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A COMPARATIVE STUDY OF LOCUS OF CONTROL IN MENTALLY RETARDED, EMOTIONALLY DISTURBED, LEARNING DISABLED, AND NORMALLY ACHIEVING STUDENTS

The University of Oklahoma PH.D. 1984

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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

A COMPARATIVE STUDY OF LOCUS OF CONTROL IN MENTALLY RETARDED, EMOTIONALLY DISTURBED, LEARNING DISABLED, AND NORMALLY ACHIEVING STUDENTS

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

CATHERINE JARRARD COGGINS

Norman, Oklahoma

1984

A COMPARATIVE STUDY OF LOCUS OF CONTROL IN MENTALLY RETARDED, EMOTIONALLY DISTURBED, LEARNING DISABLED, AND NORMALLY ACHIEVING STUDENTS

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"To God be the glory, great things He has done!"

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A COMPARATIVE STUDY OF LOCUS OF CONTROL IN MENTALLY RETARDED, EMOTIONALLY DISTURBED, LEARNING DISABLED, AND NORMALLY ACHIEVING STUDENTS

CHAPTER I

STATEMENT OF THE PROBLEM

Introduction

Locus of control is a construct derived from Rotter's (1954) theory of social learning. According to Rotter, social learning theory stresses that the basic modes of behaving are learned in social situations; these modes of behaving are related to the needs of the individual which require intervention of other persons for satisfaction. Within this theoretical framework the locus of control construct is the belief an individual holds as to the source of his reinforcements (Rotter, 1966). That is, reinforcement may be seen as largely the consequence of one's own actions or characteristics (internal locus of control) or as the result of outside forces (external locus of control) such as fate, chance, or the action of powerful others (Lawrence & Winschel, 1975).

Locus of control is viewed as a continuum with external locus of control at one pole and internal locus of control at the other (Dudley-Marling, Snider, & Tarver, 1982). Individuals are distributed along the continuum according to the degree to which they accept personal responsibility for their own reinforcement. Few individuals are totally at one end or the other but generally tend toward either an internal or external locus of control orientation.

Research focusing on the locus of control construct has demonstrated that individuals with an internal locus of control orientation are more perceptive to, and ready to learn about, their surroundings than individuals with an external locus of control orientation (Lefcourt, 1982). Additionally, internally oriented individuals are more inquisitive, more curious, and more efficient processors of information than are externally oriented individuals.

Locus of control also plays a mediating role in determining how individuals become involved in the pursuit of achievement. Research findings indicate that engagement in achievement-related activity or long-range, skill-demanding tasks is unlikely if an individual views himself as being at the mercy of capricious external forces (Blaha, 1982; Butkowsky & Willows, 1980; Butterfield, 1964). Likewise, high achievement has been shown to be directly associated with an internal locus of control orientation (Chan, 1978; Eldredge, 1981; Gardner, 1974; Kanoy, Johnson, & Kanoy, 1980). In general, those individuals who have an internal locus of control orientation perform better in school than those who have an external locus of control (Chiron & Gerken, 1983). Furthermore, Lawrence and Winschel (1975), Lefcourt

(1966), and Phares (1976) have contended that an external locus of control orientation is a hindrance in the classroom.

In the study of handicapped individuals, research findings have suggested that these individuals may be external in their locus of control orientation (Bialer, 1961; Chapman & Boersma, 1979; Fincham & Barling, 1978; Kendall, Deardorff, Finch, & Graham, 1976; Land & Vineberg, 1965). However, there is a lack of comparative studies on the nature of locus of control in the three most prevalent handicapped populations (i.e., the mentally retarded, the emotionally disturbed, and the learning disabled) in a public school setting. If one accepts the research indicating that an internal locus of control orientation is advantageous to school success, then an understanding of the nature of locus of control in handicapped students would be important in planning and facilitating successful school experiences.

Significance of the Study

This study was conducted to investigate the nature of locus of control in handicapped and non-handicapped students in the public school setting. It is important for educators to understand the nature of locus of control in handicapped populations. If these children are externally oriented then professionals need to develop instructional strategies that will facilitate the development of an internal orientation. Internal locus of control orientation is associated with higher academic achievement and thus helping handicapped students to accept responsibility for their efforts (or becoming more internally oriented) may enhance the potential for these children to experience success in the mainstream of regular education.

Statement of the Problem

The purpose of this study was to compare the nature of locus of control in mentally retarded, emotionally disturbed, learning disabled, and normally achieving students in grades 6 through 8.

The specific questions addressed by the design of this study are:

1. Do students labeled educable mentally retarded, emotionally disturbed, or learning disabled differ in locus of control orientation?

2. Do these students differ from normally achieving students in locus of control orientation?

Hypotheses to be Tested

The rationale underlying the hypotheses of this study evolved from a study of the locus of control construct. The two hypotheses specifically tested in this study were:

1. There will be significant differences in locus of control orientation among educable mentally retarded, learning disabled, and emotionally disturbed students.

   a. Educable mentally retarded students will be more externally oriented than either emotionally disturbed or learning disabled students.

   b. Emotionally disturbed students will be more internally oriented than mentally retarded students and more externally oriented than learning disabled students.

   c. Learning disabled students will be more internally oriented than either emotionally disturbed or mentally retarded students.

2. There will be significant differences in locus of control orientation among educable mentally retarded, emotionally disturbed,

learning disabled, and normally achieving students. That is, these handicapped students will be more externally oriented than normally achieving students.

Definition of Terms

The following definitions were established for this study:

External Locus of Control - the belief that the occurrence of an event, positive or negative, is unrelated to one's own behavior, and is, therefore, beyond personal control.

Internal Locus of Control - the belief that the occurrence of an event, positive or negative, is a consequence of one's own behavior, and is, therefore, under personal control.

Emotionally Disturbed - children identified by the school district as exhibiting one or more of the following characteristics over a long period of time and to a marked degree, which adversely affects educational performance:

1. An inability to learn which cannot be explained by intellectual, sensory, or health factors;
2. An inability to build or maintain satisfactory interpersonal relationships with peers and teachers;
3. Inappropriate types of behavior or feelings under normal circumstances;
4. A general pervasive mood of unhappiness or depression; or
5. A tendency to develop physical symptoms or fears associated with personal or school problems.

The term includes children who are schizophrenic or autistic. The term does not include children who are socially maladjusted, unless it

is determined that they are seriously emotionally disturbed.

Learning Disabled - children identified by the school district as having 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 to do mathematical calculations. The term includes such handicaps as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or of environmental, cultural, or economic disadvantage.

Educable Mentally Retarded - children identified by the school district as having significantly subaverage general intellectual functioning (IQ 50-75) existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects the children's educational performance.

Normally Achieving - children identified by the school district as having a 2.5 (C+) or better grade point average and enrolled in the regular education program.

Mainstreamed - the practice of placing handicapped students in regular education classes for parts of the school day. These students spend the remainder of their school day in a special education class.

Delimitations

This study was organized and conducted with the following delimitations:

1. Participating students were enrolled in grades 6 through 8 in

two public school districts in central Oklahoma.

2. Only male students were selected for participation in this study.

3. Only students returning signed parental permission slips participated in this study.

Limitations

The limitations of this study were:

1. While several schools were available in one of the school districts, the administration requested that the study be limited to one school.

2. Identification of the three handicapped populations was dependent upon the process used by each school district to arrive at each student's classification.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

A review of the literature focusing on the nature of locus of control in handicapped individuals is presented in this chapter. This review of the literature is limited to those studies investigating locus of control in the mentally retarded, the emotionally disturbed, and the learning disabled; these three groups represent the largest number of handicapped individuals receiving special education services.

The purpose of this review of the literature is to show what research has been done using populations of mentally retarded, emotionally disturbed, and learning disabled; and to determine the need for additional research. First, this chapter examines pertinent studies of locus of control with these handicapped groups. This presentation is followed by a review of studies of locus of control as a developmental construct and the implications of this construct for special education. The literature findings are summarized in the last section.

