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The Effect of Special Education on the Internalization of Locus of Control in Learning Disabled Children

Rae L. Offutt

THE EFFECT OF SPECIAL EDUCATION ON THE INTERNALIZATION OF LOCUS OF CONTROL IN LEARNING DISABLED CHILDREN

by
Rae L. Offutt

Bachelor of Arts, Hamline University, 1962

Master of Science, Moorhead State University, 1981

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This Dissertation submitted by Rae L. Offutt in partial fulfillment of the requirements for the Degree of Doctor of Education from the University of North Dakota is hereby approved by the Faculty Advisory Committee under whom the work has been done.

Myrna R. Olson
(Chairperson)

Sheldon S. Schmidt

Bill Beckwith

This Dissertation meets the standards for appearance and conforms to the style and format requirements of the Graduate School of the University of North Dakota, and is hereby approved.

Dean of the Graduate School

Permission

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DEDICATION

This study is dedicated to my son, Jeff, a young man who has proven that a learning disability is conquerable and an internal locus of control achievable.

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The trick, Fletcher, is that we are trying to overcome our limitations in order, patiently. We don't tackle flying through rock until a little later in the program.

from Jonathan Livingston Seagull

ABSTRACT

An external locus of control has been determined to be detrimental to personal development in the dominant American culture. This study examines what effect participation in learning disability programs over extended time periods has on the internalization of locus of control.

Design of the Study

The subjects of this study were 165 students, 83 learning disabled and 82 normal, from five school districts located in two states in the Upper Midwest. The students were distributed in sixth, ninth, and twelfth grades. The learning disabled students needed to have experienced a minimum number of years (two years for sixth graders, four years for ninth graders, and five years for twelfth graders) in learning disability programs with direct, individualized services to be included in the study. The normal students were matched with the learning disabled for town, school, grade, and sex; and they had never experienced any type of special education. All participants completed the Nowicki-Strickland Locus of Control Scale for Children. Data were statistically treated for significance.

Conclusions

The overall findings in the study were significant and demonstrate a difference in locus of control between learning disabled and normal children. Learning disabled students showed a significant movement toward externality from sixth to ninth grades and another significant shift toward internality as they moved toward twelfth grade. Learning disability students attribute causation of events more often to luck, fate, chance, or significant others (external locus of control), while normal students attribute causation to themselves (internal locus of control).

Recommendations

Educators and parents need to be aware of the potentially negative factor of perpetuating an external locus of control orientation when dealing with learning disabled students. A locus of control instrument should be included in initial diagnostic assessments of children referred for evaluation to assess the child's internality-externality. Special and regular educators, parents, and administrators should avoid overly-zealous praise and overly-protective treatment of learning disabled students which perpetuate an external orientation, and instead strive to promote increased independence and autonomy.

CHAPTER I

INTRODUCTION

Background of the Study

The following study examines the effect of special education services over time on the internalization of locus of control in learning disabled children. The enactment of the Education for All Handicapped Children Act of 1975 (PL 94-142) has mandated special education services to the handicapped for the last ten years. This law states:

> It is the purpose of this Act to assure that all handicapped children have available to them . . . a free appropriate public education and related services designed to meet their unique needs, to assure that the rights of handicapped children and their parents or guardians are protected, to assist states and localities to provide for the education of all handicapped children, and to assess and assure the effectiveness of efforts to educate handicapped children. (Sec. 601 [3][C]) (A Free Appropriate Public Education, 1972)

This study is concerned with the segment of the handicapped population known as the learning disabled. Johnson and Myklebust (1967) discussed the development of this category of the handicapped in Learning

Disabilities: Educational Principles and Practices. They made it clear that criteria for definitive differentiation among handicaps were essential because

> in those having a psychoneurological learning disability, it is the fact of adequate motor ability, average to high intelligence, adequate hearing and vision, and adequate emotional adjustment together with a deficiency in learning that constitutes the basis for homogeneity. This group of children is homogeneous in that they have [sic] integrity emotionally, motorically, sensorially and intellectually but, despite these integrities, they cannot learn in the usual or normal manner. This definition, therefore, includes two fundamental presumptions: generalized integrity and a deficiency in learning. It is these which are cardinal to the homogeneity of the group and must be established when making a differential diagnosis or when classifying for educational purposes. (p. 9)

Modifications, research, conflict, and change have assaulted this definition but it has remained basic to the concept of a learning disability.

Since 1977, the first year of compiled records, the population of learning disabled students receiving special education services in the United States has risen from

733,827 (U.S. Department of Health, Education and Welfare, 1978) to 1.6 million in 1985 (Staff, 1985), a 119 percent increase. Many of these students' involvement with special education services continues over years of schooling.

Developing concurrently but separately from special education laws was interest in the concept of locus of control based on the social learning theory developed by Rotter (1954, 1966). Locus of control is the belief which a person holds to be the source of his/her reinforcements.

> The role of reinforcement, reward, or gratification is universally recognized by students of human nature as a crucial one in the acquisition and performance of skills and knowledge. However, an event regarded by some persons as a reward or reinforcement may be differently perceived and reacted to by others. One of the determinants of this reaction is the degree to which the individual perceives that the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions. The effect of a reinforcement following some behavior on the part of a human subject, in other words, is not a simple stamping-in process but depends upon whether or

> not the person perceives a causal relationship between his own behavior and the reward. A perception of causal relationship need not be all or none but can vary in degree. In our culture, when a reinforcement is perceived by the subject as following some action of his own, but not being entirely contingent upon his action, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics we have termed this belief in internal control. (Rotter, 1966, p. 24)

Thus, locus of control refers to the extent to which individuals view their successes or failures as either contingent upon or independent of their own behaviors (McGhee & Crandall, 1968).

McDonald (1973, cited in Snyder, 1981) reported that research on locus of control has been conducted in a wide array of situations: birth control practices (Keller, 1970; Bauman & Undry, 1972); rioting (Berkowitz, 1972; Ransford, 1968); conformity (Odell, 1959); automobile

seatbelts (Bridge, 1971); psychopathology (Smith, 1971); minority group status (Rotter, 1963; Lefcourt, 1966); and, related to this research, reaction to disability (Lipp et al., 1968; Land & Wiesburg, 1965; Kodle, 1971; McDonald & Hall, 1969, 1971) and achievement behavior (Coleman et al., 1966; McGhee & Crandall, 1968; Harrison, 1968; Nowicki & Roundtree, 1971; Eppes, 1970; Bartel, 1969; and Nowicki & Strickland, 1973). McDonald concluded that all of the research indicated the same thing: people are handicapped by an external locus of control orientation.

Coleman et al. (1966) in a study of nearly half a million children from the United States found that a belief in destiny was a major determinant in school achievement and concluded that locus of control was more strongly related to achievement than all other school factors combined.

The two areas of interest, special education and locus of control, came together in the late 1970's with researchers' concern over "learned helplessness." Bendell, Tollefson, and Fine (1980) wrote, "a review of the literature in the field of learning disabilities indicates a growing awareness of the importance of affective and motivational factors in the instruction of learning disabled children" (p. 32). Pearl, Bryan, and Donahue (1980) stated, "past research suggests that LD children

do not have as strong perceptions of internal control as do non-disabled children" (p. 4). Teachers were specifically enjoined to deal with this concern when Bryan and Pearl (1979) requested that "intervention programs include teaching the learning disabled to cope with failure" (p. 223). Lawrence and Winschel (1975) stated, "We contend that internality in locus of control must become a conscious goal in the education of handicapped children" (p. 484). They stated their belief that the development of internality appears to be fundamental to education in a free society, that it suggests responsibility, self-reliance, and the development of each individual as an effective agent of his or her own destiny.

To determine the effects that locus of control beliefs have on behavior, a device was needed that would distinguish among people who hold differing expectations regarding their capacity to exert an influence on the world around them. Various testing instruments have been developed in an attempt to measure locus of control. Early instruments of Phares, James, Bialer, Battle and Rotter, and Crandall, Crandall, and Katkovsky were all considered inadequate for testing children by Stephen Nowicki and Bonnie Strickland (1973). In 1973 they developed the Nowicki-Strickland Locus of Control Scale for Children, a test now widely used and accepted as a reliable and valid instrument.

Statement of the Problem

An external locus of control has been determined to be detrimental to personal development in the dominant American culture. Learning disabled students have been identified as a high-risk group for sustaining an external locus of control (Pearl et al., 1980). Attention has been focused on this concern. The topic of this investigation is to determine the effect of special education on the internalization of locus of control in learning disabled students.

Procedure

The subjects for this study were 83 learning disabled students distributed among the sixth, ninth, and twelfth grades, and 82 normal students matched for town, school, grade, and sex. The learning disabled students met a minimum time requirement in special education to quality as participants. Sixth graders must have completed a minimum of two years, ninth graders a minimum of four years, and twelfth graders a minimum of five years in learning disability programs that required an Individualized Educational Program and direct, individualized instruction for each student. Normal students were limited to those who had never received special education services of any kind. Special education services included programs for students who have visual,

hearing, or speech impairments, are gifted, mentally retarded, or learning disabled. The subjects were drawn from five school districts in two upper midwest states. The 165 students each completed the Nowicki-Strickland Locus of Control Scale for Children. All data were analyzed according to a 2-way analysis of variance and Tukey's (a) HSD test (1953). Individual Nowicki-Strickland Locus of Control Test for Children questions were analyzed by the chi square method with Yates correction.

Hypotheses

The present study was designed to consider the following hypotheses:

Hypothesis I: There will be no difference in mean scores of locus of control between the learning disabled students and the normal students.

Hypothesis II: There will be no difference in mean scores of locus of control within the learning disabled students and within the normal students across three grade levels (6, 9, and 12).

Hypothesis III: There will be no difference in mean scores of locus of control between learning disabled students and normal students separately at different grade levels.

Limitations of the Study

1. Locus of control is limited to the general concept elicited by the Nowicki-Strickland Locus of Control Scale for Children--internality versus externality.

2. All learning disabled students had the test read aloud to them to prevent misunderstanding of questions due to reading problems, while normal children could elect to read the test themselves but were offered the opportunity to have it read to them.

Definition of Terms

1. Learning disability (LD). Public Law 94-142 incorporated the following definition of learning disability as written by the National Advisory Council on Handicapped Children:

> Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or, do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of

> visual, hearing, or motor handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage. (USOE, 1977, p. 65083)

2. Nowicki-Strickland Locus of Control Scale for Children. This is a paper-and-pencil measure consisting of forty questions that are answered either "Yes" or "No." This test is designed to be used with students in grades three through twelve to establish if their locus of control is internal or external. The lower the test score, the more internal is the locus of control.

3. Internal locus of control. Internal locus of control is the individual's belief that he or she is responsible for the outcome of his or her behaviors.

4. External locus of control. External locus of control is the individual's belief that luck, chance, powerful others, circumstances, or other factors over which he or she has no control are responsible for his or her success or failures.

