who know each other well. Such a study would improve the strength of the intercorrelations of the social planning processes and strengthen their correlation with social competence.

Keogh (1986) suggested that more complete reporting of subject information by researchers would generate a data base for subgroup analysis and eventually contradict the assumption that some common denominator underlies the performance of SLD persons. This detailed SLD sample description adds to such a data base, which should be useful for resolving the definitional issues, for building a theoretical framework, and for developing a paradigm for the study of SLD persons (Swanson, 1987). Consistent use of a system of sample markers will enable researchers to better describe and interpret the infinite variety of phenomena that characterize SLD persons.

Research Implications

Questions Raised by This Study

Do these SLD adolescents represent the SLD adolescent population? The present criteria used to determine eligibility for special education services often involve establishing a discrepancy between intellectual ability and academic achievement. This researcher collected data for discrepancy analyses, but could not determine how to account for the effects of previous education on academic achievement scores. Some achievement scores included in eligibility data were several years old. Students had attended both private and public schools, so some had never been considered for eligibility, while others had received services for as long as 14 years.

In addition, the standard score means for the distributions of the intellectual ability and academic achievement markers fell within the average range, i.e., within one standard deviation of the mean of 100 or between 85 and 115. The mean FSIQ score was 108 (*SD* = 10), which means that about two-thirds of the scores for this SLD sample fell between 98 and 118, a range both higher and narrower than that of the Wechsler norms sample (Wechsler, 1974, 1981). The full range of the SLD sample's scores was from 85 to 136.

The means of the standard scores for the nine measures of reading, arithmetic, and spelling achievement

also all fell within the average range, although there was some variability among the scores on the different measures (see Appendix D). These scores represent the academic achievement of these SLD students after a minimum of one semester and a maximum of six years of remedial and compensatory education in a school where the total curriculum is designed to meet their learning needs. In addition, some students may have received special education services for the learning disabled for as long as 14 years. The relationship of their educational programming and experiences to their academic achievement needs to be examined to determine the factors, in addition to higher than average IQ scores, which might contribute to this SLD sample's academic competence. Such a study might also clarify how representative this sample is of the population of SLD adolescents.

The group means for IQ and achievement markers also mask individual differences. Examination of individual sets of scores revealed the disparities in abilities typical of SLD students. However, these disparities disappeared when the group scores were compiled, making it appear that this was a group of average ability students with standard scores in the average range in reading, arithmetic, and spelling achievement.

How well this or any sample represents the SLD population will remain a question until these measurement

problems are resolved and until the SLD field agrees on a viable operational definition of SLD.

What characterizes socially competent SLD persons with attention-deficit disorder? Twenty-four students (42%) had medically diagnosed attention-deficit disorder, yet no differences in this variable showed between the high scorers and low scorers on the social competence measure. It is commonly accepted that persons with attention-deficit disorder often have interpersonal difficulties. Only 6 of the 24 fell in the low scorer category on the SCNF. Those 18 who were in the average or high scorer categories warrant closer examination to see what factors, if any, discriminate them from the low scorers.

What else is MEPS measuring besides means-ends problem-solving? The stories revealed far more than just means to solve interpersonal problems. They are rich sources of information about values and personality attributes, as well as about cognitive functions such as creativity, sequencing ability, and divergent/convergent thinking. They are especially rich samples of oral expressive ability, an area often neglected in the diagnostic/remedial process. The means-ends procedure may be useful in the diagnosis of problems with oral expression, by analyzing syntax and vocabulary usage and organization of ideas that is, if its methodological

problems can be resolved.

The Social Competence and Social Planning Process Relationship

The original impetus for this study was to discover factors explaining why some SLD adolescents experienced interpersonal problems. The researcher proposed that the three social planning processes, i.e., means-ends thinking, knowledge of social conventions, and social schematic ability, were related to each other and to the perceived social competence of SLD adolescents.

This study neither proved nor refuted the hypothesized relationships because, although the intercorrelations of social competence and social planning process scores were nonsignificant, the intercorrelations among the social planning process scores were significant. The social planning process intercorrelations and the analyses of high and low scores added to the validity of the behavioral planning control process construct (M. Ford, 1986). The study also added to the SLD data base, confirmed the variance in the social judgment construct (Kaufman, 1979), and added reliability data for the measures used.

The study uncovered or confirmed problems in the validity of the social planning process measures, as well as problems with scoring and administration. Several factors which affected means-ends thinking scores need further investigation, including the cognitive processing

and linguistic features of the task, the scoring procedures, the interview process, and SLD subjects' behavior and testing experience. Social competence investigators using M. Ford's (1982) measure need to examine its content validity, the cognitive processing involved in the task, situational specificity, and factors affecting nomination choices.