Locus of Control and the Mentally Retarded

Several studies have investigated the nature of locus of control in the mentally retarded. All of these studies support the tendency of mentally retarded individuals toward an external locus of control orientation.

The construct of locus of control in the mentally retarded

individual is characterized by outer-directedness. The mentally retarded individual comes to distrust his own solutions to problems and is thus more outer-directed in his problem solving than is the normal individual of the same mental age (Green & Zigler, 1962). This greater outer-directedness of the retarded is viewed as an outgrowth of the higher incidence of failure they have experienced.

Turnure and Zigler (1964) conducted two studies to test the hypothesis that the high incidence of failure that is experienced by the retarded result in their employing an outer-directed style of problem solving. In the first study they examined the imitation behavior of normal and retarded children of the same mental age on two tasks. One task involved the imitation of an adult and the other task the imitation of a peer. Prior to the imitation tasks, the children played three games under either a success or failure condition. The specific hypotheses tested were that retarded children would be generally more imitative than normals and that all children would be more imitative following failure experiences. The hypotheses were confirmed on both tasks. The study indicated that the outer-directedness of the retarded resulted in behavior characterized by an over-sensitivity to external models with a resulting lack of spontaneity and creativity. In the second study, normal and retarded children matched on mental age and divided into experimental and control groups performed on two object assembly and one block-board task. In the experimental group, the experimenter engaged in certain behaviors that if attended to would interfere with the child's performance on the first object-assembly task and facilitate performance on the second object-assembly

task. This would also provide the child with a response that would be imitated on the block-board game. The authors predicted that the retarded would perform below the normal on the first object-assembly task, but the cues that the retarded child picked up as a result of his outer-directedness should facilitate performance on the second object-assembly task. The predictions were confirmed. The normal children were superior to the retarded on the first task, whereas the retarded were superior to the normal children on the second task. This demonstrated that outer-directedness may be either detrimental or beneficial, depending on the nature of the total situation. Results from the block-board game demonstrated that the retarded were more imitative and they made more glances toward the experimenter. In summary, these studies concluded that the retarded children are more outer-directed in their problem solving, are more imitative than normal children, are more outer-directed as an outgrowth of life histories characterized by an inordinate amount of failure, and are more likely than normal children to depend on external cues to guide their actions.

According to a study conducted by Floor and Rosen (1975), the concept of internal versus external locus of control also has a bearing on perceived ability to effect environmental change. Persons with a relatively high internal locus of control are seen as better able to cope with their environment, and hence to be less helpless, than persons who feel externally manipulated, or see themselves as victims of fate. Helplessness in a group of mentally retarded adults was investigated through a set of behavioral and questionnaire measures

specifically adapted for this population. Similar measures were applied to nonretarded control subjects. A Helplessness Test was developed consisting of five behavioral items and three questionnaires. The behavioral items were designed to assess coping ability in simple problem solving situations in which intellectual capacity would not be a dominant requirement. Items were designed which would not harm or frighten the subject, but would require him to take action to solve a problem or extricate himself from mildly aversive circumstances. The questionnaires included an adapted passive-dependency scale, a coping behavior questionnaire, and an adapted Locus of Control questionnaire. Retarded adults were more likely to get high scores on these various Helplessness Tests than were nonretarded adults. In other words, they were more helpless. They were less likely to take the initiative to improve their lives. Locus of control showed the highest relationships to other variables. A sense of internalized control over environmental factors appears to be an important factor in generalized coping ability.

In another study, Riedel and Milgram (1970) compared 49 educable retardates with 20 third- and 19 sixth-grade normal children on measures of locus of control, level of aspiration, and achievement. Locus of control was assessed by the Locus of Control Scale questionnaire and by a modified Battle-Rotter test. Since the standard Battle-Rotter pictures dealt with interactions deemed age-inappropriate for retarded adolescents and adults living in the community, nine new pictures with appropriate captions were selected. Each picture was scored as internal, external, or neutral on the basis of conventional Battle-Rotter criteria. The number of internal responses constituted

each child's internal score. The Locus of Control Scale items represent two different kinds of situations. In the first, people do things for or against the subjects. The subjects are required to report whether they believe they can do anything to alter the people's behavior and whether the actions of the other people were due to the subject's behavior. In the second situation, subject is confronted with ambiguous circumstances with no meaningful cues for resolution of conflict. The findings of this study indicated that the retarded individual has a great tendency to regard himself as unable to alter interactional outcomes in his favor. Being intellectually less adequate, the retarded individual has learned to react rather than act and his behavior tends to be under the control of others rather than his own. The findings also suggested that life circumstances such as being very young or being mentally retarded tend to lead subjects to view themselves in interpersonal relationships as dependent and relatively helpless.

A study investigating locus of control in mentally retarded and learning disabled third and fourth graders found these subjects to be externally controlled (Tongnetti, 1972). Further, it was stated that the externally oriented subjects were less able than their peers in ability to assume responsibility for success and failure.

The major findings and conclusions of a study by Fox (1972) supported externality as a characteristic of the mentally retarded. Locus of control was studied in mentally retarded and normal adolescents. Two locus of control measures were used; one to assess locus of control in general social situations and the other as a measure of locus of control in academic situations. The author reported that in

generalized locus of control retarded adolescents were more externally oriented than average adolescents of the same chronological age or average children of the same mental age. Additionally, it was found that retarded children were similar to average children in their willingness to accept responsibility for academic successes, but were less willing to accept responsibility for academic failures.

Gardner, Warren, and Gardner (1977) explored the relationship between knowledge of learning skills required for coping with community life and locus of control. Subjects in this study were 94 high school students. Of these, 45 were enrolled in standard level or college preparatory programs, 25 were educable mentally retarded students, and 24 were learning disabled students. Locus of control was determined by the Bialer-Cromwell Children's Locus of Control Scale. The results of this study indicated that the high school students in standard and college preparatory programs were more likely to see outcomes as determined by their own behaviors (internal locus of control) than were retarded and learning disabled students.

Several studies have looked at achievement in relation to locus of control in retarded subjects. One such study (Shipe, 1971) investigated measures of impulsivity and locus of control and related them to achievement and to ratings of personal and social adjustment among mild and borderline retardates. Two groups of subjects participated in this study. One group was drawn from a vocational community school and the other from an institutionalized population. An IQ range of 50 to 85 was established for both groups, 72.7 mean IQ for the vocational school subjects and 64.7 mean IQ for the institutionalized subjects.

The results indicated that those individuals who, on the tests used, were most able to delay the impulse to action, to use foresight, and to plan ahead, tended to be those individuals who saw themselves as being responsible for the outcome of events concerning themselves. Further, the evidence indicated that vocational school boys with internal attitudes and low conceptual impulsivity are those who show the highest achievement level. Locus of control appeared more important in accounting for achievement in those academic areas most dependent upon verbal skills, while both locus of control and conceptual impulsivity were important to achievement in nonverbal areas.

Rich (1981) studied the relationship between locus of control and reading achievement in educationally handicapped children. Thirty-six educationally handicapped children were classified as internal or external based on their perceptions of locus of control for reinforcement. The 36 children were provided a daily period for 25 consecutive school days to silently read one story from each reading series title and to respond to the multiple choice questions. The assigned reading books were consistent with each child's reading level. The conclusions of the study stated that the children, regardless of locus of control, perform better on low level (rote recall) questions than on high level questions. Further, the internally controlled children outperformed their external counterparts on high level (analysis and synthesis) questions. These conclusions suggested that those who are externally controlled are "stimulus bound", that is, "concrete, convergent, and compartmentalized" in their responses to reading questions.

In conclusion, studies have demonstrated that mentally retarded

individuals are external in locus of control orientation. Additionally, studies have also suggested that this external locus of control is associated with outer-directed problem solving ability, learned helplessness, low achievement, poor coping ability, and impulsivity.

Locus of Control and the Learning Disabled

Studies investigating locus of control in learning disabled students are few in number. Of these studies, most have suggested that there is a tendency for the learning disabled to be more externally oriented than normal students. This section will review studies investigating the nature of locus of control in the learning disabled.