5. Special education. A school district's educational program provided to meet special, individual needs of students determined to be educationally atypical; i.e., visually, hearing or speech impaired, gifted, mentally retarded, or learning disabled.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This chapter evolved from background reading in locus of control. Areas reviewed include theoretical background, test development, research, achievement, and attempts at altering locus of control.

Theoretical Background Relating to Locus of Control

Heider's Attribution Theory

The concept of locus of control developed from attribution theory and social learning theory. Fritz Heider, acknowledged by most social psychologists as the founder of the attributional approach to psychology (Harvey, Iches, & Kidd, 1976) developed his ideas from a background as an artist interested in perception and his studies of interpersonal relations under the stressful conditions of post World War I Europe.

For nearly four decades, Heider's work received little attention from psychologists who were emphasizing such topics as psychophysics and stimulus-response learning (Harvey et al.). His ideas were attacked as "so obvious" as to preclude scientific investigation. However, upon the

publication of his book The Psychology of Interpersonal Relations in 1958, social psychologists began to take his work seriously and understand Heider's contention that "'scientific' psychology could learn much from the conceptual explication of 'common-sense' psychology" (Harvey et al., p. 1). Heider's attributional approach assumed that

> people are motivated to seek meaning in their own behavior as well as in the world about them. For this reason, attributional processes are important in the individual's attempts to understand and interpret the possible causes for his own actions, feelings, and attitudes . . . Attributions often are motivated by a person's desire to maintain control in an uncertain and unpredictable world. (Harvey et al., p. 19)

In a lecture given in 1975, Heider stated:

> Until quite recently, maybe ten or fifteen years ago, what was called social psychology dealt almost exclusively with problems involving groups, and only rarely was the second big class of problems considered--those that treat interpersonal relations, relations between one person and one or very few other persons. At present, this second field is growing very rapidly and has been accepted as another part of social psychology. (Gorlitz, 1980, p. 10)

Within this second field was the work of Julian Rotter.

Rotter's Social Learning Theory

Julian Rotter (1954, 1966) formulated a social learning theory emphasizing that this was "a SOCIAL learning theory because it stresses the fact that the major or basic modes of behaving are learned in social situations and are inextricably fused with needs requiring for their satisfaction the mediation of other persons" (Rotter, 1954, p. 84). This theory suggested that a person's actions are based on one's values, one's expectations, and the situations in which one finds oneself. Rotter (1966) writes:

> The role of reinforcement, reward, or gratification is universally recognized by students of human nature as a crucial one in the acquisition and performance of skills and knowledge. However, an event regarded by some persons as a reward or reinforcement may be differently perceived and reacted to by others. One of the determinants of this reaction is the degree to which the individual perceives that the reward follows from or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside himself and may occur independently of his own actions. (p. 1)

This concept is termed locus of control. Rotter believed that when a person perceives reinforcement as following

some action of his or her own, but not entirely contingent upon that action, then in our culture, it is perceived as being the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the forces surrounding him or her. When an event is interpreted by an individual in this way, it is said that he or she has an external locus of control. If the person perceives that an event is contingent upon his or her own behavior or his or her own relatively permanent characteristics, it is said that he or she has an internal locus of control (Rotter, 1966).

Rotter speculated that an external locus of control orientation may preserve self-esteem in the face of failure or a sense of powerlessness. He considered locus of control to be a generalized expectancy operating across many situations relating to whether or not individuals possess or lack power over what happens to them. He felt that the locus of control variable is important to the understanding of the nature of learning processes in varied learning situations and that whether control is perceived as internal or external appears to affect a person's outlook concerning life in general (Rotter, 1954).

Test Development Concerning Locus of Control

In the decade following Rotter's work with locus of control theory an enormous volume of research on this

concept appeared (London & Exner, 1978). Over 1000 studies had been conducted; several reviews, bibliographies, and analyses of the concept had been published; and books covering the theoretical background and general literature related to internal versus external control completed. Lefcourt (1972) noted that there were at least nine different tests of locus of control, as well as revisions of some in use. Tests had been developed by Battle and Rotter, 1963; Bialer, 1961; Crandall, Katkovsky, and Crandall, 1965; Dean, 1961; Dies, 1968; Gozali and Bialer, 1968; Harrison, 1968; Rotter, 1966; and Nowicki and Strickland, in press at the time of Lefcourt's article.

The first attempt to measure the internal-external control dimension as a personality variable in social learning theory was reported in 1955 by Phares in his doctoral dissertation. He had designed a 13-item scale to measure a general attitude or personality characteristic of attributing the occurrence of reinforcements to chance rather than oneself. James, in 1957, revised the Phares scale as did Holden in 1958 and Simmons in 1959. Rotter developed his Internal-External Control Scale in 1966. These various devices involved the use of several different measurement techniques including forced-choice, Likert-type scales, true-false scales, projective devices, and performance measures drawn from Level-of-Aspiration tasks.

All demonstrated some efficacy in predicting different criteria related to the locus-of-control dimension (Lefcourt, 1966).

Locus of control tests designed to be used with children included an orally administered true-false scale developed by Bialer in 1961. Battle and Rotter developed their children's Picture Test of Internal-External Control in 1963. Their test presented a series of cartoons and asked the child "what he would say" about lifelike situations which involved attribution of responsibility. Crandall, Katkovsky, and Crandall's Intellectual Achievement Responsibility Questionnaire, 1965, was aimed at assessing children's beliefs in reinforcements in intellectual-achievement situations (Livdahl, 1983).

Nowicki and Strickland (1973) concluded that each of these tests fell short in one way or another. The instruments of Phares, James, and one of Rotter's scales were to be used with adults. Of the instruments designed to be used with children, Nowicki and Strickland concluded that Bialer's scale suffered from reliability and format inadequacies. Battle and Rotter's measure was difficult to administer to large groups and there was incomplete reliability information available. Crandall et al. had a scale constructed for the academic rather than general situation with a forced choice format which would perhaps be difficult for younger and duller subjects.

Nowicki and Strickland (1973) concluded that there was "a clear need for a reliable instrument for researchers to use to study the effects of a generalized locus of control orientation of a child's behavior" (p. 149). They hypothesized the following relationships as necessary for a measure to be considered an appropriate assessment of locus of control:

1. Scores will become more internal with increasing age.

2. Scores will be related to achievement with internals achieving more than externals.

3. Scores will not be significantly related to measures of social desirability or intelligence.

They then developed the Nowicki-Strickland Locus of Control Scale for Children. Test results using this instrument showed that these three relationships were upheld (Champagne, 1981). Robinson, Shaver, and MacDonald (1973) reported, "The Nowicki-Strickland scale is the best measure of locus of control as a generalized expectancy presently available for use with children, as indicated by information on the scale's internal consistency, reliability, test-retest reliability, and convergent and discriminant validity" (p. 185, cited in Snyder, 1981). The Nowicki-Strickland Locus of Control Scale for Children continues to be used as the best available test for locus of control research.

Research on Locus of Control

A vast amount of research has been conducted on the subject of locus of control. Research topics have varied widely from birth control practices to rioting and from reaction to a disability to smoking habits. Through this research, data have been obtained which indicate that internal scorers differ from external scorers in a variety of ways. Williams and Nickels (1969) reported that research conducted through 1968 indicated they differed in preferences for skill versus chance activities (Schneider, 1968), perceptual threshold variation (Phares, 1962), delay in decision-making (Rotter & Mulray, 1965), latent learning performance (Getter, 1966), unusual shifts in expectancy (Battle & Rotter, 1963; James, 1957), memory for various kinds of information (Seeman, 1963), tendencies to forget failure experiences (Efran, 1963), degrees of conformity (Crowne & Liverant, 1963), resistance to subtle influence (Gore, 1962), attempts to control the environment (Liverand & Scodel, 1960), attitudes toward information and social influence (Seeman & Evans, 1962), seeking of relevant information (Davis & Phares, 1967), and achievement (Butterfield, 1964; Crandall, Katkovsky, & Crandall, 1965). They further reported that Hersch and Scheibe (1967) found that internal scorers as compared to external scorers were higher in the Dominance, Tolerance, Capacity for Status,

Good Impression, Social Presence, Sociability, Psychological Mindedness, Intellectual Efficiency, Self-Control, Self-Acceptance, Well-being, Responsibility, Achievement via Conformance, and Achievement via Independence scales of the California Psychological Inventory. Also, internal scorers were found to be higher on the Adjective Check List scales of Defensiveness, Self-Confidence, Achievement, Dominance, Endurance, and Order, but lower on scales of Succorance and Abasement. Self-descriptors checked significantly more often by internal subjects included clever, efficient, egotistical, enthusiastic, independent, self-confident, ambitious, assertive, boastful, conceited, conscientious, deliberate, persevering, clear-thinking, dependable, determined, hardheaded, industrious, ingenious, insightful, organized, reasonable, and stubborn. Hersch and Scheibe (cited in Williams & Nickels, 1969) reported that internally oriented persons were more likely to describe themselves as active, striving, achieving, powerful, independent, and effective while externally oriented persons checked only one adjective significantly often--that of "self-pitying."

Adjustment

Research has been conducted concerning adjustment problems and locus of control. Feather (1967) attributed greater anxiety and neuroticism to external scorers.

Tolor and Reznikoff (1967) found that externals revealed a greater amount of overt "death anxiety" than internals. Additional areas of investigation concerning adjustment have been delinquency, accident and suicide-proneness, mental disorders, and alcoholism.

Delinquency

Parrott and Strongman (1984) stated that their review of pertinent literature revealed that in general, adolescents classified as delinquent have been found to be more external. Their study with delinquents showed that delinquents tend to assume less personal responsibility for success in an academic setting, but do take responsibility for failure.

Ducette and Wolk (1972) found that externally oriented adolescent girls were more extreme or deviant in their behavior, specifically in risk-taking, atypical shifts in aspirations, and persistence. They suggest that this type of behavior pattern, particularly in an academic setting, results in few success experiences. Few experiences of realistic feedback on behavior, necessary for the acquisition of personal control, would be possible with these extreme and deviant patterns of behavior.

Phares (1973) discovered that an external orientation for success may persist with delinquents and serve a defensive function. The delinquent uses a belief in

external control beyond personal influence as a rationalization for expected failure.

Accident/Suicide

Williams and Nickels (1969) hypothesized from a review of the literature on accident and suicide proneness and on perception of reinforcement as internally or externally controlled that accident-prone individuals may be internally oriented and suicide-prone individuals may be externally oriented. Their research findings concluded that both groups are externally oriented. Accident-prone people seemed to obtain satisfaction or thrill in minor injuries, in being in pain, or in being hurt by others. They may appear to be independent, nonconforming, brazen, and reckless individuals. However, Williams and Nickels state

> Although the outward appearance of accident-prone persons may suggest the self-control and self-acceptance of internally oriented individuals, the inner dynamics . . . may reveal that their impressive demeanor is actually a superficial denial of the urge to regress, to be passive, and to engage in escape, guilt, and revenge fantasies. (p. 491)

They quote LeShal as stating, "The ego of the accident prone refuses to accept responsibility for his actions . . . At the same time, there is no feeling of ego-alien

'driving' toward accidents. They simply 'happen,' and 'fate' or 'luck' seems to be against the person" (cited in Williams & Nickels, 1969, p. 491).