Future researchers should consider doing studies of social competence and social planning processing with normal learning and SLD adolescents. The groups should be small but larger than this sample, should be described and matched on the UCLA system of Descriptive and Substantive markers (Keogh et al., 1982) and should have had the opportunity to participate together in multiple school social settings. Perceived social competence should be examined within each group as well as within the population as a whole. Other factors to be considered when planning such a study include the cognitive demands of the tasks, item situational specificity, and the bases for perceptions of social competence. The results then should be validated by examining behavior in natural situations to see if perceptions of social competence are confirmed by social leadership in real-life situations.

Appendix A

THE SOCIAL COMPETENCE NOMINATION FORM

(M. Ford, 1982)

Directions and Protocols for the Present Study

PEER/SELF RESPONSE FORM

Directions to the examiner:

1. Be sure that each student has the following items:
   a. Booklet with students' pictures and names
   b. SCNF Peer/Self Response Booklet
   c. 2 pencils
2. Read the following instructions aloud to the students. (**Underlined directions on this page are not on the student's booklets.)

> You have two booklets on your desk. The one with the white cover contains photographs and names of the students. Do not open that one yet. The other one, with the colored cover, has some questions for you to answer. Open the cover of the colored booklet where you will see the words, "Directions to Student".

Read these directions to yourself as I read them aloud to you.

1. Write your name on the blank line at the top of this page. Do so now.

   (ALLOW TIME FOR THEM TO WRITE.)

   All of your answers will be kept completely confidential. No one else at the school will see them. Each person has a code number. The researchers will use these numbers, not your names, so even they won't know your choices.

2. In this questionnaire, there are six different social situations. You are to name students who you think would best be able to handle each situation.

   DO NOT NAME YOURSELF!.

3. To help you remember everyone, the white booklet has everyone's picture with his or her name. Open the white booklet and look at everyone's name and picture. Read through this list before you start. Then be sure to look at it again for each and every situation. You wouldn't want to leave anyone out.

Now, I will read through the Student Picture/Name Booklet. While I do, think about what you know about those people. I will read each situation aloud while you read it to yourself. For each situation, you will have three parts to complete. Look at numbers three, four and five on the directions and follow along as I read them to you.

4. First, you are to write the names of three students in

(Examiner, insert the appropriate grade/level group):

grades seven and eight

OR

grades nine and ten

OR

grades eleven and twelve.

who you think would best be able to handle each situation. DO NOT NAME YOURSELF!

5. Next, you are to name three students from the whole school who you think would best be able to handle each situation.

AGAIN, DO NOT NAME YOURSELF!

6. Lastly, circle the number between one and five which shows how well you think you could handle that situation. The higher the number,

the better you think you could handle that situation.

LET'S REVIEW THE DIRECTIONS FOR 4, 5, AND 6 ONCE MORE

(Examiner, repeat directions for 4, 5, & 6.)

Does everyone understand the three things to be done with each situation?

(Pause to answer questions.)

I will read aloud each situation and the questions which go with it while you read it to yourself. When I finish reading, I will wait for everyone to finish writing before reading the next situation. Put your pencil down when you are through, so I'll know when to continue. If you have problems, raise your hand and one of us will help you. Are there any questions?

(Pause to answer questions.)

Turn to the first story, which says, "Homework Situation" at the top of the page. I will now read the HOMEWORK situation. When I finish, I will wait for everyone to write their answers. If you need help, raise your hand. Because this is a research project, it is important that you do not talk to other students.

*Directions adapted from M. Ford's 1982 study.

STUDENT BOOKLET

The booklet used with grades seven and eight is included here. For grades nine and ten and for grades eleven and twelve, the references to grade levels were changed.

PEER/SELF RESPONSE FORM

NAME_____

DIRECTIONS:

1. Write your name on the blank line at the top of this page.
2. In this questionnaire, there are six different social situations. You are to name students who you think would best be able to handle each situation.

DO NOT NAME YOURSELF!

3. To help you remember everyone, the white booklet has everyone's picture with his or her name. Open the white booklet and look at everyone's name and picture. Read through this list before you start. Then be sure to look at it again for each and every situation. You do not want to leave anyone out.
4. First, you are to write the names of three students in grades seven and eight, who you think would best be able to handle each situation.

DO NOT NAME YOURSELF!

5. Next, you are to name three students from the whole school who you think would best be able to handle each situation.

AGAIN, DO NOT NAME YOURSELF!

6. Lastly, circle the number between 1 and 5 which shows how well you think you could handle that situation. The higher the number, the better you think you could handle that situation.

*Directions adapted from M. Ford's 1982 study.

HOMEWORK SITUATION

Everyone's complaining because this year all the teachers are assigning homework over Christmas vacation. Rather than just gripe about it, the students in your grade have gotten together and asked the teachers to listen to their side of the story. A group of teachers has agreed to talk with three students about their complaints at the next teachers' meeting.

Write the names of 3 students in seventh or eighth grades who you think could do the best job of getting across the students' point of view.