One of the earliest studies relating to locus of control and the learning disabled compared locus of control in normal, retarded, and learning disabled adolescents as it related to learning skills required for coping with community life (Gardner, Warren, & Gardner, 1977). Locus of control was determined by the Children's Locus of Control Scale (Bialer, 1961). The results of this study indicated that high school students in standard and college preparatory programs were more likely to see outcomes as determined by their own behaviors than were the retarded and learning disabled students assigned to resource rooms. In other words, the normal group subjects were oriented toward an internal locus of control whereas the retarded and learning disabled subjects tended toward an external locus of control. Other findings of the study indicated that the mentally retarded and learning disabled students did not differ on locus of control. The authors concluded with the suggestion that it might be helpful for educators to develop an awareness of the possible role of locus of control in learning,

especially its relationship to students with learning problems.

Fincham and Barling (1978) reviewed investigations and concluded that there had been few attempts to investigate locus of control in exceptional children and no attempts to relate locus of control in exceptional populations to nonacademic behavior. The purpose of their study was to investigate locus of control and generosity of learning disabled, normal achieving, and gifted children. The subjects were 9- and 10-year-old males. Locus of control was measured using the Children's Nowicki-Strickland Locus of Control Scale (1973). The findings in this study demonstrated that the learning disabled, normal achieving, and gifted subjects differed in generalized locus of control expectancies. The learning disabled subjects were the most externally oriented; the highest internal scores were found in the gifted subjects.

Hallahan, Gajar, Cohen, and Tarver (1978) studied learning disabled and normal teenagers. The Intellectual Achievement Responsibility (IAR) Questionnaire (Crandall, Katkovsky, & Crandall, 1965) and the Nowicki-Strickland Scale were used to measure locus of control in the subjects. The findings suggested that the learning disabled differed significantly from the normal subjects on locus of control. The LD subjects exhibited a greater degree of external control than the normal subjects on both academic (IAR) and nonacademic (Nowicki-Strickland) locus of control measures. These results suggested that the LD child's external locus of control pervades a broad range of beliefs rather than being specific to academic situations. The authors suggested that the learning disabled child's external view of the world may hinder him from actively seeking appropriate learning

strategies.

In reviewing the literature, Chapman and Boersma (1979) concluded that a link between locus of control and learning would seem logical given that school achievement requires a degree of effort and persistence in academic tasks and that such behaviors are unlikely to occur if students see little relationship between their efforts in learning and the outcomes. Several studies were cited which indicated that perceived control over event outcomes is related to school achievement, with internally oriented students generally performing at higher levels than externally oriented students. A study conducted by the authors reported that on the IAR Questionnaire learning disabled children had lower internal scores for success than normal children. It was found that the learning disabled children had a greater tendency to ascribe responsibility for successful school-related outcomes to external sources. The learning disabled and normal children had similar perceptions of control for failure outcomes, both groups seeing themselves as having a degree of control over their failures.

Pearl, Bryan, and Donahue (1980) examined LD and normal children's beliefs about the causes of their successes and failures. Two studies were presented. In the first study children in grades 3 through 8 were administered the IAR Questionnaire to measure the child's perceptions of control in achievement situations. The results of this study indicated that learning disabled children have lower perceptions of internal control over outcomes than nondisabled children and that the LD children believed successes to be caused by external factors. In the second study children in grades 1 through 8 rated the importance

of ability, effort, task difficulty, and luck for success and failure in several academic and social situations. The LD children in this study compared to the normal children were less likely to think their failures occurred because of a lack of trying. The results of this study suggest that successful interventions for learning disabled children may need to teach strategies for dealing with failure.

A study investigating locus of control and personality functioning of learning disabled children was conducted by Mindingall, Libb, and Welch (1980). Fifty-one learning disabled children were administered the Nowicki-Strickland Locus of Control Scale (1973). The scores of the learning disabled children were then compared to the scores of normal children from the Nowicki-Strickland sample. The learning disabled children's scores were significantly more external than the normal children's scores. It was also found that males as a group were also significantly more external.

Scott and Moore (1980) reported that on the Gruen, Korte, Stephens Internal-External Scale (Gruen, Korte, & Baum, 1974) learning disabled boys had significantly higher, or more external, scores than did normal boys. The authors concluded that the more externally oriented learning disabled boys may to a greater degree than normal boys believe that events happen to them as a function of environmental pressures, other individuals such as teachers, or chance. The normal boys may believe more than the learning disabled boys that their efforts have a significant influence on what happens to them.

Research investigating the interaction of locus of control orientation with two conditions of learning (high structured reinforcement

and low structured reinforcement) on the performance of learning disabled adolescents was conducted by Bendall, Tollefson, and Fine (1980). The learning disabled adolescents were administered the IAR Questionnaire to measure locus of control. The findings suggest that adolescents with internal locus of control performed significantly better in the low-structure reinforcement condition while the adolescents with external locus of control performed significantly better in the high-structure reinforcement condition.

Bryan and Pearl (1981) identified learning disabled children as those who were experiencing significant retardation in one or more academic subjects in spite of having intelligence within the normal range. Additionally, the authors noted that these children did not have primary sensory, physical, or emotional problems which might warrant the school difficulties. The authors reviewed several studies of the self-concept and locus of control of learning disabled children. It was concluded that learning disabled children are more likely than nondisabled children to have negative self-concepts and that they believe that their successes are the result of luck or other people while their failures are insurmountable.

Snyder (1982) reported that in a study of locus of control in learning disabled and nondisabled students the learning disabled perceived their locus of control to be significantly more external than did the nondisabled. The Nowicki-Strickland Locus of Control Scale was administered to 158 students in elementary, junior high, and high school. All mean scores for learning disabled students were higher than for nondisabled students. The author concluded that the learning

disabled students were more likely than the nondisabled to see their lives as controlled by fate, luck, or other people.

Two studies were identified that contradict the majority of the studies relating to locus of control in the learning disabled. Hisama (1976) found that there were no significant differences in locus of control scale scores between children with learning and behavior problems and normal children. In this study the Children's Locus of Control Scale (Bialer, 1961) was administered. The results indicated that the child with learning and behavior problems was not more externally oriented than the normal child. The author did make some conclusions regarding the internal-external locus of control construct. The internally oriented child tended to put out more effort despite adverse motivational conditions. The externally oriented child responded to the success experience positively while his performance was depressed under failure conditions. The author concluded that 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. Bladow (1980) used an abbreviated form of the Nowicki-Strickland Locus of Control Scale to measure locus of control in learning disabled and nondisabled subjects in grades 3 through 6. No significant differences were found in externality between learning disabled and nondisabled children. The older nondisabled subjects tended to score more internally but not significantly so.

In conclusion, studies have generally supported the notion that learning disabled children are more externally oriented and significantly less internally oriented than normal children. Also, there is a positive relationship between internality and academic achievement. Several studies have shown that the learning disabled student is external only in relation to success in that they accept responsibility for failure but do not take credit for success. Most LD children may not realize that successful performance can be influenced by their own behavior. Finally, studies have shown that learning disabled are externally oriented in both academic and general life situations.

Locus of Control and the Emotionally Disturbed

Research in the area of locus of control and the emotionally disturbed population has been sparse. The majority of the studies have been concerned with the emotionally disturbed adult in institutional settings. Fewer studies have investigated locus of control in the emotionally disturbed child, and the majority of these were also in institutional settings; even less research has been conducted with emotionally disturbed children in a school setting.

An early study by Shybut (1968) looked at internal vs. external locus of control and severity of psychological disturbance. A comparison was made between normal (nonhospitalized) males and moderately and severely disturbed hospitalized males. Locus of control was measured using a questionnaire of items similar to the ones used by Rotter (1966). In comparison with normals and moderately disturbed, the severely disturbed subjects had significantly stronger beliefs in external control. Another variable in this study focused on length of

hospitalization. It was found that long-term patients had a higher external control than the short-term patients. The author concluded that prolonged hospitalization, with its structured, limited environment and emphasis on external control, may reduce one's expectancies for obtaining any socially valued goals and especially long-range goals and increase one's belief in external control.