Concerning the suicide-prone individual, Williams and Nickels cited the 1957 research of Weiss on externality-suicide and quote him as stating:

> Many suicidal attempts have at least in part the character of a gamble with death, a sort of Russian roulette, the outcome of which depends to some extent on chance. The attempts are consciously or unconsciously arranged in such a manner that the probability may vary from almost certain survival to almost certain death and "fate"--or at least some force external to the conscious choice of the person--is compelled in some perhaps magical way to make the final decision. (p. 21)

Williams and Nickels concluded that if accident-proneness and suicide-proneness can be labeled as maladjustment, then they might be expected to correlate positively with internal-external scores, which themselves have been found to relate directly to measures of maladjustment by Cromwell, Rosenthal, Shakow, and Kahn in 1961.

Mental Disorders

Traub (1982) reviewed research concerned with locus of control and various types of maladjustment. He reported that external individuals report more anxiety and depression, are less assertive, think more irrationally, and manifest a higher incidence of schizophrenia than do internal persons.

Harrow and Ferrante (1969) investigated mental patients' locus of control and found schizophrenics to be more external than nonschizophrenics. After six weeks of clinical treatment, depressives became more internally oriented. Schizophrenics and patients with manic disorders showed a nonsignificant trend toward increased externality.

Alcoholism

Wright and Obitz (1984) studied alcoholics and nonalcoholics with similar socioeconomic and demographic characteristics. They found that alcoholics attributed to themselves less personal control over future life events than did nonalcoholics, a more external locus of control. Alcoholics also attributed less control to themselves than they attributed to other people regardless of whether life events were positive or negative. The authors state, "it is conceivable that alcoholics attribute their self-perceived inability to control events to characteristics other than alcoholism. For example, they may feel that

factors such as luck . . . are to blame for their lack of control" (p. 142). Alcoholics who attributed to themselves less control than they attributed to others had a significantly lower treatment completion rate than alcoholics who perceived themselves to have more control than they attributed to others.

Circumstantial Events

Socioeconomic status and race. Parrott and Strongman (1984) have reported on studies concerning locus of control and socioeconomic status and race. They report that an external orientation appears to be characteristic of racial groups such as Black American and Mexican American in studies conducted by Scott and Phelan, 1967; Battle and Rotter, 1963; Gurin, Gurin, Lao, and Beattie, 1967; and Garcia and Levenson, 1975 and has been indicated as characteristic of lower socioeconomic levels by Battle and Rotter, 1963.

MacDonald (1971) also reported that Blacks have been found to be more external than whites and cited a study by Graves in 1961 showing Native Americans to be more external than whites. However, he cites a study done in 1967 by Shaw and Uhl which found no differences between racial groups within the low socioeconomic level.

Hsieh, Shybut, and Lotsop (1969) investigated the relationship of locus of control to ethnic background by

comparing Anglo-Americans, American-born Chinese, and Hong Kong-born Chinese, Anglo-Americans were significantly more internally oriented than Hong Kong-born Chinese and American-born Chinese. American-born Chinese were significantly more internally oriented than Hong Kong-born Chinese.

Champagne (1981) investigated locus of control differences between Native American and non-Native American elementary school children using the Nowicki-Strickland Locus of Control Scale for Children. She found that Native American students are clearly more external. The difference between the two groups in external-internal orientation decreased over time, but Native American females remained far more external than non-Native American females.

Studies have demonstrated control orientation differences by social class alone. Lefcourt (1966) states:

> In all of the reported ethnic studies, groups whose social position is one of minimal power either by class or race tend to score higher in the external-control direction. Within the racial groupings class interacts so that the double handicap of lower-class and "lower-caste" seems to produce persons with the highest expectancy of external control. Perhaps the apathy and what is often described as lower-class lack

of motivation to achieve may be explained as a result of the disbelief that effort pays off. (p. 212)

Birth order. Birth order has been studied with contradictory results. Crandall, Katkovsky, and Crandall (1965) found a weak tendency for firstborns to be more internal among older children, but no relationship among younger children. In contrast, results showing firstborns to be significantly more external were obtained by Eisenman and Platt (1968), especially among males. Crandall et al. (1965) observed that firstborn children are often placed in positions of responsibility for household affairs, their own conduct, and younger siblings, and come to observe the consequences of their own actions. Later born children are often told that an older sibling "will take care of you," allowing them to assume less responsibility for their own actions. Several studies have indicated no effect of birth order but a tendency for children from one-child families to be more external (Newhouse, 1974).

Sex. The National Center for Education Statistics (1977) reported that sex differences on locus of control have been documented as females being more internal than males for younger age groups (grades 3-8) with the difference in later years either nonexistent or reversed. Crandall et al. (1965) in a study on locus of control with

923 elementary and high school students from diverse communities found no significant differences between males and females. Chapman and Boersma (1979) found no significant effects for sex. Rich (1981) cites Nowicki (1976) concerning sex when he states, "Sex of the children was not analyzed separately since sex has no reported effect on locus of control" (p. 245).

Parents' attitudes. Lefcourt (1972) reported that parents' expressed attitudes toward child rearing are not as related to children's locus of control as are the children's perception of parental behavior. Overall findings indicate that "internal control expectancies are related to parental protectiveness, nurturance and the tendencies to be approving and nonrejecting" (p. 22). Davis and Phares (1969) found that parents of internals were judged as being less rejecting and more accepting, exercising less hostile control, and having greater positive involvement than parents of externals. In a study by Wickerson and Nowicki (1976) mothers of internal children reported intentionally training for independence. Coopersmith (1967) in The Antecedents of Self-Esteem states that first and foremost in contributing to the development of self-esteem is the amount of respectful, accepting, and concerned treatment that an individual receives from the

significant others in his/her life. He states, "We value ourselves as we are valued, and this applies to extensions of ourselves as well as the more centrally experienced aspects of our self-images" (p. 37).

Nowicki and Segal (1973) found that perceived parental nurturance is related to internality; internality is found where there is love and support from parents. Interestingly, they also discovered that "For females, internality was associated with greater perceived paternal affection, physical contact, trust and security and greater perceived maternal physical contact, trust and security. For males, internality was associated with greater perceived maternal affection only" (p. 35). Both males and females perceived their parents as having somewhat the same locus of control orientation as their own.

Personality. Studies have established that an external locus of control results in less desirable personality traits than does an internal locus of control. Lefcourt (1972) states that resistance to influence has been a continuous interest for the social sciences. Psychological investigations concerning persuasibility, authoritarianism, conformity, and obedience attempt to understand how and why people come to lose their personal freedom. Lefcourt asserts, "Persons who view themselves as responsible for their own fates should be more cautious

about what they accept from others than should those who do not perceive themselves to be in active control of their fate" (p. 2). Lefcourt reported on two studies: Odell (1959) who found subjects with a high degree of externality showing a greater likelihood of conformity and Crowne and Liverant (1963) who reported that externals tend to have less confidence in their own judgment abilities.

Coopersmith (1967) stated that his research provides clear indications that "the individual with high self-esteem feels capable of coping with adversity and competent enough to achieve success, and that the individual with low self-esteem feels helpless, vulnerable, and inadequate" (p. 261). For example, MacDonald and Hall (1969) found that, in contrast to internals, the externally oriented find physical disabilities more threatening. The authors hypothesized that externals may fear that disabilities would be viewed negatively by those upon whom they depend. Their data supported this hypothesis.

Bialer (1961), Mischel (1961), and Zytkoskee, Strickland, and Watson (1971) investigated deferred gratification. Bialer found that the more internal the subject, the more likely he or she was to prefer a delayed larger reinforcement to a smaller immediate reinforcement. The other researchers obtained similar results.

Lefcourt (1972) reported that the externally oriented person who has in repeated investigations been described as more anxious, lower in self-esteem, and higher in maladjustment than internal subjects is also more likely to be ruminative about his failures. This, in turn, "helps to maintain his own self-perception as an inactive pawn of fate" (p. 22).

Achievement and Locus of Control

General Studies

The concept of locus of control and achievement would seem to be logically linked. To achieve in school requires an expectation of internal control, persisting despite possible failure, postponing immediate gratification, and organizing one's time and effort (Champagne, 1981). If a student believes the control of events is outside himself or herself, he or she is unlikely to develop these important attributes. Research has generally supported the hypothesis that a student who feels that he or she is responsible for his or her actions strives for higher academic performance.

Crandall, Katkovsky, and Preston (1962) conducted, at the Fel's Research Institute, one of the earliest studies linking locus of control with achievement. Their study attempted to predict achievement behaviors by time-sampling children's play activities, intellectual activities, and

the intensity of striving during these activities. They concluded that girls' expectations of intellectual success were either negatively or nonsignificantly related to their intellectual behaviors while boys' stated expectations of intellectual success were, for the most part, positively associated with their intellectual achievement efforts.

McGhee and Crandall (1968) conducted two studies in which they investigated academic achievement in relation to locus of control with over 1,000 students. They hypothesized:

> It seems probable that the degree to which a child believes that his own behavior is responsible for his academic successes and failures will affect his instrumental effort to attain these goals.
>
> The child who feels that success or failure is a consequence of his own behavior should show greater initiative in seeking intellectual rewards and greater effort and persistence in intellectual tasks and situations. Put conversely, the external child, who feels that his rewards and punishments are given him at the whim or design of other people or circumstances, has little reason to exert effort in an attempt to increase the probability of obtaining reward and avoiding punishment. (p. 93)

Studies using grade point average as an achievement measure and comparing that measure with internal-external scores have been conducted by Lessing (1969), Harrison (1968), and Nowicki and Roundtree (1971). All found that an internal locus of control generally accompanies various aspects of children's successful academic achievement. Lessing found that a sense of personal control predicted grade-point average even when IQ scores were partialled out.

Joe (1971) in his review of the internal-external construct as a personality variable reported on several studies concerning achievement. He states:

> As a logical extension of the concept of internal-external control, Rotter (1966) hypothesized that internals would show more overt striving for achievement than externals who feel that they have little control over their rewards and punishments. Earlier studies have shown that internals spent more time in intellectual activities, exhibited more intense interest in academic pursuits, and scored higher on intelligence tests and other academic tests than did externals (Chance, 1965; Crandall, Katkovsky, & Crandall, 1965; Crandall, Katkovsky, & Preston, 1962). (p. 627)

Weiner et al. (1971) studied the causes of success and failure. In the summary of their research they describe individuals either high or low in achievement motivation. These descriptions correlate with other research done on locus of control.