1)_____ 2) _____ 3) _____

The principal has agreed to meet with three students from the whole school to listen to the students' point of view. Who do you think could do the best job from the entire student body?

1) _____ 2) _____ 3) _____

How would you rate your ability to get across the students' point of view? 3 (Mark one blank.)

Poor----------Average----------Excellent

_____1 _____2 _____3 _____4 _____5

DOUBLE-DATE SITUATION

You're very happy because you've just gotten a date with someone you've liked for a long time. However, you have been asked to make it a double-date because your date has a cousin your age who has come to visit for the weekend. In fact, you've been asked to find someone who will go out with your date's cousin on a double-date. So, you try to think of someone who is easy to be around, good at making conversation, and smart enough to know when to leave you and your date alone.

Who in 7th or 8th grades would you want to have as your double-date?

1) _____ 2) _____ 3) _____

In fact, your date's cousin could be any age, so think of three people in the school who you would want to have as your double date.

1) _____ 2) _____ 3) _____

How would you rate yourself as a choice as a double-date? (Mark one.)

Poor----------Average----------Excellent

_____1 _____2 _____3 _____4 _____5

STUDENT VISITOR SITUATION

One of your school's best teachers has tragically died in an accident. The students in your grade have gotten together and decided to do something for the family. The class decides that three people should make a personal visit to the teacher's family. They will bring flowers and try to tell the family how sorry the students were to lose such a good teacher and a good friend.

Which 3 people in the 7th or 8th grades do you think would be good persons to make the visit to the teachers' family?

1) _____ 2) _____ 3) _____

If the group going to visit the teacher's family was to include three students from any grade level, who would you chose?

1) _____2)_____3)_____

How would you rate yourself as the person to visit the teacher's family?

Poor----------Average----------Excellent

_____1 _____2 _____3 _____4 _____5

VISITING PARENT SITUATION

One of your parents will be coming to school for a day-long visit as part of a new PTA program. This program is supposed to let parents know more about what kinds of classes their kids have. During the school day, your parent will go to classes similar to yours, but not to your actual classes. Since few parents know their way around the school, parents will be given a student escort to walk them from class to class, to explain what is going on and answer questions, and to eat lunch with them.

Who in 7th or 8th grades do you think would be a good person to show yours and other kids' parents around the school?

1)_____ 2) _____ 3) _____

Who from the whole school would be a good person to show yours and other kids' parents around the school?

1)_____ 2) _____ 3) _____

How would you rate your ability to show yours and other kids' parents around the school?

Poor----------Average----------Excellent

_____1 _____2 _____3 _____4 _____5

GROUP ASSIGNMENT SITUATION

Everyone in your grade has been given an assignment that's supposed to make studying American history more fun. For this assignment, groups of five to ten students must put together a skit which acts out some important event in American history. (For example, Paul Revere's ride or the Boston Tea Party.) Each group must have a director to organize and coordinate the group's efforts.

Who in 7th or 8th grades do you think could do the best job of getting your group together and getting everyone to do what they're supposed to do so that the skit will be a good one?

1) _____ 2)_____ 3) _____

Suppose that this was a school-wide project and it didn't matter what grade the person was in, who so you think could do the best job?

1)_____2) _____ 3) _____

How would you rate your ability to get your group together and to get everyone to do what they're supposed to do?

Poor----------Average----------Excellent

_____1 _____2 _____3 _____4 _____5

PEER COUNSELOR SITUATION

The teachers are trying to put together a new program where kids with problems can go to other students as well as to adults for help. These students would be called "peer counselors." The faculty have asked you and some other students for suggestions. They say they're looking for people who kids feel that they can really open up to with problems. They also want the peer counselors to be good listeners, and to really care about their classmates.

Who in 7th or 8th grades would you choose to be a peer counselor?

1) _____ 2) _____ 3) _____

From the whole school, who would you choose?

1) _____2) _____ 3) _____

How would you rate yourself as a peer counselor?

Poor----------Average----------Excellent

_____1 _____2 _____3 _____4 _____5

THANKS FOR YOUR HELP!

THE SOCIAL COMPETENCE NOMINATION FORM

TEACHER RESPONSE FORM

NAME OF PERSON COMPLETING THIS FORM _____

Directions to the teacher:

1. In this questionnaire, there are descriptions of six different social situations. You are to name students who you think would best be able to handle each situation. To help you remember the names, there is an alphabetical list by grade of everyone in in the school. Next to each name is a code number, which you will write instead of the person's name. Read through this list before you start. Then be sure to look at it again for each and every situation. You wouldn't want to leave anyone out. All of your answers will be kept completely confidential--no one else at the school will see them.
2. Write your name on the line at the top of this page.
3. Now you are to name three students in each grade that you teach who you think would best be able to handle each situation. Please write the code number from the list of student names on the blanks after each question. Be sure to check that you've copied the number correctly!
4. Next, you are to name three students from the whole school who you think would best be able to handle each situation. Again use the code numbers and be sure to check that you've copied the number correctly!