Several studies focusing on locus of control in the disturbed population were concerned with schizophrenics in institutional settings (Cash & Stack, 1973; Cromwell, Rosenthal, Shakow, & Zahn, 1961; Duke & Mullens, 1973; Harrow & Ferrante, 1969; Lottman & DeWolfe, 1972). The earliest of these studies (Cromwell et al, 1961) compared adult male schizophrenics with normal males. Locus of control was measured by the James-Phares external control scale and the Children's Locus of Control Scale, both of which were unpublished dissertations. It was found in this study that the schizophrenics exhibited an external locus of control. The Harrow and Ferrante (1969) study measured locus of control in acute psychiatric patients. The Rotter I-E Scale was administered during their first and seventh weeks of hospitalization. Several findings were discussed. Of all the patients, schizophrenics were the most external. The depressive patients had an external orientation but were more internal than the schizophrenics as were those patients with character disorders. The manic patients were extremely internal at the height of their disorders. They had grandiose thoughts regarding their own ability to successfully deal with life and were more internal than all other patients. The younger patients were generally more external, and the older schizophrenics were even

more external. Within the depressive group it was found that as their depressive symptoms diminish they become more internal. The manic patients become more external following treatment. The study by Duke and Mullens (1973) compared three groups: chronic schizophrenics, nonschizophrenic patients, and normals. The focus of the study was on preferred interpersonal distance as a function of locus of control. The findings support earlier research that schizophrenics are more external than normals. The chronic schizophrenics preferred greater distances from human stimuli than did the normals. The authors concluded that due to the chronic schizophrenics' locus of control orientation they felt less able to control what happens in a relationship with selected others. Lottman and DeWolfe (1972) compared reactive and process schizophrenics on locus of control and found the process schizophrenics to be more external than the reactive schizophrenics. Cash and Stack (1973) examined locus of control among schizophrenics and other hospitalized psychiatric patients. The subjects were 61 males hospitalized for psychiatric disorders. The groups were made up of schizophrenics, psychotic depressives, anxiety neurotics, and neurotic depressives. Locus of control was measured by Rotter's I-E Scale. Externally oriented persons were found to be more anxious than those who perceive outcomes as contingent upon their own behavior. Also stated in this study was that external control is positively related to measures of neuroticism and maladjustment. The schizophrenics in this study were found to be significantly more external than the other subjects. Within the schizophrenic group, there was greater externality among paranoid than among nonparanoid schizophrenics.

Schizophrenics as compared with normals seemed to be more highly motivated to avoid failure and less strongly motivated to attain success. The schizophrenics who presented themselves as "healthy" were more internal than those who presented themselves as "sick". Externality was found to increase with loss of reality contact. The psychotics were more external than the neurotics.

DuCette, Wolk, and Soucar (1972) examined the relationship between locus of control and adaptability. Two studies were reported with children who had experienced school-related maladjustment compared to children who had not demonstrated such maladjustment. Other variables in the subjects were race and IQ. Locus of control was measured using the IAR Scale. The data presented indicated that there is no simple relationship between locus of control and maladjustment. The major conclusion from the data presented would seem to be that it is neither internality or externality per se that is related to maladjustive behavior, but it is instead the relationship between these two in regard to different kinds of events that is important. The white problem child and the high IQ problem child both demonstrated a highly internal orientation to negative events. Interestingly, they assumed much responsibility for failure but they assumed little responsibility for success. In other words, when they failed it was because they were inadequate but when they succeeded it was because of luck. In contrast, the black problem child and the low IQ problem child were highly internal when it comes to the assumption of responsibility for positive events but highly external with regard to negative events. That is, they said failure was always due to powerful forces outside of their

control, but their success was due to personal accomplishment. It was found that both groups of children were insensitive to environmental feedback and unable to adjust.

In a review of locus of control as a personality variable, Joe (1971) found that individuals who are external, in contrast to internal, were relatively anxious, aggressive, dogmatic, less truthful, more suspicious of others, and lacking in self-confidence and insight. Furthermore, they had low needs for social approval and a greater tendency to use sensitizing modes of defenses. The findings of the review indicated that externals described themselves as anxious, less able to show constructive responses in overcoming frustration, and more concerned with fear of failure than with achievement per se. There was a tendency for externals to be more maladjusted than internals.

In a study involving 135 students in a semiresidential school program, Allie (1979) administered the Nowicki-Strickland Locus of Control Scale. The subjects had been identified as having significant adjustment problems in the regular classroom. The subject's problems were classified as school phobic, withdrawn, adjustment problems, and deficient coping skills. It was concluded that the subjects exhibited a general feeling of helplessness and failure to control things.

Gilmor (1978) found that juvenile delinquents were more externally oriented than non-delinquent groups. Further, the externally oriented group reported more disturbances in their relationships with teachers such as negative incidents of misunderstanding, lack of agreement, and lack of understanding than did the internally oriented groups. The

internally oriented groups were better able to adjust to any classroom structure.

A study by Linn and Hodge (1982) investigated locus of control in hyperactive children. Subjects were 32 male children between the ages of 8 and 12. Sixteen of these subjects had been diagnosed as hyperactive. The remaining 16 subjects exhibited no symptoms of hyperactivity. Each subject was administered the Nowicki-Strickland Locus of Control Scale. Compared to normal children, hyperactive children scored more externally on the locus of control scale. The authors concluded that unless hyperactive children are provided with evidence that their behavior is linked to some environmental consequence, they may persistently perceive the world with an external locus of control.

Baken (1978) compared disability groups on home instruction with respect to locus of control beliefs. The 81 subjects fell into three major disability categories: emotionally disturbed/socially maladjusted, physically handicapped and health impaired. Each subject was receiving homebound services. The Children's Internal-External Control Scale of Reinforcement was used to assess locus of control. Although not statistically significant, the data pointed in the direction of greater external locus of control among emotionally disturbed/socially maladjusted subjects. The data suggested that subjects differ in their perceptions of the influence of powerful others, with emotionally disturbed/socially maladjusted subjects showing greater externality than physically handicapped subjects.

Nelson, Finch, Montgomery and Bristow (1975) compared locus of control in a group of emotionally disturbed children with a group of

normal children. The subjects were 20 emotionally disturbed children in a residential treatment center and 20 normal children enrolled in a public school. Two scales were administered and yielded contradictory results. On one scale the emotionally disturbed children were more internal than the normal students while on the other scale, the emotionally disturbed children were more externally oriented than the normal children. The authors concluded that the inconsistency of the findings indicated that the two scales are not measuring the same thing.

Kendall, Deardorff, Finch and, Graham (1976) investigated the relationship of locus of control and anxiety to interpersonal space. The subjects were 20 emotionally disturbed boys residing in a short-term psychiatric hospital and 20 boys enrolled in an elementary school. The Nowicki-Strickland Locus of Control Scale was used to measure locus of control. Normal and emotionally disturbed boys were not found to differ significantly on locus of control. Further, normal and emotionally disturbed externals required significantly more space than the internals. Significantly more space was required when the object person was approaching the subject. The externals were inclined to keep others at a greater distance.

Hisama (1976) found that there were no significant differences in locus of control scale scores between children with learning disabilities and behavior disorders and normal children. The subjects were 48 children in special education classes identified as having learning and behavior problems and 48 third- and fourth-graders considered to be free from learning and behavioral problems. The Children's Locus of Control Scale was used to measure locus of control. Hisama concluded

that the child with learning and behavior problems is not more externally oriented than the normal child.

Although many of these studies have concluded that the emotionally disturbed tend to have an external locus of control orientation, there are also several studies which do not support these findings. A review of the literature indicates a lack of consistent results. It is evident that continued research is needed.

Locus of Control as a Developmental Construct

Locus of control generally follows a developmental pattern. Young children tend to be externally oriented, with internal control developing as children are continually more able to perceive the influence of their actions on events (Lawrence, 1969).