A. Individuals high in resultant achievement motivation

1. Approach achievement-related activities (mediated by the attribution of success to high ability and effort, thus producing heightened reward or pride in accomplishment)
2. Persist in the face of failure (mediated by the ascription of failure to a lack of effort, which is presumed to be modifiable)
3. Select tasks of intermediate difficulty (mediated by an interaction between task difficulty, performance outcome, and causal ascription, which results in tasks of intermediate difficulty yielding the most self-evaluative feedback)
4. Perform with relatively great vigor (mediated by the belief that outcome is determined by effort, and learned in part because performance at intermediate difficulty task is greatly influenced by effort).

B. Individuals low in resultant achievement motivation

1. Do not approach achievement-related activities (mediated by the relative attribution of success to external rather than internal factors and the exclusion of effort as a causal factor, thus resulting in modulated reward for goal attainment)
2. Quit in the face of failure (mediated by the belief that failure is caused by lack of ability, which presumably is unchangeable)
3. Select easy or difficult tasks (because such tasks yield minimal self-evaluative feedback)
4. Perform with relatively little vigor (mediated by the belief that outcome is comparatively independent of effort, and learned in part because performance at very hard or very easy tasks is relatively little influenced by effort). (p. 111)

Gold (1968) found in her research that "A strong belief in ability to determine one's own reinforcements appears to be a prerequisite for the development of need to achieve" (p. 983). This concept was further researched by Holloway and Clark (1976) in their study of locus of control and achievement. They stated that internals

achieve at higher levels than externals in courses where a contract is required. The internals contract for, and ultimately receive, higher grades, and they exhibit more persistence and initiative in seeking achievement goals.

Davis and Phares (1967) in a study concerned with social influence situations concluded that "individuals with a generalized expectancy that reinforcement is contingent upon their own behavior tend to actively engage in information-seeking to a greater degree than individuals who do not hold such a generalized expectancy" (pp. 556-557). They found externals to place a lower value on the rewards which result from attempts to acquire information in skill situations and thus to seek less information than internals.

Nielsen and Long (1981) attempted to determine whether adolescents' locus of control scores were related to their reading achievement. Ninety students from the highest English classes and 120 students from the lowest English classes of one high school were administered the Nowicki-Strickland Internal-External scale. The average grade equivalent reading levels for students in the highest classes was 13.5 (college) and in the least advanced classes was 7.2. The study showed that advanced readers had significantly higher internal locus of control scores than the poor readers. The researchers state, "Although

adolescents' locus of control attitudes are clearly not the only factors influencing their reading abilities, a relationship apparently exists which warrants teachers' consideration" (p. 341).

Eldridge (1981) reported similar results among the 138 fourth grade students in her study. A statistically significant negative correlation was found between locus of control and reading achievement. Lower (more internal) locus of control scores were significantly related to higher reading achievement scores. Higher (more external) locus of control scores were significantly related to lower reading achievement scores.

Previous to this type of research academic achievement was most commonly attributed to level of intelligence (McClelland, Atkinson, Clark, & Lowell, 1953). It is apparent from these studies that achievement is complex and that locus of control is one contributing factor.

Studies with Learning Disabled Students

Fewer studies exist investigating the relationship between locus of control and achievement of learning disabled children. Generally, research confirms that the learning disabled child's more external orientation does affect achievement and motivation to achieve. Students' willingness to generate the effort required to succeed in school and their feelings about success and failure in a

school setting are determined, in part, by how they interpret the causes of their own academic successes and failures (Tollefson et al., 1982). Such willingness is unlikely if a child has doubts about his or her potential.

Further affecting the willingness of learning disabled students to strive may be their parents' lack of support. Owen, Adams, Forrest, Stolz, and Fisher (1971) found that parents of learning disabled children tended to express less affection toward their LD children and put more pressure on them than siblings. Hilliard and Roth (1969) studied mothers of underachieving high school students and found them to be less accepting and more rejecting of their children than mothers of children who achieved normally. Chapman and Boersma (1979) reported a likelihood that LD parents will experience frustrations and disappointments similar to those experienced by parents of children with other handicapping conditions. They predicted that such attitudes will cause interactions with their children to be more negative. They further reported that parents' expectations of future academic success found that "children tended to work harder when their parents expected more, and relaxed when their parents expected less" (p. 252). DeCharms (1968) states: "Expectation carries with it the connotation of prediction. If I expect an event to occur, I am implicitly predicting it" (p. 77).

Chapman and Boersma speculate that parents of learning disabled children will bring their achievement expectations into line with their children's actual school performance, thus lowering academic expectations.

Swanson (1981) administered the Nowicki-Strickland Locus of Control Scale for Children and the Peabody Individual Achievement Test to 48 learning disabled boys. His findings were consistent with others in which children who perceived a relationship between their own behavior and resulting consequences obtained higher achievement scores. "Age-related support was also found for the assumption that externals under conditions of extended failure experiences (e.g., school) demonstrate decrements in performance. Locus of control effects are most pronounced on older learning-disabled children's achievement" (p. 142).

A research study conducted by Pearl, Bryan, and Donahue (1980) had the unique design of identifying children in a parochial school having no learning disability program whose characteristics conformed to the federal guidelines for determining learning disabilities. In other words, had they been enrolled in a public school they would have been classified as learning disabled. The researchers felt that "this procedure had the important advantage of allowing an assessment of children who were not subject to the additional influence of the learning

disabilities label" (p. 4). Seventy-seven underachievers were compared to a control group of 109 students reported by teachers as achieving in the average to above average range. The results supported past research indicating that learning disabled children have lower perceptions of internal control over outcomes than nondisabled children. A second study using the same subjects was conducted to assess children's attributions for success and failure experiences in reading, puzzles, and social situations. The children were asked in structured interviews to note the importance of effort, ability, task difficulty, and luck. The second study concluded that, compared to their classmates, underachieving children were less likely to think that their failures occurred because of a lack of trying.

Pearl (1982) replicated the previous study using a group of labeled learning disabled children to research what effect the actual labeling might have. Results of the subsequent study indicated that "the pessimistic beliefs about the causes of their successes and failures that were held by the under-achieving children in the Pearl et al. (1980) study are also held by formally labeled learning disabled children" (p. 175).

Locus of control and reading achievement was investigated by Rich (1981) using the Nowicki-Strickland

Locus of Control Scale for Children and Boning's Specific Skills Series. The research tentatively supported two conclusions:

1. Educationally handicapped children, regardless of locus of control, perform better on low-level (rote-recall) questions than on high-level questions.
2. Internally controlled educationally handicapped children outperform their external counterparts on high-level (analysis and synthesis) questions. These conclusions suggest that educationally handicapped children particularly those who are externally controlled, are "stimulus bound," that is concrete, convergent and compartmentalized in their responses to reading questions. (p. 247)

Hallahan, Gajar, Cohen, and Tarver (1978) found within their research on selective attention and locus of control that LD subjects showed significantly lower ability to recall central information than normal subjects but did not differ significantly from normals on incidental recall. They also found that the LD child's external locus of control pervades a broad range of beliefs rather than being specific to academic situations.

Boersma and Chapman (1981) investigated academic self-concept and academic self-expectations in 162 learning

disabled children in grades 3 to 6. They found that LD children accept a similar degree of responsibility for their failures as normally achieving children, but a comparative inability to take credit for their successes. They further report:

> If, as the findings suggest, LD children view successful school outcomes as only partly contingent upon effort and ability, while at the same time viewing failures as a result of lack of effort and ability, then it is possible that these children may eventually "give up" on themselves and quit trying. Under these circumstances, LD children will likely develop strong doubts about their abilities to successfully complete academic tasks. (p. 355)

Despite all of the LD children being within the normal range of ability, their self-perceptions of ability in reading, spelling, mathematics, and academic abilities in general were significantly lower than normally achieving children. They also expected to perform less well in the future in these areas. Therefore, the results of this study indicate that by grade 3, LD children have already developed lower self-perceptions of ability and lower expectations for future academic success. Bryan and Pearl (1979) state that these maladaptive beliefs increase over time and that parents and teachers hold even more negative

expectations for these children than the children hold for themselves. They further question whether teachers and parents experience "learned helplessness" vis a vis learning disabled children.

> If parents and teachers come to believe that they are unable to help the learning disabled, it is unlikely that they will expend the effort to do so, and they may provide feedback to the child which is destructive to that child's acquisition of feeling of mastery. (p. 224)

Altering Locus of Control

Can an external locus of control be internalized? The overwhelming evidence indicating the negative dimensions associated with an external orientation would seem to make this change highly desirable. Researchers have investigated this question with encouraging results. Encouragement is given for attempting the task by Lawrence and Winschel (1975) when they state, "We contend that internality in locus of control must become a conscious goal in the education of handicapped children" (p. 484).

The learning disabled students' external orientation manifests itself most significantly for achievement in the belief that they are responsible for failure but not for success (Boersma & Chapman, 1981; Dudley-Maring, Snider, & Tarver, 1982; Thomas & Pashley, 1982; Pearl, 1982). When

they do take responsibility for failure they are more likely to blame their lack of ability than their lack of effort (Dweck & Goetz, 1978). Pearl (1982) states that:

> . . . successes and failures do not always mean to learning disabled children what they mean to other children. LD children do not necessarily interpret successes as reflecting something positive about themselves, and failures are not necessarily viewed as something that can be overcome with effort. (p. 176)

This attitude has been called "learned helplessness." Thomas and Pashley (1982) characterized children with a learned helplessness syndrome as anxious and unwilling to attempt tasks at appropriate ability levels, easily frustrated, and quick to give up in more difficult problem solving. They further reported that the basis of learned helplessness is said to be the loss of ability to perceive a connection between one's action and desired outcomes. This perception may be a conclusion such as, "Nothing I do will make a difference." This acceptance of responsibility for failure but not for success is described by Dudley-Maring et al. (1982) as "the worst possible attribution pattern for the failing child trying to achieve positive self-esteem, as it likely exacerbates the effects of failure" (p. 310). But as DeCharms (1968) states,

"Personal knowledge is not fixed . . . but is constantly changing" (p. 265) and is made up of a system of beliefs which are alterable.

In the experiments focusing on techniques or strategies attempting to prevent or overcome learned helplessness, social learning theory has provided direction (Thomas & Pashley, 1982). Early efforts by Dweck (1975), Chapin and Dyck (1976), and Bugental, Whalen, and Henker (1977), attempting to manipulate children's attributions, were all completed in one-to-one experimental or tutorial settings.

Thomas and Pashley (1982) were the first to attempt attribution training in a classroom setting. A total of 162 children in classes for specific learning difficulties and 36 teachers participated in a five-week attribution training program. One experimental group received training in a success-only context, another with mildly frustrating material, and a third treatment group served as a control. Training procedures involved teacher modeling, student rehearsal of self-statements and effort attributions, and teacher reinforcement for student self-statements. Learning disabled students displayed lower persistence, lower perceptions of ability, and helpless learning styles compared to average students during pretraining evaluations. The attribution training resulted in

significant increase in task persistence, but no changes were noted in achievement attribution. The authors concluded, "The program results were encouraging in demonstrating that self-talk procedures based on retraining attributional style can be a practical classroom teaching strategy for developing task persistence and frustration tolerance" (p. 143).