HOMEWORK SITUATION

Everyone's complaining because this year all the teachers are assigning homework over Christmas vacation. Rather than just gripe about it, the students have gotten together and asked the teachers to listen to their side of the story. A group of teachers has agreed to talk with students about their complaints at the next teachers' meeting.

Write the numbers for three students in each grade that you teach who you think could do the best job of getting across the students' point of view. Select three for each grade.

Grade 7	Grade 8	Grade 9
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
Grade 10	**Grade 11**	**Grade 12**
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____

The principal has agreed to meet with three students from the whole school to listen to the students' point of view. From the entire student body, who do you think could do the best job ?

1)_____ 2) _____ 3) _____

DOUBLE-DATE SITUATION

**Read this from the perspective of a student.

You're very happy because you've just gotten a date with someone you've liked for a long time. However, you have been asked to make it a double-date, because your date has a cousin your age who has come to visit for the weekend. In fact, you've been asked to find someone who will go out with your date's cousin on the double-date. So, you try to think of someone who is easy to be around, good at making conversation, and smart enough to know when to leave you and your date alone.

Who in each grade, which you teach, do you think would be chosen as a double-date? Select three for each grade.

Grade 7	Grade 8	Grade 9
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
Grade 10	**Grade 11**	**Grade 12**
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____

In fact, the date's cousin could be any age, so think of three people in the school who you think would be chosen as a double date. 1) _____ 2) _____ 3) _____

STUDENT VISITOR SITUATION

One of your school's best teachers has tragically died in an accident. The students have gotten together and decided to do something for the family. The class decides that three people should make a personal visit to the teacher's family. They will bring flowers and try to tell the family how sorry the students were to lose such a good teacher and a good friend.

In each grade which you teach, who do you think would be a good person to make the visit to the teacher's family? Select three for each grade.

Grade 7	Grade 8	Grade 9
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
Grade 10	**Grade 11**	**Grade 12**
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____

If the group going to visit the teacher's family was to include only three students from any grade level, who would chose?

1) _____ 2) _____ 3) _____

VISITING PARENT SITUATION

Parents will be coming to school for a day-long visit as part of a new PTA program. This program is supposed to let parents know more about what kinds of classes their kids have. During the school day, parents will go to classes. Since few parents know their way around the school, parents will be given a student escort to walk them from class to class, to explain what is going on and answer questions, and to eat lunch with them.

In the grades which you teach, who do you think would be a good person to show parents around the school? Select three for each grade.

Grade 7	Grade 8	Grade 9
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
Grade 10	**Grade 11**	**Grade 12**
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____

Who from the whole school would be a good person to show parents around the school?

1) _____ 2) _____ 3) _____

GROUP ASSIGNMENT SITUATION

Everyone has been given an assignment that's supposed to make studying American history more fun. For this assignment, groups of five to ten students must put together a skit which acts out some important event in American history. (For example, Paul Revere's ride or the Boston Tea Party.) Each group must have a director to organize and coordinate the group's efforts.

Who in the grades you teach could do the best job of getting a group together and getting everyone to what they're supposed to do so that the skit will be a good one? Select three for each grade.

Grade 7	Grade 8	Grade 9
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
Grade 10	**Grade 11**	**Grade 12**
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____

Suppose that this was a school-wide project and it didn't matter what grade the person was in, who do you think could do the best job?

1) _____ 2) _____ 3) _____

PEER COUNSELOR SITUATION

The faculty are trying to put together a new program where kids with problems can go to other students as well as to adults for help. These students would be called "peer counselors." The faculty have asked you and some students for suggestions. They say they're looking for people who kids feel that they can really open up to with problems. They also want the peer counselors to be good listeners, and to really care about their classmates.

Who in the grades you teach would you choose to be a peer counselor? Select three for each grade.

Grade 7	Grade 8	Grade 9
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____
Grade 10	**Grade 11**	**Grade 12**
1) _____	1) _____	1) _____
2) _____	2) _____	2) _____
3) _____	3) _____	3) _____

From the whole school, who would you choose?

1) _____ 2) _____ 3) _____

PLEASE DOUBLE CHECK - DID YOU USE NUMBERS INSTEAD OF NAMES!!!

THANKS FOR YOUR HELP!

THE SOCIAL COMPETENCE NOMINATION FORM

SCORING DIRECTIONS

1. PEER NOMINATION SCORES:

Each nomination earns one point. Tally the points earned for each situation and total them for the SCNF:P score. Each student could theoretically earn 78 or 79 points if all the students in his or her grade level group (20 in grades 7 - 8, 19 in grades 9 - 10, and 20 in grades 11 - 12) nominated that person for the grade level items in all six situations and if in addition, all the students in the sample (N = 59) nominated that person for the whole school items in all six situations.