Bialer (1961) hypothesized that locus of control would change with increasing mental age and chronological age. As predicted, with increasing age there was a significant tendency among subjects to perceive internal locus of control. The mental age was the more relevant variable. The results suggested that retarded children follow the same developmental pattern as do normal children but they do so at a slower pace.

Although the progression from externality to the highest levels of internality is still speculative, Lawrence and Winschel (1975) have proposed a five-stage process:

Stage I — The child attributes the events of his life, particularly failure, to forces beyond his control.

Stage II — Internality for success begins to emerge while externality for failure, though still evident,

begins to fade.

Stage III — The maturing child becomes essentially internal, although this belief is principally evident in self-responsibility for success.

Stage IV — The previous stage of development appears to be reversed, as a growing awareness of responsibility and a sense of courage in the face of difficulty lead to high internality for failure, coupled with a new modesty for one's successes.

Stage V — With the onset of genuine self-reliance, the individual accepts equally the responsibility for his successes and failures.

Lawrence and Winschel suggested that the mentally retarded adolescent frequently does not progress beyond the first two stages.

In another study, Fox (1972) has demonstrated that the mentally retarded cluster about Stages II and III. Relatively few mentally retarded individuals obtain the upper levels of the continuum. Subsequent research is needed to confirm the developmental aspects of locus of control, especially with reference to its emergence by age-related stages.

Studies involving learning disabled children also tend to support the notion of locus of control as a developmental construct. Chapman and Boersma (1979) found that both learning disabled and nondisabled children increasingly attributed failure to internal causes over age. In other words, nondisabled children became more internal for both success and failure as they grew older. In contrast, with age,

learning disabled children became more internal only for failure. Snyder (1982) also reported that the level of externality decreases with advancing age for nondisabled students, but it remains fairly constant for those with learning disabilities.

An investigation by Gilmor (1978) of locus of control and adaptive behavior in children and adolescents supports the developmental nature of the construct. Gilmor cited several studies to support the notion that internality has consistently been shown to increase with age. These studies speculated that this developmental change in locus of control reflects children's growing independence from parental dominance and increased exploration of the environment. Allie (1979) studied locus of control in children with adjustment problems. The findings of this study confirmed other research regarding the developmental aspect of the locus of control construct. The student's responses became more internal with age.

Locus of Control: Implications for Special Education

A few studies that have focused on the construct of locus of control have discussed the implications for special education, or, more specifically, how to develop strategies which would assist the student in shifting from an external locus of control to an internal locus of control. Gardner and Gardner (1974) presented some strategies for teachers. They proposed that teachers be alert to "external statements" made by their students and attempt to replace these statements with internal ones. In addition, teachers can systematically reinforce "internal statements" while helping students to understand the relationship between their own actions and the outcomes of

their behavior. Also, teachers can discuss with the class what students can do to solve a current dilemma or what they can do to prevent an undesirable outcome from recurring at some future date. Finally, the authors suggested that teachers can develop lessons which emphasize the discovery of personal or academic problems followed by the development of a plan of action which would lead to a solution to the problem.

Schloss and Sedlak (1982) stressed that teachers should be aware of the student's perceived locus of control. The adolescent must be provided with numerous success experiences and consistent consequences should be paired with success. Immediate feedback should follow behavior, so that the student will begin to recognize the effect his or her behavior has on specific outcomes. The authors continued by stressing that social reinforcement should be honest and directly related to the desired behavior, since noncontingent praise may serve to encourage the disassociation of behavior from consequences. Finally, every effort should be made to shift the perceived control of contingencies from the teacher to the student.

Rich (1981) suggested that education should assist educationally handicapped children in understanding that their behavior, academic and social, is primarily their responsibility and not altogether dependent on "luck", "fate", or "significant others." Helping these children to interpret social problems, develop personal insight and, in particular, understand the cause-effect relationship between their behavior and the consequences is critical in the development of internal control.

A study by Chiron and Gerken (1983) investigated the effects of a

specific self-monitoring technique (charting) on promoting changes in the locus of control orientation of educable mentally retarded children. The major finding of this study demonstrated that the use of the charting procedure did promote a change in the locus of control scores for EMR students toward a more internal locus of control orientation.

Lawrence and Winschel (1975) contended that internality of locus of control must become a conscious goal in the education of handicapped children. The authors suggested that educators first restructure the environment of the special class so as to consciously promote in children those qualities of internality which might well constitute a criterion for regular class placement of equal importance with intellectual ability and academic achievement. The environment should be one in which the opportunities for success and failure are realistically available. In conclusion, the authors recommended that consideration of a retarded child for regular class placement should be dependent upon the child's ability to demonstrate a level of internality not less than the average for the class. Additionally, in order to maximize the present performance potential of retarded children, teachers should be sensitive to a child's locus of control beliefs, be aware of the developmental aspects of locus of control, and consciously seek to promote in children a progression toward internality for both success and failure. Praise must be deserved; failure must be possible.

Finch, Pezzuti, and Nelson (1975) found that emotionally disturbed children who perceived a relationship between their own behavior and the resulting consequences obtain higher achievement scores than those who do not. These findings suggested that it is important to teach

children that they have control over their own reinforcements. The authors concluded that many emotionally disturbed children feel that they are destined to failure in school and that they have no control over this happening. Remediation and treatment programs should strive to provide children with a feeling of control over their own behavioral consequences by stressing the contingencies that are in operation.

A study by Deiker and Matson (1979) reported that the use of a token economy as a treatment plan for emotionally disturbed adolescents resulted in an increased perception of internal control and a greater success orientation. The authors concluded that the use of a token economy as an external source of control is not necessarily incompatible with increasing student's expectancies of present and future control of the environment.

Gaa (1979) investigated the effects of individual goal setting conferences on classroom achievement and locus of control orientation. The author found that conferences to set goals enhanced student achievement and helped to internalize locus of control.

These studies have demonstrated the practicability of changing a student's locus of control orientation. Further, these studies support the need for educators to develop teaching strategies that will enable students to shift their locus of control orientation from external to internal. Teachers should have as a goal helping students to learn to take control of their own lives (DeCharms, 1971).

Summary

In the first section of this review, studies were presented which examined the nature of locus of control in the mentally retarded.

There were few studies that directly addressed this issue. In general, however, the literature tends to support an external locus of control orientation in the mentally retarded.

In the second section, studies investigating locus of control in the learning disabled were presented. Again, there were not a large number of studies. The research that has been conducted generally indicated that the learning disabled are externally oriented. However, two studies were presented that do not support these findings.

In the third section, studies examining locus of control in the emotionally disturbed were presented. The sparsity of these studies clearly indicates a need for further research within this population. Of particular interest was the small number of studies of the emotionally disturbed school-age child in a school setting. Although the studies tended to report that emotionally disturbed individuals are externally oriented, there are enough inconclusive and contradictory studies to warrant additional research.

In the fourth section, studies were presented which support locus of control as a developmental construct. These studies set forth a knowledge base to enable educators to better understand the nature of locus of control.

In the fifth section, studies were presented that reported the significance of investigating the locus of control construct as it relates to practical implications for special educators. The studies concluded that strategies for shifting locus of control from external to internal were successful and should be utilized.

From this review of the literature, this researcher has concluded

that additional research is needed to better understand the locus of control construct as it relates to the handicapped, particularly the school-age population. In the following chapter, the procedures for this research are detailed.

Chapter III

RESEARCH DESIGN

Introduction

This descriptive study was designed to ascertain if there are statistically significant differences in locus of control orientation among educable mentally retarded, learning disabled, and emotionally disturbed students. Additionally, this study was designed to ascertain if there are statistically significant differences in locus of control orientation among handicapped students and normally achieving students.

A description of the research design is presented in this chapter. The sections included in this chapter are: (a) a description of the sample, (b) a description of the instrument, (c) the data collection procedures, and (d) the statistical analyses.

Description of the Sample

The subjects in this study were 151 male students in grades 6 through 8. The students were selected from four public schools located in two suburban school districts in central Oklahoma. Eighty-nine students were selected from one middle school in one district and sixty-two students were selected from three middle schools in the other district.