Bendell et al. (1980) have researched the importance of matching locus of control orientation to teaching styles in planning learning experiences for learning disabled adolescents. Their work with 50 learning disabled boys on spelling tasks revealed that those students who were external on locus of control orientation increased their achievement in a highly structured situation with immediate and fairly constant reinforcements which included study suggestions from teachers. Internal pupils' performance was significantly better under lowly structured learning methods. These authors point out that not determining locus of control orientation and structuring an academic program accordingly can be deleterious.

Pascarella and Pflaum (1981) similarly promote measuring children's attributions for their success or failure in the classroom and attempting to match these with appropriate instructional strategies. They studied error correction methods in reading instruction. They found that

external students benefited more from a condition in which the teacher determined the correctness of their responses while internal students benefited more when they were encouraged to determine their own correctness of responses.

Nielsen and Long (1981) made specific suggestions for retraining. They recommend behavioral counseling, goal setting, immediate reinforcement, and contingency contracts as succeeding in helping externally oriented students improve academically and attain a more internal orientation. Their suggestions cited numerous research projects which had utilized these methods. Their other suggestions included Glasser's reality therapy (Mink, 1976); values clarification (Yeargan, 1978); a combination of rational emotive therapy, reality therapy, and transactional analysis (Mink, 1976); peer tutoring (Chandler, 1975); outdoor survival skills programs (Hunt & Hardt, 1969; Nowicki & Barnes, 1972); bibliotherapy (Pehazur & Wheeler, 1971); changing a high school from a closed to an open campus (Rosen, 1977); and joining community action projects (Gillis & Jessor, 1970). They also report on Murray and Staebler's (1974) study which found that students taught by teachers who themselves possess an internal locus of control become more internal.

Research reveals that sensitivity and care must be given to decisions concerning placement outside regular

classrooms. Special placement is not always warranted nor beneficial. Weener (1981) makes a strong case for carefully assessing school placement. He reviewed 47 studies which compared normal and learning disabled children. He found that the amount of variability of performance within LD and normal groups was similar and that the average difference between the means of normal and LD groups was less than .75 standard deviations, or about one-sixth the range of performance which existed within either group. The large variability within both LD and normal groups, the relatively small difference between LD and normal groups, and the large degree of overlap between normal and LD groups argue that separating children into LD and regular classroom groups does little to reduce variability within the classroom. Beck, Lindsey, and Frith (1981) reported no differences in academic performance between those children in special classes and those in regular classes citing lowered expectations for performance as among the causal factors. Their research also suggested that for the population in their study, self-contained special education classes not only failed to have significant impact on academics but possibly contributed to a significant lowering of IQ scores.

Hisama (1976) suggested that when developing a program for learning disabled children, the teacher first should

know what kind of locus of control the child has. He continued:

> In case of the externally-oriented child in particular, it is very likely that he is regarded as a "lazy" child since he is easily "turned off" under failure conditions. Unless the teacher understands basic concepts and mechanisms of lack of control, there is little hope that the child's achievement motivation will improve. His "laziness" will result in frustration for the teacher, which in turn will aggravate the situation. It will create a vicious cycle between the teacher and child. Also, enlightening the teacher with regard to achievement motivation appears to be of importance, especially in relation to the current trend of mainstreaming in education. The aforementioned vicious cycle situation may occur in the regular class, particularly when the external child is returned to the regular class.
>
> Helping the child change his locus of control from external to internal direction can be accomplished by systematically providing him with success experiences on educational tasks and leading him to realize that events are mainly the results of his own actions, not outside forces such as fate, chance, or whims of other persons. (p. 392)

Systematically providing success experiences may, however, not lead LD students to realize they are in control. Lepper and Greene (1978) in The Hidden Costs of Reward wrote that reward can have adverse effects on task performance and intrinsic motivation. Lawrence and Winschel (1975) have pointed out that the indiscriminant and overzealous use of praise, common in the education of the handicapped, may appear to such children as largely unrelated to effort and accomplishment and attributed instead to luck or the actions of powerful others, such as the teacher. They state, "This interpretation on the part of the child tends to promote externality and is incompatible with the internalized responsibility for achievement required in the less protective environment of regular classrooms" (p. 485).

Hisama's suggestion for providing success experiences is an echo of Strickland (cited in Lawrence & Winschel, 1975) when he states:

> If a belief in internal control of reinforcement is related to mastery of behaviors, then it would seem important to emerse the child in success experiences over which he has some control with the hope that he might move toward a more internal orientation. (p. 3)

Lawrence and Winschel, however, spoke of the attempt among educators to be supportive of the handicapped as

"molly-coddling" and accused educators of creating environments where praise is unrelated to accomplishment.

Lefcourt pointed out in 1961 that persons who attempt to overcome their difficulties have higher internal control orientations and that success in coping with difficulties will change a person in the direction of more internal control orientation (cited in MacDonald, 1971). Perhaps what is needed is not an easier environment with which the child must cope, but the development of a stronger and more resiliant child who is able to cope with reality.

Summary

Chapter II has presented a review of literature relevant to the topic of locus of control. Five major areas reviewed were: theoretical background, test development, research, achievement, and altering locus of control.

The concept of locus of control developed from attribution theory and social learning theory. Fritz Heider and Julian Rotter developed concepts leading to a theory involving how an individual perceives events. If a person believes that much of what happens can be attributed to luck, chance, fate, or powerful others, he or she is said to have an external locus of control. If a person believes that events are contingent upon his or her own

behavior or own personal characteristics, he or she is said to have an internal locus of control.

Among those developing instruments in an effort to measure locus of control were Phares; James; Crandall, Katkovsky, and Crandall; Bialer; Battle; and Rotter. Nowicki and Strickland concluded that none of the instruments were adequate for use with children and in 1973 developed their own. The Nowicki-Strickland Locus of Control Scale for Children is reported to be the best instrument available for locus of control research.

Research on locus of control has covered a vast array of topics, and an external locus of control has been found to have generally negative implications. People who are delinquents, accident or suicide prone, mentally disturbed, or alcoholic have a more external orientation. An external locus of control appears to be characteristic of minority groups and lower socioeconomic levels.

Birth order studies have had contradictory results concerning internal or external orientation while studies on sex now conclude that a child's sex has no reported effect on locus of control. Parental influence has been studied and overall findings indicated that parental protectiveness, nurturance, love, approving not rejecting behavior, and positive involvement produces internally oriented children.

Studies have established that an external locus of control results in less desirable personality traits concerning persuasibility, authoritarianism, conformity, obedience, confidence, and ability to cope with adversity. The more external a person is the less he or she is able to delay gratification and the more anxious, lower in self-esteem, and higher in maladjustment he or she is.

Academic achievement and locus of control research has speculated that the degree to which a child believes his own actions cause success or failure will affect the amount of effort made to attain goals. Studies have confirmed that an internal locus of control generally accompanies successful academic achievement. Research shows that a sense of personal control predicts grade-point average. Students with an internal locus of control perceive the relationship between studying, grades, and learning; spend more time studying; and express greater achievement needs. Also, their reading abilities are higher than students with an external locus of control orientation.

Studies with learning disabled students generally confirm that their more external orientation does affect achievement and motivation to achieve. Also, parents of LD children have been found to express less affection for, put more pressure on, and have lower achievement

expectations of their LD children than their normal children which possibly negatively influences striving and academic success. Researchers have consistently identified a pattern whereby learning disabled children take responsibility for failure but not for success.

Studies conducted which investigate attempts to internalize an external locus of control orientation have had encouraging results. Matching a child's locus of control with appropriate instructional strategies, values clarification, peer tutoring, and bibliotherapy have been among the techniques investigated. Systematically providing LD students with success experiences, especially through overzealous praise, may actually promote externality rather than internalize locus of control since the students are aware that the praise is often not warranted. It is important to teach students strategies for overcoming their difficulties which in turn results in a more internalized locus of control.

CHAPTER III

DESIGN OF THE STUDY

Introduction

This chapter will explain the procedures undertaken in this study. Topics to be discussed are: the subjects, description of the research instrument, research methodology, and statistical technique.

The Subjects

The subjects of this study were 165 students (83 learning disabled and 82 normal) from five school districts located in two states in the Upper Midwest. The students were distributed in sixth, ninth, and twelfth grades. Eighty-three of the subjects had been identified as learning disabled by their school district criteria. The school district criteria for all districts met the federal guidelines as outlined in Public Law 94-142. To qualify for this study, the learning disabled students met the following criteria: sixth graders had each experienced a minimum of two years of special education, ninth graders had each experienced a minimum of four years of special education, and twelfth graders had each experienced a minimum of five years of special education. All students had Individualized Educational Programs written for each

year of special education and all had received direct, individualized instruction. A control group of 82 normal students was matched for town, school, grade, and sex. None of these students had received any type of special education services. Parental permission for testing was obtained for each student.

Description of Research Instrument

The Nowicki-Strickland Locus of Control Scale for Children (see Appendix A) is a paper-and-pencil measure consisting of forty questions that are answered either "Yes" or "No" by placing a mark next to the question. Scores can range from 0 to 40. Lower scores are interpreted as more internal in locus of control, higher scores as more external.

Test Construction

Nowicki and Strickland (1973) reported that their test, constructed and published in 1969, originally consisted of 102 items constructed on the basis of Rotter's definition of the internal-external control of reinforcement situations, such as affiliation, achievement, and dependency, across interpersonal and motivational areas. School teachers were consultants in the construction of items with a fifth grade readability level as a goal.

Nine clinical psychologists were then given Rotter's description of the locus of control dimensions and were asked to answer the 102-item test in an external direction. Items on which there was not complete agreement were eliminated. The preliminary test form then consisted of 59 items.

The 59-item form of the test was then given to 152 third through ninth grade students. Item analysis was computed in an attempt to make the scale more homogeneous and to examine the discriminative performance of the items. Those results, along with pupil and teacher comments, lead to dropping an additional 19 questions.

The 40-item scale was then administered to 1,017 elementary and secondary students in four communities bordering a large metropolitan school system in the South. Intelligence test scores of the subjects ranged from 101 to 106 as measured by Otis-Lennon scales. Parents' occupations at all socioeconomic levels, except the very highest, were well represented with lower levels somewhat over represented. Subjects were assured that their opinions would be kept confidential and were told the test was examining attitudes and opinions of different aged students. The test was read aloud to the students. This research study demonstrated that the scores did internalize as the students progressed through the grades. Mean scores

for males ranged from 17.97 in the third grade to 11.38 in the twelfth grade. For females, scores ranged from 17.38 in third grade to 12.37 in twelfth grade.

Scoring Procedures

The Nowicki-Strickland Locus of Control Scale for Children is scored by totaling the number of items answered in an externally controlled direction. Students scoring more externally, i.e. with higher scores, are those who have a greater belief in outside forces controlling their reinforcement. External answers are noted on the questionnaire in Appendix A.