2. TEACHER NOMINATION SCORES:

Each nomination earns one point. Tally the points earned for each situation and total them for the SCNF:T score. Theoretically, each student could earn a maximum of 40 teacher nominations per situation if he/she was nominated as the choice for grade and for the school as a whole and if he/she was taught by all 20 of the faculty.

3. SELF NOMINATIONS:

Write the number checked for each situation and tally them for the SCNF:S score. The maximum score per situation is 5.

4. TOTAL COMBINED RAW SCORE: Add the SCNF:P, SCNF:T, SCNF:S scores together for the SCNF:CRS score.

Appendix B

MEANS-ENDS PROBLEM SOLVING PROCEDURE

(Spivack et al., 1981)

*Instructions to examiner:

1. Ask the subject his/her name. Consult the student list for subject's code number. Mark the code number on a blank tape and insert tape in taperecorder. Turn on the taperecorder and state the subject's code number. Select the test booklet appropriate to the sex of the subject. Record the subject's code number on the test booklet.
2. Give the subject a copy of the Instructions to Subject. Read the directions to the subject. Ask the subject to repeat them in his/her own words so that you are sure that he/she understands the task.
3. Select the set of story cards appropriate to the sex of the subject. Give the subject the first story root. Ask him/her to read it with you as you read it aloud. Read the beginning and ending of the story root. Ask the subject to repeat the ending to insure understanding. Repeat this process until the subject understands the ending.
4. The only probe which is allowed is when the subject begins by listing discrete alternatives rather than telling a story. Should that occur, then redirect

him/her to tell "a story, like he/she were watching a movie--everything that happens from the time (repeat beginning) to the end (repeat end)" (Spivack et al., 1981, p. 4).

5. TURN ON TAPERECORDER! Even though responses are being taperecorded, write the subject's response verbatim on the test booklet. Pause the tape at the end of each story.
6. Repeat steps 2 through 5 for each item.
7. Vary the order of the items randomly for each subject.

* These directions have been adapted from those in Spivack et al.'s (1981) Stimuli and Scoring Procedures Supplement.

MEANS-ENDS PROBLEM SOLVING PROCEDURE*

George Spivack and Jerome J. Platt
Hahnemann Medical College and Hospital

SUBJECT'S CODE NUMBER _____

EXAMINER _____

SCORER _____

INSTRUCTIONS TO SUBJECT

IN THIS PROCEDURE, WE ARE INTERESTED IN YOUR IMAGINATION. YOU ARE TO MAKE UP SOME STORIES. FOR EACH STORY, YOU WILL BE TOLD THE BEGINNING OF THE STORY AND HOW THE STORY ENDS. YOUR JOB IS TO MAKE UP A STORY THAT CONNECTS THE BEGINNING THAT IS GIVEN YOU WITH THE ENDING GIVEN YOU. IN OTHER WORDS, YOU WILL MAKE UP THE MIDDLE OF THE STORY. TELL A COMPLETE STORY. INCLUDE EVERYTHING THAT HAPPENS BETWEEN THE BEGINNING AND THE END.

*This form was adapted from the one in the Stimuli and Scoring Procedures Supplement (Spivack et al., 1981).

STORY ROOTS

The form used in the study had one story root per page, so that the examiner could record the student's response verbatim. The following story roots were included.

1. One day while eating in a restaurant, Jim (Jane) saw a goodlooking girl he had never seen before. He was immediately attracted to her. The story ends when they get married. You begin when Jim first notices the girl in the restaurant.

2. Charles* (Cathy) had just moved in that day and didn't know anyone. Charles wanted to have friends in the neighborhood. The story ends with Charles having many good friends and feeling at home in the neighborhood. You begin the story with Charles in his room immediately after arriving in the neighborhood.

*Changed by researcher from Mr(s). C. to obtain adolescent perspective.

3. Sam (Susan) noticed that his friends seemed to be avoiding him. Sam wanted to have friends and to be liked. The story ends when Sam's friends like him again. You begin where he first notices his friends avoiding him.

4. One day Mike (Ann) was standing around with some other people when one of them said something very nasty to him. Mike got very mad. Mike got so mad he decided to get even with the other person. The story ends with Mike happy because he got even. Begin the story when Mike decided to get even.

Appendix C

THE NEW COMMUNITY SCHOOL

POLICY ON STUDENT ADMISSIONS

I. Purpose

A. The purpose of the admissions policy at The New Community School is directly related to the reasons for which the school was established. The goal of The New Community School is to provide a challenging academic program and intensive remediation for adolescents with specific learning disabilities. The curriculum assumes average to above average intellectual ability and at the same time makes relatively few assumptions concerning specific language skills.