Of the 151 subjects, there were 72 handicapped students. Each of these had been identified by the school district as educable mentally

retarded, learning disabled, or emotionally disturbed. The handicapped subjects were enrolled in special education classes but were mainstreamed into regular education classes for varying portions of the school day. In order to comply with district guidelines regarding confidentiality the special education teachers at each school sent parental consent letters (see Appendix A) for each student selected to participate in the study. Only those students returning the signed letter of consent participated.

Seventy-nine of the 151 subjects were normally achieving students. These subjects were not enrolled in special education classes and had a grade point average of 2.5 (C+) or better. Letters of parental consent were secured for each subject prior to participation in this study. Information pertaining to both the handicapped and normally achieving subjects is presented in Table 1.

Table 1

Data Pertaining to the Subjects with Regard to Category and Grade

Category	Sixth-Graders (N=34)	Seventh-Graders (N=61)	Eighth-Graders (N=56)
Educable Mentally Retarded (N=25)	4	10	11
Learning Disabled (N=25)	5	13	7
Emotionally Disturbed (N=22)	6	7	9
Normally Achieving (N=79)	19	31	29

Description of the Instrument

The Children's Nowicki-Strickland Internal-External Control Scale (CNS-IE) was used as the measure of locus of control (Nowicki & Strickland, 1973). This locus of control scale was designed as a measure of generalized expectancies for internal versus external control of reinforcement. This test is appropriate for children ages 9 through 18.

The CNS-IE is a 40-item test having a Yes-No response mode (see Appendix B). An example of a question from the CNS-IE is shown below.

> Do you believe that if somebody studies hard enough he or she can pass any subject?

The score is the total number of items answered in an externally controlled direction. The higher the score, the more external the orientation.

Nowicki and Strickland (1973) reported estimates of internal consistency via the split-half method, corrected by the Spearman-Brown formula as $\underline{r}$ = .63 (grades 3, 4, 5); $\underline{r}$ = .68 (grades 6, 7, 8); $\underline{r}$ = .74 (grades 9, 10, 11); and $\underline{r}$ = .71 (grade 12). According to Nowicki and Strickland, these reliabilities are satisfactory in light of the fact that these items are not arranged according to difficulty. Since the test is additive and items are not comparable, split-half reliabilities tend to underestimate the true internal consistency of the scale.

Test-retest reliabilities sampled at three grade levels, six weeks apart, were .63 for the third-grade, .66 for the seventh-grade, and .71 for the tenth-grade (Nowicki & Strickland, 1973). Nowicki and

Strickland reported on several studies that found significant test-retest reliability for the CNS-IE. One study was based on 457 institutionalized children (ages 7 through 14) over a one year period. Another study found a test-retest reliability of .63 over a nine month time period for children in grades 3 through 6 (N = 202). A test-retest reliability coefficient of .67 over a six week period for grade 3 and 4 subjects (N = 80) was also reported.

To investigate the construct validity of the CNS-IE, its relation to other measures of locus of control were examined (Nowicki & Strickland, 1973). The relation to the Intellectual Achievement Responsibility Questionnaire (Crandall, Katkovsky, & Crandall, 1965) was examined first. In a sample of black third- (N = 182) and seventh-graders (N = 171), the correlations were $\underline{r} = .31$, $\underline{p} < .01$ for the third grade; for the seventh grade, $\underline{r} = .51$, $\underline{p} < .01$. Nowicki and Strickland also reported the correlation with the Bialer-Cromwell Scale (1961) to be significant ($\underline{r} = .41$, $\underline{p} < .05$) in a sample of white children (N = 29) aged 9 through 11. Other construct validity studies were provided by the authors.

MacDonald (1973) reported that the CNS-IE was developed carefully by researchers of solid reputation. This test has been used in many studies and results presently available indicate the scale to have adequate internal consistency. The author also reported that data relevant to divergent and convergent validity are encouraging. According to MacDonald, it appears that the CNS-IE is the best measure of locus of control as a generalized expectancy available for children.

Data Collection Procedures

A testing room was secured at each school. The researcher called for the subjects in their respective classes and escorted them to the testing room. This time was used to put the subjects at ease and to establish rapport prior to the actual testing.

All of the subjects were administered the Children's Nowicki-Strickland Internal-External Control Scale. The following instructions were given by the researcher prior to administration of the scale:

> This is not a test; it is part of a study to find out what kids your age think about certain things. This questionnaire contains some questions which can be answered "Yes" or "No". There are no right or wrong answers to these questions. Some kids say "Yes" and some say "No".
>
> When I read a question, if you think the answer should be "Yes" or mostly "Yes", say "Yes". If you think the answer should be "No" or mostly "No", say "No". Here is a sample question:
>
> "Can you choose who your friends will be?"
>
> If you think you can choose who your friends will be then you would say "Yes". If you think you cannot choose who your friends will be then you would say "No". Remember, different kids give different answers. You answer depending on how you think the question should be answered.

The instrument was administered individually to each handicapped subject. The researcher read orally each question and marked the scoring sheet (see Appendix C). For the normally achieving subjects, the instrument was administered in small groups. The researcher read orally each question and each of the subjects marked their own scoring sheet. Each testing session lasted approximately fifteen minutes.

Statistical Analysis

Data were coded and analyzed using a computerized statistical package. The Statistical Analysis System (SAS, 1982) program for analysis of variance was used. The analysis of variance was used to test the significance at the .05 level of each hypothesis stated as measured by the Children's Nowicki-Strickland Internal-External Control Scale.

Where the statistical analysis indicated significant differences between the means, a multiple comparison technique was used. This was done to determine where the differences actually existed. The Ryan-Einot-Gabriel-Welch Multiple Range Test (REGWQ) was the test utilized within the SAS package.

CHAPTER IV

RESULTS

Introduction

The results of the study are presented in this chapter. This chapter is divided into four sections. The first section is a brief description of the purpose of the study. The second section contains the results of the statistical analyses of the two hypotheses. Other variables (i.e., grade, mean scores) are analyzed and presented in the third section. The fourth section summarizes the results.

Purpose of the Study

The purpose of this study was to investigate the nature of locus of control in educable mentally retarded, learning disabled, emotionally disturbed, and normally achieving students. In other words, which students were more or less externally oriented? The subjects were 151 sixth-, seventh-, and eighth-grade male students enrolled in special education and regular education public school classes.

The Children's Nowicki-Strickland Internal-External Control Scale was administered to each subject. The scores obtained on this instrument constituted the data used in this research investigation. The data were studied and analyzed to determine if there were significant differences at the .05 level among the educable mentally retarded, learning disabled, emotionally disturbed, and normally achieving students.

Evaluation of Hypotheses

Hypothesis 1: There will be significant differences in locus of control orientation among educable mentally retarded, learning disabled, and emotionally disturbed students.

a. Educable mentally retarded students will be more externally oriented than either emotionally disturbed or learning disabled students.
b. Emotionally disturbed students will be more internally oriented than mentally retarded students and more externally oriented than learning disabled students.
c. Learning disabled students will be more internally oriented than either emotionally disturbed or mentally retarded students.

In order to determine if there were significant differences among educable mentally retarded, emotionally disturbed, and learning disabled students in locus of control orientation as measured by the Nowicki-Strickland Internal-External Control Scale (CNS-IE), it was necessary to perform an analysis of variance (ANOVA). A two-way ANOVA by grade and category was performed. The results of the ANOVA are presented in Table 2. The resulting F ratio ($F = 6.04$) for category was significant at the .05 and .01 level of significance; $p < .004$ (using SAS, Type III sums of squares, 1982). All other F-tests were nonsignificant ($p > .05$).

The results of the ANOVA revealed that differences in locus of control orientation did exist among the educable mentally retarded, emotionally disturbed, and learning disabled students. Therefore, to determine where the differences actually existed the Ryan-Einot-Gabriel-Welch (REGWQ) Multiple Range Test (SAS, 1982) was utilized. This information is presented in Table 3.