Reliability

Nowicki and Strickland (1973) reported that estimates of internal consistency using the split-half method, corrected by the Spearman-Brown formula, are r = .63 (for grades 3, 4, 5); r = .68 (for grades 6, 7, 8); r = 74 (for grades 9, 10, 11); and r = .81 (for grade 12). The authors state that these reliabilities are satisfactory in light of the fact that the items are not arranged according to difficulty. Since the test is additive and the items are not comparable, the split-half reliabilities tend to underestimate the true internal consistency of the scale.

Test-retest reliabilities were sampled six weeks apart at three grade levels. Reliabilities were .63 for the

third grade, .66 for the seventh grade, and .71 for the tenth grade.

Construct Validity

Nowicki and Strickland (1973) reported data showing moderate relations between other measures of locus of control and their scale. Crandall, Katkovsky, and Crandall's (1965) Intellectual Achievement Responsibility Scale showed a significant correlation with a sample of third and seventh graders. They noted a significant correlation with the Bialer-Cromwell scale which conceptualizes success and failure. Also, the relationship between the Rotter and the Nowicki-Strickland adult scales was significant in two studies with college students. Other studies conducted across a diverse range of populations led Nowicki and Strickland to the statement that "the results are clearly supportive of the utility and validity of the new instrument, which appears to be related to a variety of behaviors" (1973, p. 153).

Research Methodology

Subject Selection

The learning disabled students from grades 6, 9, and 12 were identified as meeting the minimum eligibility requirements of this study by their learning disability teachers' review of their records. Minimum eligibility

requirements were special education services, including an Individualized Educational Program and direct, individualized instruction of two years for sixth graders, four years for ninth graders, and five years for twelfth graders. After the identification of these groups, normal students were matched for town, school, grade, and sex for inclusion in the study. Normal students were included in the sample only if they had never received any type of special education.

Testing Format

The items of the Nowicki-Strickland Locus of Control Scale for Children were read to the learning disabled students by their learning disabilities teachers. Normal students were sampled through a letter sent to their parents. If parent and child agreed to participate in the study, the parent explained and supervised the test. All subjects were told that they could decline to participate. All subjects were instructed to check "Yes" or "No" in answer to the questions. The data were computer scored at the Moorhead State University Computer Center.

Hypotheses

This testing attempted to investigate three hypotheses:

Hypothesis I: There will be no difference in mean scores of locus of control between the learning disabled students and the normal students.

Hypothesis II: There will be no difference in mean scores of locus of control within the learning disabled students and within the normal students across three grade levels (6, 9, and 12).

Hypothesis III: There will be no difference in mean scores of locus of control between learning disabled students and normal students separately at different grade levels.

Statistical Technique

The data were analyzed using a two-way analysis of variance procedure and Tukey's (a) HSD test (1953). Tukey's test can be given as

$$C = \frac{\bar{Y}_L - \bar{Y}_N}{\sqrt{MS_W \left(\frac{1}{n_L} + \frac{1}{n_N}\right)}} .$$

This test was used to establish where significant variation occurred by making all pairwise comparisons among means. Answers to each of the 40 Nowicki-Strickland Locus of Control Scale for Children questions were analyzed for significance using a chi square test with a Yates correction.

CHAPTER IV

RESEARCH RESULTS AND DISCUSSION

Introduction

The present study was designed to investigate the effect of special education services over time on the internalization of locus of control (attributing causation to self rather than luck, fate, chance, or significant others) in learning disabled children. This chapter includes the results of the statistical analysis of the data relating to the hypotheses, a presentation of statistically significant questions from the instrument used, and a listing of non-significant questions with learning disabled students' responses.

Analysis of the Data

The statistical analysis presented in Table 1 demonstrates a significant difference in the means of learning disabled and normal students on the locus of control measure by group, grade, and interaction. An F ratio of 18.694 was obtained and was significant at the .001 level. Hypothesis I (There will be no difference in mean scores of locus of control between the learning disabled students and the normal students) was rejected. The statistical analysis for grade reported an F ratio of

Table 1

Analysis of Variance for Locus of Control Scores in Learning Disabled and Normal Students Across Grade Level

Source of variance	SS	DF	MS	F
Main Effects	559.400	3	186.467	10.419**
Group	334.581	1	334.581	18.694**
Grade	221.905	2	110.954	6.199**
Two-way Interaction				
Group Grade	150.789	2	75.395	4.213*
Explained	710.189	5	142.038	7.936*
Residual	2845.714	159	17.898	
Total	3555.903	164	21.682	

*$p < .01$. **$p < .001$.

6.199 which was also significant at the .001 level. Hypothesis II (There will be no difference in mean scores of locus of control within the learning disabled students and within the normal students across three grade levels [6, 9, and 12]) was rejected. The statistical analysis for interaction reported an F ratio of 4.213 which was significant at the .05 level. Hypothesis III (There will be no difference in mean scores of locus of control between learning disabled students and normal students separately at each of three grade levels [6, 9, and 12]) was rejected.

The total population of 165 learning disabled and normal students had a combined mean score on the Nowicki-Strickland Scale of 12.02. The mean scores of the separate groups were 13.45 for the 83 LD students and 10.59 for the 82 normal students. Mean scores at the three grade levels for LD students were 13.28 for the 25 sixth graders, 15.47 for the 32 ninth graders, and 11.12 for the 26 twelfth graders. Mean scores at the three grade levels for the normal students were 12.15 for the 26 sixth graders, 10.17 for the 30 ninth graders, and 9.50 for the 26 twelfth graders. (See Table 2 and Figure 1.)

Mean scores for the Nowicki-Strickland Scale for the learning disabled groups are above the normal students' scores at all three grade levels. When scores for the normal students drop from sixth to ninth grade, as would be

Table 2

Cell Means on the
Nowicki-Strickland Locus of Control Scale for Children

Total population	12.02 (N = 165)		
Group			
LD	13.45 (n = 83)		
Normal	10.59 (n = 82)		
Grade	6	9	12
LD	13.28 (n = 25)	15.47 (n = 32)	11.12 (n = 26)
Normal	12.15 (n = 26)	10.17 (n = 30)	9.50 (n = 26)

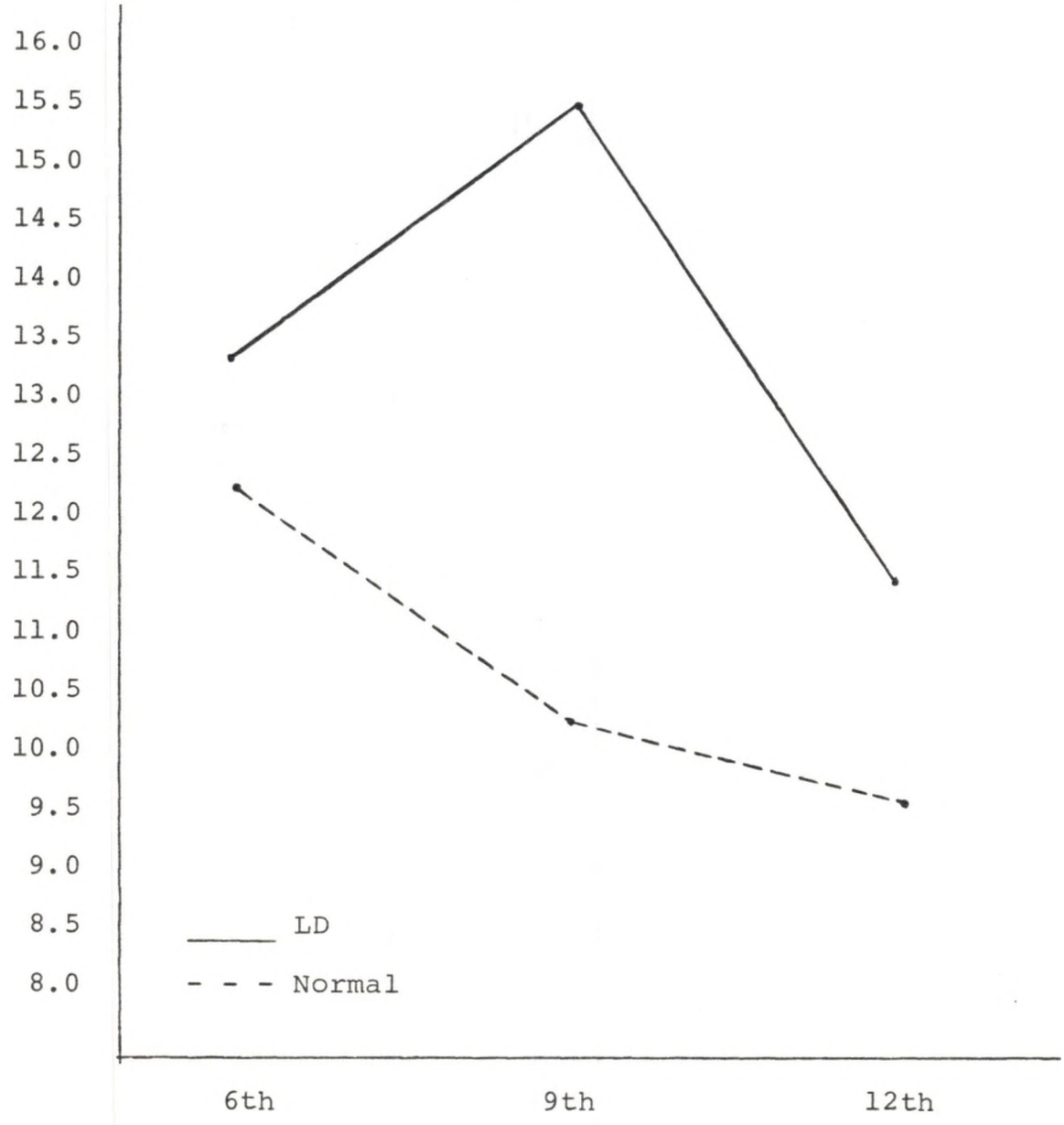

Figure 1. Mean scores on the Nowicki-Strickland Locus of Control Scale for Children by grade.

expected from all research data on internalization of locus of control over time, the LD students' mean rises. At the ninth grade level the LD students have a mean score 5.3 points higher than their normal counterparts. The LD students' mean score drops to within 1.62 points of their twelfth grade normal counterparts.