II. Criteria

A. Students accepted at The New Community School are selected on the following criteria:

1. Average to above average intelligence (as measured by the Wechsler Scale for Intelligence -- Revised or WAIS). Exceptions would occur only when other testing or information implies a depression of performance on the Wechsler Scales. Unusual scatter of subtest scores and discrepancies between verbal and

non-verbal performance are often typical of the specific learning disabled student.

2. Specific language learning disability (i.e., specific difficulty in the use of the written symbol in reading, writing, spelling, and/or math computation).
3. Absence of significant or primary emotional-motivational difficulty that would prevent their learning, disrupt the learning of other students, or disrupt the educational program at the school. It is recognized, however, that secondary emotional difficulty frequently accompanies a specific learning disability and the school is very willing to work with a student whose emotional problems center on his learning disability.
4. Educational needs which are best met by our available academic and remedial programs and which are considered in the perspective of the best interest of that student and the students already in the school.

The purpose and and criteria for student admissions at The New Community School was excerpted from the policy adopted by the Board of Trustees on September 29, 1982.

Appendix D

Marker Variables Describing SLD Sample

I. Distribution of student characteristics using Descriptive Markers

A. Sex: 81.4% male and 18.6% female

B. Grade: grade 7 = 8.5%, grade 8 = 25.4%, grade 9 = 16.9%, grade 10 = 15.3%, grade 11 = 23.7%, grade 12 = 12.3%

D. Locale of residence: rural (12.3%), small towns (5.3%), suburban (52.6%), urban (29.8%) communities

E. Race/ethnicity: Asian American (0), Black (0), Caucasian (96.5%), Hispanic (0), North American Indian (0), other race or ethnic origin (3.5%)

F. Socioeconomic status: upper income level (24.6%), middle income level (66.7%), lower income level (9%)

G. Primary language spoken in the home: 100% English-speaking homes

H. Educational experience

1. 49.2% who repeated one or two grade levels
2. 21% who have attended 6 or more schools
3. 2.8 years average enrollment at TNCS, range of one semester to six years
4. 29.8% who have never attended public schools

5. 58.6% (of 53 respondents) who have been found eligible for special education services for the learning disabled
6. Duration of eligibility: 1 year to 14 years with a mean of 4 years
7. 3.3% who have been found eligible for speech/language services
8. None eligible for services for severely emotionally disturbed or mentally retarded

J. Physical and health status

1. 22.8% reported to wear glasses
2. 10.7% medically diagnosed as neurologically impaired
3. 23.7% medically diagnosed with chronic illness, e.g., allergies, asthma, kidney disease
4. 42.1% medically diagnosed with attention-deficit disorder
   a. 18.6% of those with attention-deficit disorder diagnosed hyperactive
   b. 27.1% on medication for attention-deficit disorder

II. Substantive Markers

A. Intellectual ability

1. Intellectual estimate: sample percent with FSIQs within the average range (78%), i.e.,

within one standard deviation of the FSIQ mean of 100, below the average range (0), and above the average range (22%)

2. Technique used to determine intellectual ability: Wechsler Intelligence Scales (Wechsler, 1974, 1981)
3. Assessed by licensed clinical psychologists, licensed professional counselors, and school psychologists
4. Time of assessment: within three years prior to April 22, 1988
5. Summary values for intellectual ability
   a. Full Scale IQ
      1) Mean = 108.09 (SD = 10.09)
      2) Range = 85 to 136
   b. Verbal IQ
      1) Mean = 107.67 (SD = 11.4)
      2) Range = 85 to 137
   c. Performance IQ
      1) Mean = 107.52 (SD = 12.37)
      2) Range = 85 to 135

B. Reading, arithmetic, and spelling achievement
   1. Assessed by TNCS faculty
   2. Time of assessment: Spring, 1988

3. Techniques used to assess achievement and resulting summary scores: mean, standard deviation, and range

   a. Measures of reading achievement

      1) Wide Range Achievement Test - Revised (WRAT-R) Level II, Reading subtest (Jastak & Wilkinson, 1984)

         a) Mean = 101.36 (SD = 13.72)

         b) Range = 64 to 131

      2) Gray Oral Reading Test - Revised (GORT) (Weiderholt & Bryant, 1986)

         a) Mean = 107.4 (SD = 16.12)

         b) Range = 75 to 132

      3) Iowa Silent Reading Tests (IOWA), Levels 1 and 2 (Farr, 1973)

         a) Mean = 104.25 (SD = 11.68)

         b) Range = 75 to 132

      4) Diagnostic Spelling Potential Test (DSPT), Word Recognition subtest (Arena, 1981)

         a) Mean = 99.85 (SD = 10.62)

         b) Range = 67 to 126

   b. Measures of arithmetic achievement

      1) Wide Range Achievement Test - Revised (WRAT-R) Level II, Arithmetic subtest (Jastak & Wilkinson, 1984)

a) Mean = 98 (SD = 12.2)