The results of the REGWQ revealed that the educable mentally retarded students did differ from the emotionally disturbed and the

Table 2

ANALYSIS OF HANDICAPPED GROUP DIFFERENCES

Source	df	SS (Type III)	MS	F
Category	2	178.296	89.148	6.04**
Grade	2	32.828	16.414	1.11
Category * Grade	4	57.387	14.346	.97
Error	63	929.97	14.761	
Total	71	1200.611		

**$p < .004$ (using SAS, Type III Sums of Squares, 1982)

Table 3

Multiple Comparison of the Means of the CNS-IE for the MR, ED, LD Students

REGWQ Grouping	Mean	N	Category
A	18.640	25	MR
B	16.318	22	ED
B	14.920	25	LD

Means with the same letter are not significantly different

learning disabled students. In other words, the educable mentally retarded students were more externally oriented than either the emotionally disturbed or learning disabled students. Further, the REGWQ revealed that the emotionally disturbed and learning disabled students did not show significant differences. In other words, the emotionally disturbed students were not more externally oriented than the learning disabled students and the learning disabled students were not more internally oriented than the emotionally disturbed students.

Hypothesis 2: There will be significant differences in the locus of control orientation among educable mentally retarded, emotionally disturbed, learning disabled, and normally achieving students. That is, educable mentally retarded, emotionally disturbed, and learning disabled students will be more externally oriented than normally achieving students.

As was done with the handicapped subjects, an analysis of variance was utilized to determine if there were significant differences among the handicapped and normally achieving subjects. The results of the ANOVA are presented in Table 4. The resulting F ratio ($F = 27.74$) for category was significant at the .05 and .01 level of confidence; $p < .0001$ (using SAS, Type III sums of squares, 1982). All other F-tests were nonsignificant ($p > .05$).

The results of the ANOVA revealed that differences did exist among the handicapped and normally achieving subjects. Again, the REGWQ was utilized to determine where the differences actually existed. This information is presented in Table 5.

The results of the REGWQ revealed that the educable mentally

Table 4

ANALYSIS OF HANDICAPPED AND NORMAL GROUP DIFFERENCES

Source	df	SS (Type III)	MS	F
Category	3	1272.322	424.107	27.74**
Grade	2	36.043	18.021	1.18
Category * Grade	6	72.251	12.041	.79
Error	139	2125.25	15.289	
Total	150	3640.397		

**p <.0001 (using SAS, Type III sums of squares, 1982)

Table 5

Multiple Comparison of the Means of the CNS-IE
for Handicapped and Normally Achieving Subjects

REGWQ Grouping	Mean	N	Category
A	18.640	25	MR
B	16.318	22	ED
B	14.920	25	LD
C	10.924	79	NA

Means with the same letter are not significantly different

retarded, emotionally disturbed, and learning disabled students did differ from the normally achieving students in locus of control orientation. The handicapped students were more externally oriented than the normally achieving students.

Because of the unequal sample sizes (N = 25, N = 22, N = 25, N = 79), another ANOVA was performed to confirm that significant differences also existed when the educable mentally retarded, emotionally disturbed, and learning disabled subjects were grouped together (N = 72) and compared to the normally achieving subjects (N = 79). The results of the ANOVA are presented in Table 6. The resulting F ratio (F = 71.92) for category was significant at the .05 and .01 level; $p < .0001$ (using SAS, Type III sums of squares, 1982). All other F-tests were nonsignificant ($p > .05$). The results of the ANOVA confirmed that differences did exist among the handicapped and normally achieving subjects.

Analysis and Presentation of Other Variables

An analysis of variance was utilized to determine if significant differences existed among grade levels. The results of the ANOVA (Refer to Table 2, Table 4, and Table 6) revealed that a difference did not exist. The mean scores by category and grade level are presented in Table 7.

A box and whisker plot (Tukey, 1977) was performed to provide a graphic representation of the distribution of scores by grade and category. The presentation is found in Appendix D.

Table 6

ANALYSIS OF HANDICAPPED AND NORMAL GROUP DIFFERENCES

Source	df	SS (Type III)	MS	F
Category	1	1178.995	1178.995	71.92**
Grade	2	25.277	12.638	.77
Category * Grade	2	7.430	3.715	.23
Error	145	2377.146	16.394	
Total	150	3640.397		

**$p < .0001$ (using SAS, Type III sums of squares, 1982)

Table 7

MEANS AND STANDARD DEVIATIONS OF CNS-IE SCORES FOR HANDICAPPED AND NORMALLY ACHIEVING STUDENTS: GRADES 6 THROUGH 8

	Educable Mentally Retarded			Emotionally Disturbed			Learning Disabled			Normally Achieving		
Grade	M	SD	N	M	SD	N	M	SD	N	M	SD	N
6	18.75	3.59	4	16.83	3.71	6	15.2	3.96	5	10.36	3.91	19
7	19.5	3.86	10	15.42	4.31	7	16.23	3.03	13	11.41	3.81	31
8	17.81	3.18	11	16.66	4.74	9	12.28	4.49	7	10.75	4.14	29

Summary

Chapter IV has presented the results of the study, which was based on the data gathered involving 151 handicapped and normally achieving male students in grades 6 through 8. The students had been administered the Children's Nowicki-Strickland Internal-External Control Scale.

The statistical analyses of the hypotheses revealed that (a) significant differences did exist among the educable mentally retarded, emotionally disturbed, and learning disabled students and (b) significant differences did exist among the handicapped and normally achieving students. Since differences were revealed, further analyses were performed to determine where the differences actually existed. The researcher found that (a) the educable mentally retarded students were more externally oriented than the emotionally disturbed and learning disabled students, (b) the emotionally disturbed students were more internally oriented than the educable mentally retarded students but not more externally oriented than the learning disabled students, (c) the learning disabled students were more internally oriented than the educable mentally retarded students but not more internally oriented than the emotionally disturbed students, and (d) the educable mentally retarded, emotionally disturbed, and learning disabled students were more externally oriented than the normally achieving students. No significant differences were found to exist for grade level.

Conclusions and implications of this study are presented in the following chapter. Also included in Chapter V is a summary of the findings of the study and recommendations for future research.

Chapter V

DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

In this chapter a discussion of locus of control orientation in educable mentally retarded, emotionally disturbed, learning disabled, and normally achieving students is presented. The first section contains a summary of the findings of the study. An interpretation of the results is presented in the second section. The third section contains a discussion of educational implications. Recommendations for future research are presented in the fourth section. Finally, the conclusions of the study are summarized.

Findings

The results of testing the two hypotheses of this study revealed the following findings.

1. There was a significant difference in locus of control orientation among educable mentally retarded, emotionally disturbed, and learning disabled students. Further analysis disclosed that educable mentally retarded students were more externally oriented than emotionally disturbed and learning disabled students. There was no significant difference among emotionally disturbed and learning disabled students.

2. There was a significant difference in locus of control orientation among educable mentally retarded, emotionally disturbed, learning disabled, and normally achieving students. Further analysis revealed

that educable mentally retarded, emotionally disturbed, and learning disabled students are more externally oriented than normally achieving students.

Additionally, statistical analyses were conducted on grade level. No significant difference was found to exist for grade level.

Interpretations

The results of this study comparing the locus of control orientation of educable mentally retarded, emotionally disturbed, and learning disabled students produced several findings. As predicted, educable mentally retarded students were found to be more external in their locus of control orientation than emotionally disturbed or learning disabled students. Educable mentally retarded students have typically been placed in highly structured, controlled classroom environments giving them less opportunity to assume personal responsibility (Lawrence & Winschel, 1975). Additionally, inherent in their need for special education is the fact that these students have a history of academic failure. This history of failure experiences may result in a sense of helplessness in the mentally retarded (Floor & Rosen, 1975). Although not addressed in this study, IQ may have been an influencing factor. Present data did not permit an analysis of the effect of IQ on locus of control, however, according to the school district's guidelines, these students had IQ scores ranging from 75 to 50. An unexpected finding in this study was that no significant differences were evident in locus of control orientation among emotionally disturbed and learning disabled students. The researcher predicted that emotionally disturbed students would be more externally oriented than

learning disabled students. Although not statistically significant, the data (external scores) pointed in the direction of greater external control for the emotionally disturbed students. The fact that differences could not be statistically supported may have been the result of the identification procedures. In other words, because learning disabled students often manifest emotional problems there may be students who are identified as being emotionally disturbed when in fact they are learning disabled. Some support for this notion was demonstrated by several teachers of the emotionally disturbed students. The teachers mentioned to the researcher that certain emotionally disturbed students were either being moved to classes for learning disabled students or were being reevaluated with the possibility of being moved to classes for learning disabled students.