Data were subjected to Tukey's (a) HSD test to clarify the source of variance. A significance of difference was found for six interactions. Computed t values for interaction are as follows:

t_1 (comparing LD total group to normal total group) = 4.366**

t_2 (comparing LD 6 to LD 9) = 1.943

t_3 (comparing LD 6 to LD 12) = 1.827

t_4 (comparing LD 9 to LD 12) = 3.919**

t_5 (comparing normal 6 to normal 9) = 1.757

t_6 (comparing normal 6 to normal 12) = 2.257

t_7 (comparing normal 9 to normal 12) = .594

t_8 (comparing LD 6 to normal 6) = .956

t_9 (comparing LD 9 to normal 9) = 4.972**

t_{10} (comparing LD 12 to normal 12) = 1.380

t_{11} (comparing LD 6 to normal 9) = 2.721

t_{12} (comparing LD 6 to normal 12) = 3.198*

*$p < .05$. **$p < .01$.

t_{13} (comparing LD 9 to normal 6) = 2.988*

t_{14} (comparing LD 9 to normal 12) = 5.374**

t_{15} (comparing LD 12 to normal 6) = .877

t_{16} (comparing LD 12 to normal 9) = .843

Analysis of Statistically Significant Questions

A chi square test with Yates correction was applied to answers given for each of the 40 Nowicki-Strickland Locus of Control Test for Children questions to determine which were statistically significant indicators. Ten questions were significant in this study. The remaining 30 questions were not significant.

Question 5: Are you often blamed for things that aren't your fault?

	YES	NO
NORMAL	46	36
LD	63	20

$\chi^2 = 6.36065$

$p < .05$

Question 10: Do you believe that wishing can make good things happen to you?

	YES	NO
NORMAL	17	65
LD	31	52

$\chi^2 = 4.74572$

$p < .05$

*$p < .05$. **$p < .01$.

Question 12: Most of the time do you find it hard to change a friend's (mind) opinion?

	YES	NO
NORMAL	35	47
LD	52	30

$\chi^2 = 6.26720$

$p < .05$

Question 14: Do you feel that it's nearly impossible to change your parent's mind about anything?

	YES	NO
NORMAL	23	59
LD	38	45

$\chi^2 = 4.83223$

$p < .05$

Question 16: Do you feel that when you do something wrong there's very little you can do to make it right?

	YES	NO
NORMAL	23	59
LD	41	42

$\chi^2 = 7.04448$

$p < .05$

Question 19: Do you feel that one of the best ways to handle most problems is just not to think about them?

	YES	NO
NORMAL	6	76
LD	25	58

$\chi^2 = 12.60273$

$p < .001$

Question 23: Do you feel that when a kid your age decides to hit you there's little you can do to stop him or her?

	YES	NO
NORMAL	8	74
LD	27	56

$\chi^2 = 11.47458$

$\underline{p} < .001$

Question 24: Have you ever had a good luck charm?

	YES	NO
NORMAL	43	39
LD	29	54

$\chi^2 = 4.44885$

$\underline{p} < .05$

(Note that this is the opposite correlation that previous indications would predict.)

Question 37: Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are?

	YES	NO
NORMAL	4	78
LD	15	66

$\chi^2 = 6.09753$

$\underline{p} < .05$

Question 39: Most of the time, do you feel that you have little to say about what your family decides to do?

	YES	NO
NORMAL	21	61
LD	36	47

$\chi^2 = 4.99753$

$p < .05$

Report of Nonsignificant Answers

There were 30 questions on the Nowicki-Strickland Locus of Control Scale for Children which were determined not to be statistically significant for the learning disabled students. (See Appendix B for data on normal students' responses.) The nonsignificant questions for the LD students were:

1. Do you believe that most problems will solve themselves if you just don't fool with them? Yes: 19 No: 64 $\chi^2 = 1.342$

2. Do you believe that you can stop yourself from catching cold? Yes: 35 No: 48 $\chi^2 = .009$

3. Are some kids just born lucky? Yes: 35 No: 48 $\chi^2 = .543$

4. Most of the time do you feel that getting good grades means a great deal to you? Yes: 74 No: 9 $\chi^2 = 2.339$

6. Do you believe that if somebody studies hard enough she or he can pass any subject? Yes: 67 No: 15 $\chi^2 = .441$

7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway? Yes: 17 No: 66 $\chi^2 = 1.004$

8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do? Yes: 25 No: 58 $\chi^2 = 1.036$

9. Do you feel that most of the time parents listen to what their children have to say? Yes: 51 No: 32 $\chi^2 = 2.071$

11. When you get punished does it usually seem it's for no good reason at all? Yes: 33 No: 50 $\chi^2 = .343$

13. Do you think that cheering more than luck helps a team to win? Yes: 55 No: 28 $\chi^2 = 2.293$

15. Do you believe that your parents should allow you to make most of your own decisions? Yes: 61 No: 22 $\chi^2 = 2.084$

17. Do you believe that most kids are just born good sports? Yes: 27 No: 56 $\chi^2 = 2.364$

18. Are most other kids your age stronger than you are? Yes: 35 No: 48 $\chi^2 = 2.280$

20. Do you feel that you have a lot of choice in deciding who your friends are? Yes: 73 No: 10 $\chi^2 = .000$

21. If you find a four leaf clover do you believe that it might bring you good luck? Yes: 26 No: 57 $\chi^2 = .084$

22. Do you often feel that whether you do your homework has much to do with what kind of grades you get? Yes: 79 No: 4 $\chi^2 = 2.018$

25. Do you believe that whether or not people like you depends on how you act? Yes: 75 No: 8 $\chi^2 = .000$

26. Will your parents usually help you if you ask them to? Yes: 76 No: 7 $\chi^2 = .920$

27. Have you felt that when people were mean to you it was usually for no reason at all? Yes: 37 No: 46 $\chi^2 = .008$

28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? Yes: 56 No: 27 $\chi^2 = .000$

29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them? Yes: 35 No: 48 $\chi^2 = 3.015$

30. Do you think that kids can get their own way if they just keep trying? Yes: 58 No: 25 $\chi^2 = .876$

31. Most of the time do you find it useless to try to get your own way at home? Yes: 37 No: 46
$\chi^2 = 1.893$

32. Do you feel that when good things happen they happen because of hard work? Yes: 65 No: 18
$\chi^2 = .000$

33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? Yes: 38 No: 45 $\chi^2 = .000$

34. Do you usually feel it's easy to get friends to do what you want them to? Yes: 36 No: 46
$\chi^2 = .100$

35. Do you usually feel that you have little to say about what you eat at home? Yes: 21 No: 61
$\chi^2 = .000$

36. Do you feel that when someone doesn't like you there's little you can do about it? Yes: 44 No: 38
$\chi^2 = 2.448$

38. Are you the kind of person who believes that planning ahead makes things turn out better? Yes: 62 No: 21 $\chi^2 = .812$

40. Do you think it's better to be smart than to be lucky? Yes: 73 No: 10 $\chi^2 = 1.822$

Discussion

The purpose of this study was to examine the relationship between learning disabled children and normal children regarding their locus of control orientation. Using a two-way ANOVA, the learning disabled children as a total group were found to be significantly more external in their locus of control orientation than were the normal students as a total group. The learning disabled students as compared to their normal counterparts at grades 6, 9, and 12 were significantly more external with ninth grade scores showing the most variance. Hypotheses I, II, and III were rejected. Tukey's (a) HSD test was applied to establish where significant variation occurred. Significant variation was found between the following groups: total LD and total normal; LD 9 and LD 12; LD 9 and normal 9; LD 6 and normal 12; LD 9 and normal 6; and LD 9 and normal 12. Ten questions from the instrument were determined to be significant descriptors of locus of control difference using a chi square test with Yates correction.

CHAPTER V

SUMMARY, DISCUSSION, AND RECOMMENDATIONS

Summary

The purpose of the study was to investigate the effect of special education on the internalization of locus of control in learning disabled children. The sample consisted of 165 students from five school districts located in two states in the Upper Midwest. Eighty-three of the subjects had been identified as learning disabled by their school district following federal guidelines as outlined in Public Law 94-142. To qualify for this study the learning disabled students met the following criteria: sixth graders had each experienced a minimum of two years, ninth graders a minimum of four years, and twelfth graders a minimum of five years in special education. All students were required to have had Individualized Educational Programs written for each year of special education and all had received direct, individualized instruction. A control group of 82 normal students was matched for town, school, grade, and sex. None of these students had received any special education services (programs for students with visual, hearing, or speech impairments or who are gifted, mentally retarded, or learning disabled). All participants

completed the Nowicki-Strickland Locus of Control Scale for Children.

The overall findings in the present study were significant and demonstrated a difference in locus of control between learning disabled and normal children. It was found that learning disabled children have a more external locus of control, attributing causation of events to luck, fate, chance, or significant others, while normal students have a more internal locus of control, attributing causation to themselves. This finding held true for all three grade levels studied. Application of a Tukey's (a) HSD test identified the source of this variance. Normal students internalized their locus of control as they got older, as previous research had predicted they would. LD students, however, showed a significant movement toward externality from sixth to ninth grades, then internalized, as they moved toward twelfth grade, to within 1.62 points of their twelfth grade normal counterparts. Hypotheses I, II, and III were rejected.

Discussion

Since the passage of Public Law 94-142 in 1975, just ten years ago, the field of learning disabilities has mushroomed. Learning disability teachers were quickly trained and programs rapidly assembled. Compliance with the law often superseded thoughtfully conceived and

gradually executed plans. Nevertheless, many previously ignored or under-served learning disabled students have been taught well and their learning problems have been remediated. The law and special educators provided these students with a chance to succeed where before there had been only failure. However, common sense would tell us that any field of endeavor encompassing so many and developed so rapidly must have, if not a black side, at least grey areas. Perhaps enough time has passed and the rapid growth slackened so that we can thoughtfully consider negative aspects of this field.

This study has dealt with one aspect of learning disability programs: their effect on internalization of locus of control. The review of the literature was replete with studies showing negative implications of an external orientation and with studies verifying that learning disabled students have a more external orientation. If learning disabled students fail to internalize their locus of control orientation, they face a future handicapped by two problems instead of the original one.

It is tempting in a study such as this to focus on the overall results as being strongly indicative that previous research is upheld, LD students are more external in their locus of control, and being in special education programs is the cause of the externality. While this is probably at

least partially true, an examination of the answers to the Nowicki-Strickland Locus of Control Scale for Children provides thought-provoking information.

Of the ten questions which resulted in statistically significant answers between LD students and normal students only one was directly school related, Question 37: "Do you feel that it's almost useless to try in school because most other children are just plain smarter than you are?" And while the number of LD children answering yes to that question was significantly higher than the normal children, 66 of the LD students answered no, that it was not useless to try because other children are smarter.

Two questions dealt with relationships with parents, Question 14: "Do you feel that it's nearly impossible to change your parent's mind about anything?" and Question 39: "Most of the time, do you feel that you have little to say about what your family decides to do?" Owen et al. (1971), Chapman and Boersma (1979), and Hilliard and Roth (1969) all researched parent and learning disabled child relationships finding problems of less affection, more frustration and disappointment, and more negative interactions than the parent has with normal siblings. These problems may be reflected in the responses to Questions 14 and 39.

Two questions with significant results concerned relationships with friends. They were Question 12: "Most

of the time do you find it hard to change a friend's (mind) opinion?" and Question 23: "Do you feel that when a kid your age decides to hit you there's little you can do to stop him or her?" This may relate to some learning disabled children's problems with language fluency; they may not be able to quickly express what they feel under tense circumstances or may not have available the vocabulary needed for persuasion.