b) Range = 54 to 145

2) Stanford Diagnostic Math Test (SDMT), Blue Level (Beatty, Madden, Gardner, & Karlsen, 1976)

a) Mean = 105.6 (SD = 11.32) (n = 51)

b) Range = 80 to 129

3) KeyMath Diagnostic Arithmetic Test (KM) (Connolly, Nachtman, & Pritchett, 1976)

a) Mean = 8.3 (SD = 1.43) (n = 19)

b) Range = 3.7 to 9.5

c. Measures of spelling achievement

1) Wide Range Achievement Test - Revised (WRAT-R) Level II, Spelling subtest (Jastak & Wilkinson, 1984)

a) Mean = 88.34 (SD = 15.66)

b) Range = 65 to 126

2) Diagnostic Spelling Potential Test (DSPT), Spelling subtest (Arena, 1981)

a) Mean = 97.37 (SD = 12.96)

b) Range = 78 to 137

C. Behavioral and emotional markers

1. 28% referred for counseling or psychotherapy during the 1987 - 1988 school year

2. 23% involved in counseling or psychotherapy at the time of the study
3. Technique used to assess: parent questionnaire
4. By whom assessed: parents and professionals they consulted
5. Time of assessment: Spring, 1988

III. Background Markers

A. Time for the data collection: April 22, 1988 to June 10, 1988

B. Geographical location of study: Richmond, Virginia

IV. Topical Markers

A. Social competence marker: the combined raw score (SCNF:CRS) of teacher and peer nominations and self-ratings from the Social Competence Nomination Form (M. Ford, 1982)

1. Mean = 88.78 (SD = 61.19)
2. Range = 21 to 342

B. Social planning process markers

1. Means-ends thinking marker: the total means-ends score (MOT) from the MEANS-ENDS PROBLEM SOLVING PROCEDURE (Spivack et al., 1981)
   a. Mean = 15.83 (SD = 7.3)
   b. Range = 4 to 40

2. Knowledge of social conventions marker: the scaled score from the Comprehension subtest of the Wechsler Intelligence Scales (Wechsler, 1974, 1981)
   a. Mean = 12.57 (SD = 2.73)
   b. Range = 6 to 18
3. Social schematic ability marker: the scaled score from the Picture Arrangement subtest of the Wechsler Intelligence Scales (Wechsler, 1974, 1981)
   a. Mean = 12.16 (SD = 2.82)
   b. Range = 4 to 18

Appendix E

Parent Questionnaire

Child's Name:_____ Code #_____

Name of person completing form_____

1. Which one of the following BEST describes where you live?

   _____Rural (sparsely settled, largely agricultural)

   _____Small Town (population center, not a city)

   _____Suburban (residential area outlying a city)

   _____Urban (densely settled, nonagricultural)

2. Which one of the following BEST describes your child's race/ethnicity?

   _____Asian American

   _____Black

   _____Caucasian (not Hispanic)

   _____Hispanic

   _____Native American Indian

   _____Other (specify)_____

3. What is the primary language spoken in your home?

   _____English-speaking home

   _____Bilingual home (what language?)_____

   _____Non-English-speaking home (what language?)

   _____

4. How many times has your child repeated a grade level in school beginning with kindergarten?

_____

5. How many schools has your child attended beginning with his/her kindergarten year?

_____

6. For how long has your child been eligible for special education services by your local school division?

_____

7. For how long has your child been enrolled in private schools for the learning disabled?

_____

8. Is your child currently supposed to wear glasses?

_____Yes _____No

9. Is your child currently classified by your school division as

_____visually impaired

_____hearing impaired

_____orthopedically impaired

_____multihandicapped

_____seriously emotionally disturbed

_____having specific learning disabilities

_____speech and language impaired

_____other health impaired

10. Has your child been medically diagnosed as neurologically impaired?

_____Yes _____No

11. Has your child been medically diagnosed as having a chronic illness, such as asthma, allergies, seizures, diabetes?

_____Yes If so, which?_____

_____No

12. Has your child been referred for counseling/psychotherapy during this school year?

_____Yes _____No

13. Is your child presently involved in counseling or psychotherapy?

_____Yes _____No

14. Has your child been medically diagnosed as having attention deficit disorder?

_____No _____Yes

If yes, with hyperactivity? _____Yes _____No

15. Is your child presently on medication for attention deficit disorder?

_____Yes _____No

Appendix F

Consent Forms

PARENTAL PERMISSION FORM

Please check off each statement with which you agree.

_____I agree to allow Robin Barton access to my child's permanent record file at The New Community School and for her to use the data therein as long as my child's and my identity are protected by the use of a numerical code.

_____If my child has not had the appropriate Wechsler Intelligence Scale administered within three years of the start of the study, I give Robin Barton permission to administer the test with no cost to me. I understand that those results will be used for research purposes only.