When comparing locus of control orientation among educable mentally retarded, emotionally disturbed, learning disabled, and normally achieving students, the findings of this study revealed that handicapped students were more externally oriented than normally achieving students. These results support earlier research studies (Fox, 1972; Gardner, Warren & Gardner, 1977; Harrow & Ferrante, 1969; Nelson, Finch, Montgomery & Bristow, 1975; Scott & Moore, 1980; Snyder, 1982) that found handicapped subjects to be more externally oriented than nonhandicapped subjects. It appears from these findings that educable mentally retarded, emotionally disturbed, and learning disabled students believe that events happen to them as a function of chance, environmental pressures, or other individuals such as parents, teachers, and friends. In other words, handicapped students are more likely

to see their lives as controlled by fate, luck, or other people. Normally achieving students on the other hand may believe that events happen to them as a function of their own abilities and efforts.

Although the hypotheses in this study did not specify grade differences, this variable was analyzed. The findings revealed that there were no significant differences for grade level. This appears to contradict other studies in Chapter II which demonstrated that internality in locus of control orientation increased with age. However, the fact that differences among grade levels could not be statistically supported in this study may have been the result of the limited grade range (6 through 8) and sample size. Perhaps a comparison of elementary grades, junior high grades, and high school grades would have revealed differences. An examination of the mean scores of the handicapped subjects by grade level revealed a tendency for the scores to be less external from grade 6 to grade 8, particularly for learning disabled students. This tendency was not evident for normally achieving students.

Educational Implications

There are at least three important educational implications drawn from the results of this research. These are presented in this section.

First, educators should develop an awareness of the role of locus of control in learning. University teacher training programs and in-service training programs may be avenues for providing an understanding of the locus of control construct and its relationship to learning. The importance of educators reviewing the research that has been presented on this construct needs to be emphasized.

Second, educators should assist handicapped students in understanding that they are primarily responsible for their own actions and for events in their lives. Handicapped students should be assisted in understanding that their actions and the events in their lives are not altogether dependent on luck, fate, or other people. These students must be helped to see the relationship between their behavior and its consequences, and to assume responsibility for both.

Third, educators should utilize teaching strategies aimed at shifting locus of control orientation in handicapped students from externality to internality. Education programs should strive to provide handicapped students with a feeling of control over their own lives. Some specific strategies that can be utilized are guiding the handicapped student in establishing goals, monitoring progress, and identifying the consequences of goal attainment. Several studies reviewed in Chapter II discussed promising strategies for changing locus of control orientation.

Because studies (Chan, 1978; Gardner, 1974; Hisama, 1976; Lefcourt, 1982) with nonhandicapped subjects have demonstrated that these subjects are better able to adjust to and learn from their surroundings, engage in achievement-related activity, and perform better in school than handicapped subjects, there are indirect implications inherent in this study. Consequently, the results of this study suggest that handicapped students' locus of control orientation may influence their ability to adjust to the school environment, particularly when mainstreamed, and may also effect their academic success and failure. Therefore, the construct is very important to special

education. Educators must consciously strive toward developing internality of locus of control in handicapped students.

Recommendations for Future Research

Based on the information from this study, recommendations for further research are:

1. Since this study has shown that no significant differences existed in locus of control orientation among emotionally disturbed and learning disabled students, further research may need to focus on these two particular groups. Because there was some question regarding the identification of these two groups, future research should focus on a more specific identification procedure.

2. Because significant differences were found to exist for the mentally retarded subjects but not for emotionally disturbed and learning disabled subjects, future research may need to consider the influences of IQ.

3. Future research should include a broader range of grade levels. Although grade level differences were not evident in this study, there was a tendency for the handicapped students in the upper grade to be more internal in their locus of control orientation.

4. The Children's Nowicki-Strickland Internal-External Control Scale is a generalized measure of locus of control orientation. Future research should investigate the notion of a generalized locus of control orientation versus an academic locus of control orientation. Such research could determine if handicapped students exhibit a more external orientation in academic settings as compared to social settings.

5. Continued research is needed in school settings to understand the best ways in which to bring about change in locus of control orientation.

6. Since this study used only male subjects, future research should use female subjects to investigate gender differences.

Conclusions

Based on the findings of this study, the following conclusions were reached:

1. Educable mentally retarded students are more externally oriented than emotionally disturbed and learning disabled students.

2. Emotionally disturbed and learning disabled students do not differ in locus of control orientation.

3. Handicapped students are more externally oriented than nonhandicapped students.

4. Internal-external locus of control orientation does not significantly change from grade 6 to grade 8.

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APPENDIX A

LETTER OF PARENTAL CONSENT

PARENTAL CONSENT FORM

Dear Parent:

In an effort to improve our understanding of the ways in which children learn, a research study will be conducted with sixth, seventh, and eighth grade students in regular and special education classes. This study will examine reasons students give for their successes and failures. This study is important because it will assist teachers in developing instructional materials more directly related to the students' needs.

This study requires administering a short, simple yes/no questionnaire to each student. A typical question might be:

> "Do you believe that if somebody tries hard enough he or she can pass a test?"

Responses will be recorded in such a manner that the child's name is not on the responses. This will insure that all information regarding you and your child remains confidential.

In order for your child to participate in this study, we must have your permission. This study has been approved by the administration of the _____ Public Schools. If you are willing to have your child participate please sign the permission slip below and return it to your child's classroom teacher as soon as possible. Your cooperation is greatly appreciated.

Sincerely,

Catherine J. Coggins
Instructor, Department of Special Education
University of Oklahoma
Phone: 325-4842

My child, _____, has my permission to participate in the study being conducted by Catherine J. Coggins. I understand that my child and I reserve the right to withdraw from the study at any time. By signing this consent form I do not waive any of my legal rights.

Child's Name:_____School:_____

Parent's Signature:_____

APPENDIX B

TESTING INSTRUMENT

PLEASE NOTE:

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These consist of pages:

65-67

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300 N. ZEEB RD., ANN ARBOR, MI 48106 (313) 761-4700

APPENDIX C

SCORING SHEET

NOTE: CIRCLED ITEMS ARE THE EXTERNAL ANSWERS LD ED MR NA

Student I D No. _____ Grade: _____

(1) (Y) N	(2) Y (N)	(3) (Y) N	(4) Y (N)
(5) (Y) N	(6) Y (N)	(7) (Y) N	(8) (Y) N
(9) Y (N)	(10) (Y) N	(11) (Y) N	(12) (Y) N
(13) Y (N)	(14) (Y) N	(15) Y (N)	(16) (Y) N
(17) (Y) N	(18) (Y) N	(19) (Y) N	(20) Y (N)
(21) (Y) N	(22) Y (N)	(23) (Y) N	(24) (Y) N
(25) Y (N)	(26) Y (N)	(27) (Y) N	(28) Y (N)
(29) (Y) N	(30) Y (N)	(31) (Y) N	(32) Y (N)
(33) (Y) N	(34) Y (N)	(35) (Y) N	(36) (Y) N
(37) (Y) N	(38) Y (N)	(39) (Y) N	(40) Y (N)

APPENDIX D

BOX AND WHISKER PLOT

DISTRIBUTION OF SCORES BY GRADE AND CATEGORY

DISTRIBUTION OF SCORES BY GRADE AND CATEGORY