One question resulted in the opposite correlation expected. Question 24: "Have you ever had a good luck charm?" Forty-three of the normal students said yes, but only 29 of the learning disabled said yes. The LD students were therefore more internal on this question.

Question 5: "Are you often blamed for things that aren't your fault?" could be school, home, or peer related. Sixty-three LD students agreed with that question; this is a strong indication of the "self-pitying" attitude reported by Hersch and Scheibe (1967, in Williams & Nickels, 1969).

Three questions were involved with the person's inner feelings or thoughts on control. Question 10 asked, "Do you believe that wishing can make good things happen to you?" Thirty-one of the LD students said yes to this question concerned with Rotter's original premise indicating a belief in luck or chance is part of an external locus of control. Question 16, "Do you feel that

when you do something wrong there's very little you can do to make it right?" was answered affirmatively by 41 LD students. Thomas and Pashley (1982) discussed this feeling as a "learned helplessness" and state that this attitude is the loss of ability to perceive a connection between one's action and desired outcomes. This question could also refer to any aspect of the child's life and experiences: school, home, or relationships with peers. "Do you feel that one of the best ways to handle most problems is just not to think about them," Question 19, was answered yes by 25 of the LD students as compared to 6 of the normal students. This question also is a strong indication of externality which can be generalized across all aspects of the child's life.

Therefore, the external locus of control is pervasive across life situations and cannot be directly attributed to school experiences when measured by this instrument.

On the 30 questions where there was not statistical significance, there are five questions directly related to school and achievement. On these questions the LD students scored more internally and similar to their normal counterparts. Question 4: "Most of the time do you feel that getting good grades means a great deal to you?" was answered yes by 74 of the 83 LD students. Question 6: "Do you believe that if somebody studies hard enough she or he

can pass any subject?" was answered affirmatively by 67 LD students, negatively by 15. On the question, "Do you often feel that whether you do your homework has much to do with what kind of grades you get?," Question 25, 76 students answered yes, 7 no. Question 38, "Are you the kind of person who believes that planning ahead makes things turn out better?," an organization skill necessary for school success, was answered yes by 62 students of the 83. The final question, Question 40, stated: "Do you think it's better to be smart than to be lucky?" This was answered no by 10 students and answered yes by 73, indicating an internal orientation toward ability to achieve. All of the attitudes on these questions which express an internal locus of control will have a positive bearing on academic achievement (McGhee & Crandall, 1968; Bendell, Tollefson, & Fine, 1980; Lessing, 1969; Harrison, 1968; Nowicki & Roundtree, 1971; Joe, 1971; Crandall, Katkovsky, & Crandall, 1965; Crandall, Katkovsky, & Preston, 1962; and Weiner et al., 1971). It would seem from some answers on the non-statistically significant questions that LD students are developing positive attitudes toward studying, planning for the future, and using their intelligence in similar ways as their non-learning disabled classmates. It is important that these positive attitudes be fostered.

A very puzzling aspect of this study was the way scores for the LD students externalized from sixth to ninth grades and then internalized again as the students moved toward twelfth grade. Swanson (1981) speculated that locus of control effects are more pronounced on older learning-disabled children's achievement because of extended failure experiences. This extended failure may also account for increased externality as the students move to higher grades with an increasing demand for performance and autonomy and might account for the increase from sixth to ninth grades in this study. The drop in scores reflecting a more internal locus of control is also open to speculation. Perhaps as the adolescent has more varied, adult-type experiences out of school such as dating, or acquiring a driver's license or part-time employment, his/her self-esteem and self-confidence are less dependent on what happens in school. Less than optimum school experiences could be mitigated by experiences in the larger world.

Recommendations

1. Educators must continue to be aware of the importance of disabled students perceiving themselves as being in control of their environments whenever possible (Tollefson et al., 1982; Swanson, 1981; Pearl, Bryan, & Donahue, 1980; Boersma & Chapman, 1981).

2. Educators must be aware that locus of control is a construct and not a stable attribute and is open to change (DeCharms, 1968; Dweck, 1975; Chapin & Dyck, 1976; Bugenthal, Whalen, & Henker, 1977; Thomas & Pashley, 1982).

3. Educators must consider matching locus of control orientation to teaching styles in planning learning experiences (Bendell, Tollefson, & Fine, 1980; Pascarella & Pflaum, 1981).

4. The topic of locus of control should be included in texts and classes training special educators.

5. Since only 10 of the 40 Nowicki-Strickland Locus of Control Test for Children questions were statistically significant in this study, a more refined measurement instrument should be developed.

6. To promote awareness of locus of control orientation an instrument for measuring this concept should routinely be included in initial diagnostic assessments of children referred for evaluation. During the Individual Education Program planning meeting the instrument, results, and implications should be discussed with parents, teachers, the students, and other involved people. Awareness alone of this concept, especially by parents who affect so much of the child's life, could bring a change in attitude and treatment of learning disabled children.

7. Special and regular educators, parents, and administrators sometimes use overly-zealous praise and

overly-protective treatment with the child's best interest at heart, unaware that there can be negative consequences. Adults involved must become aware of these negative consequences. Our aim in all of education should be to produce independent and fully-functioning adults. Special education should set no less a goal.

Future Research

1. Research studies matching teaching methods with internal-external orientations of pupils should continue and be reported.

2. A study correlating locus of control orientation between students and parents would be valuable in attributing amount of influence from home or amount of influence from school on locus of control orientation.

3. One aspect of this study, with surprising and perplexing results, was the sharp rise in external locus of control scores among learning disabled students from sixth to ninth grades and a corresponding sharp decrease in scores to a more internal orientation from ninth to twelfth grades. Further investigation concerning this phenomenon seems warranted.

APPENDIX A

Nowicki-Strickland Locus of Control Scale for Children with External Answers Marked

NAME _____ SCHOOL _____

ADDRESS _____ AGE _____ SEX _____

_____ GRADE _____

NOWICKI-STRICKLAND
LOCUS OF CONTROL SCALE FOR CHILDREN

YES	NO		
X		1.	Do you believe that most problems will solve themselves if you just don't fool with them?
	X	2.	Do you believe that you can stop yourself from catching cold?
X		3.	Are some kids just born lucky?
	X	4.	Most of the time do you feel that getting good grades means a great deal to you?
X		5.	Are you often blamed for things that just aren't your fault?
	X	6.	Do you believe that if somebody studies hard enough she or he can pass any subject?
X		7.	Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?
X		8.	Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?
	X	9.	Do you feel that most of the time parents listen to what their children have to say?
X		10.	Do you believe that wishing can make good things happen?
X		11.	When you get punished does it usually seem it's for no good reason at all?
X		12.	Most of the time do you find it hard to change a friend's (mind) opinion?

YES	NO		
___	X	13.	Do you think that cheering more than luck helps a team to win?
X	___	14.	Do you feel that it's nearly impossible to change your parent's mind about anything?
___	X	15.	Do you believe that your parents should allow you to make most of your own decisions?
X	___	16.	Do you feel that when you do something wrong there's very little you can do to make it right?
X	___	17.	Do you believe that most kids are just born good sports?
X	___	18.	Are most other kids your age stronger than you are?
X	___	19.	Do you feel that one of the best ways to handle most problems is just not to think about them?
___	X	20.	Do you feel that you have a lot of choice in deciding who your friends are?
X	___	21.	If you find a four leaf clover do you believe that it might bring you good luck?
___	X	22.	Do you often feel that whether you do your homework has much to do with what kind of grades you get?
X	___	23.	Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her?
X	___	24.	Have you ever had a good luck charm?
___	X	25.	Do you believe that whether or not people like you depends on how you act?
___	X	26.	Will your parents usually help you if you ask them to?
X	___	27.	Have you felt that when people were mean to you it was usually for no reason at all?

YES	NO		
___	X	28.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?
X	___	29.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?
___	X	30.	Do you think that kids can get their own way if they just keep trying?
X	___	31.	Most of the time do you find it useless to try to get your own way at home?
___	X	32.	Do you feel that when good things happen they happen because of hard work?
X	___	33.	Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?
___	X	34.	Do you feel that it's easy to get friends to do what you want them to?
X	___	35.	Do you usually feel that you have little to say about what you eat at home?
X	___	36.	Do you feel that when someone doesn't like you there's little you can do about it?
X	___	37.	Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are?
___	X	38.	Are you the kind of person who believes that planning ahead makes things turn out better?
X	___	39.	Most of the time, do you feel that you have little to say about what your family decides to do?
___	X	40.	Do you think it's better to be smart than to be lucky?

APPENDIX B

Normal Students Response Data for Nonsignificant Questions

1. Do you believe that most problems will solve themselves if you just don't fool with them? Yes: 12 No: 70

2. Do you believe that you can stop yourself from catching cold? Yes: 33 No: 49

3. Are some kids just born lucky? Yes: 29 No: 53

4. Most of the time do you feel that getting good grades means a great deal to you? Yes: 65 No: 17

6. Do you believe that if somebody studies hard enough she or he can pass any subject? Yes: 71 No: 11

7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway? Yes: 11 No: 71

8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do? Yes: 18 No: 64

9. Do you feel that most of the time parents listen to what their children have to say? Yes: 60 No: 22

11. When you get punished does it usually seem it's for no good reason at all? Yes: 28 No: 54

13. Do you think that cheering more than luck helps a team to win? Yes: 64 No: 18

15. Do you believe that your parents should allow you to make most of your own decisions? Yes: 68 No: 13

17. Do you believe that most kids are just born good sports? Yes: 17 No: 65

18. Are most other kids your age stronger than you are? Yes: 24 No: 57

20. Do you feel that you have a lot of choice in deciding who your friends are? Yes: 72 No: 9

21. If you find a four leaf clover do you believe that it might bring you good luck? Yes: 23 No: 59

22. Do you often feel that whether you do your homework has much to do with what kind of grades you get? Yes: 72 No: 10

25. Do you believe that whether or not people like you depends on how you act? Yes: 73 No: 7

26. Will your parents usually help you if you ask them to? Yes: 79 No: 3

27. Have you felt that when people were mean to you it was usually for no reason at all? Yes: 35 No: 47

28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today? Yes: 55 No: 27

29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them? Yes: 23 No: 59

30. Do you think that kids can get their own way if they just keep trying? Yes: 50 No: 31

31. Most of the time do you find it useless to try to get your own way at home? Yes: 27 No: 55

32. Do you feel that when good things happen they happen because of hard work? Yes: 64 No: 18

33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters? Yes: 37 No: 45

34. Do you usually feel it's easy to get friends to do what you want them to? Yes: 33 No: 49

35. Do you usually feel that you have little to say about what you eat at home? Yes: 22 No: 60

36. Do you feel that when someone doesn't like you there's little you can do about it? Yes: 33 No: 49

38. Are you the kind of person who believes that planning ahead makes things turn out better? Yes: 67 No: 15

40. Do you think it's better to be smart than to be lucky? Yes: 77 No: 4

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