_____I am willing for my child to complete The Social Competence Nomination Form.

_____I understand that my child will miss one class period in order to participate in the interview aspect of the study. During that time the Means-Ends Problem-Solving Procedure will be administered.

_____I understand that my child's name will not be used as part of the study or in reporting the findings.

_____I understand that the school will be given a copy of Robin Barton's dissertation, which I can read to learn about the results of the study.

_____I understand that participation is voluntary and that I may withdraw my child at any time with no penalty to me.

PLEASE FILL IN YOUR CHILD'S NAME IN ONE OF THE FOLLOWING STATEMENTS:

I give my permission for my child,_____,
to participate in Robin S. Barton's research project dealing with the social problem-solving skills of learning disabled adolescents during the Spring semester.

I DO NOT give my permission for my child,_____,
to participate in Robin S. Barton's research project dealing with the social problem-solving skills of learning disabled adolescents during the Spring semester.

PARENT'S NAME_____
[PLEASE PRINT]

PARENT'S SIGNATURE_____

DATE SIGNED:_____

Project Director: Robin S. Barton, LPC,
Doctoral Candidate
School of Education
College of William and Mary

Sponsoring Faculty Member: Dr. Charles Matthews
School of Education
College of William and Mary
Phone: 253-4434

STUDENT PERMISSION FORM

Please check off each statement with which you agree:

_____I agree to allow Robin Barton to read my permanent record file at The New Community School and to use the data therein as long as my identity is protected by the use of a numerical code instead of my name.

_____If I have not had the Wechsler Adult Intelligence Scale - Revised within three years of the start of the study, I give Robin Barton permission to administer the test with no cost to me. I understand that the results will be used for research purposes only.

_____I am willing to complete the Social Competence Nomination Form.

_____I understand that I will miss one class period in order to participate in the Means-Ends Problem-Solving Procedure.

_____I understand that my name will in no way be used as part of the study or in reporting the findings.

_____I understand that the school will be given a copy of Robin Barton's dissertation.

_____I understand that participation is voluntary and that I may withdraw at any time with no penalty to me.

PLEASE FILL IN ONE OF THE FOLLOWING STATEMENTS:

I ,_____,agree to participate in Robin S. Barton's research project dealing with the social problem-solving skills of learning disabled adolescents.

OR

I ,_____, DO NOT agree, to participate in Robin S. Barton's research project dealing with the social problem-solving skills of learning disabled adolescents.

Student's NAME_____
[PLEASE PRINT]

SIGNATURE_____

DATE SIGNED:_____

Project Director: Robin S. Barton, LPC
Doctoral Candidate
School of Education
College of William and Mary

Sponsoring Faculty Member: Dr. Charles Matthews
School of Education
College of William and Mary
Phone: 253-4434

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Abstract

A STUDY OF THE RELATIONSHIP OF SOCIAL PLANNING PROCESSES TO THE SOCIAL COMPETENCE OF LEARNING DISABLED ADOLESCENTS

Roberta Swithers Barton, Ed.D. The College of William and Mary in Virginia, 1989. 198pp. Chairman: Charles O. Matthews, Ph.D.

This study addressed three questions: (1) Are social planning processes, i.e., means-ends thinking, knowledge of social conventions, and social schematic ability, related to each other? (2) Are they related to the perceived social competence of learning disabled (SLD) adolescents? (3) Are they determinants of differences in perceived social competence?

Martin Ford's (1982) Social Competence Nomination Form (SCNF) assessed the social competence of 59 SLD adolescents from The New Community School in Richmond, Virginia. Extreme groups of SCNF scorers were compared on three social planning skill measures: Means-Ends Problem-Solving Procedure (MEPS) (Spivack, Shure & Platt, 1981) and the Comprehension and Picture Arrangement subtests from the Wechsler Intelligence Tests (Wechsler, 1974, 1981). The sample was described with the UCLA system of marker variables (Keogh, Major-Kingsley, Omori-Gordon, & Reid, 1982).

The hypothesized relationships were neither proved nor refuted, because although intercorrelations among the three sets of social planning process scores were significant, the correlations between the social competence scores and social planning process scores were not. However, the significant intercorrelations and the analyses of high and low scores added to the validity of Ford's (1986) social competence theory. The study also added to the SLD data base, confirmed the variance in the Kaufman's (1979) social judgment construct, and added to reliability data.

Needing further investigation are the MEPS's cognitive and linguistic features, its scoring, and the effects of the interview process. The SCNF'S cognitive demands, item situational specificity, and bases for perceptions of social competence need closer examination. In addition, studies need to be done with both normal learning and SLD adolescents. Samples should be small, but larger than this one. Also, subjects should have had the opportunity to participate together in multiple school social settings. The results then should be validated by examining behavior in natural situations to see if perceptions of social competence are confirmed by social leadership in real-life situations.