THE RELATIONSHIP OF LOCUS OF CONTROL ORIENTATION TO
THE ACADEMIC ACHIEVEMENT OF DOCTORAL STUDENTS

DISSERTATION

Presented to the Graduate Council of the
North Texas State University in Partial
Fulfillment of the Requirements

For the Degree of

Doctor of Philosophy

By

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May, 1987

This study sought to determine the extent a relationship exists between locus of control and the rate of completion for proposal and dissertation defense among doctoral students. Levenson's Internal, Powerful Others, and Chance scales were utilized to identify locus of control orientation.

The sample consisted of 105 doctoral candidates in the College of Education, North Texas State University, who had completed their qualifying examination within the time period, September, 1983 to August, 1985. Responses to Levenson's scales were compared to individual degree progress.

Findings indicated that: (1) a majority, 102, scored highest on the Internal scale; (2) Internal scale scores above the median related to increased probability of a proposal and dissertation defense and to reduced time in reaching those points; (3) no significant difference was found between male and female defensive externals in completing the proposal or dissertation
defense; and (4) females tended to score higher than males on the Internal scale.

Among conclusions drawn are: (1) Internal scale scores above the median relate to a reduced length of time to complete the proposal and dissertation defense; and (2) few doctoral candidates scoring higher on the Powerful Others or Chance scales were identified in this doctoral program after the point of qualifying examinations.

Recommendations are for: (1) research to determine if Internal, Powerful Others, and Chance scale scores differ among doctoral disciplines; (2) utilization of Levenson's scales at the onset of the doctoral program; (3) research that examines attitudes toward degree completion and the values placed on the doctoral degree; (4) universities to consider the doctoral completion rate in program evaluation; (5) universities should evaluate the reasons for student attrition from doctoral programs; and (6) universities should develop ways to track doctoral candidates and facilitate program completion; (7) related research to explore possible differences between native Americans and international students; and (8) related research to examine possible differences among students of various disciplines within the College of Education.
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CHAPTER I

INTRODUCTION

It has been universally recognized that the relationship between reward and reinforcement is a highly critical one, particularly in the arena of academic achievement, both in its acquisition and in performance of skills and knowledge. Some individuals may regard an event as a reinforcement, while others may perceive the situation quite differently.

The concept of locus of control was developed out of social learning theory (Rotter, 1954) and refers to the extent to which an individual feels personal control over life circumstances. When an individual perceives that a reinforcement has followed some personal action but is not entirely contingent upon that action, then this is typically considered to be a result of luck, or fate, or as dependent upon powerful others, or as totally unpredictable. An individual interpreting a situation in this mode is considered to hold a belief in external control. Opposite to this is the belief in internal control, whereby an individual perceives that a
situation is contingent upon personal behavior or inherent personality characteristics. Internals tend to believe that they have at least some control over their own destiny and are to some extent responsible for their receiving rewards or reinforcements. They believe in their capacity to decide their own fate and usually portray initiative in their actions.

There is a trend in the literature which may indicate that the perception of locus of control is related to academic achievement. Because internals believe that reinforcements are contingent upon their own behavior, they would be expected to strive more overtly to achieve their goals, thereby demonstrating greater academic success. Individuals must entertain some hope that their efforts can be effective before they make the necessary sacrifices for achievement. Opportunities for achievement require a degree of self-management and a conscious effort. Such a sacrifice may be improbable if an individual entertains doubts about his own potential effectiveness. It is plausible to assume that internals are more accustomed than externals to engaging in the making of long-range plans. Distant goals require the sacrifice and postponement of immediate pleasures.

Lefcourt (1972) states that better-educated and more achievement-oriented individuals seem to be both more
internal and more willing to delay gratification. Externals, on the other hand, may have difficulty with such a process, as they are more inclined to believe that daily events occur by some nonpredictable design. Long range projects, it seems, would be more likely to attract and involve those who feel relatively secure in their world and who feel fairly confident in their ability to succeed in a task.

It does not seem logical that an individual who believes that uncertainty will be encountered on a daily basis would take on long-range goals that require a great deal of commitment. In order to explain the reasons for the internal's tendency to obtain higher academic achievement than externals, one may look at studies which investigate motivational and cognitive differences between internals and externals. The majority of the evidence suggests that the perception of locus of control may have an impact on an individual's motivational and cognitive reactions. These perceptions may influence an individual's achievement performance.

A long-range goal, such as the completion of a doctoral degree, requires, in addition to many other factors, a great deal of deliberate planning, determination and tenacity. This is particularly true after the student has completed the course work. At
this point, planning and initiative become of paramount importance for the final carry-through needed to reach the checkpoints of successfully completing the qualifying examinations, the proposal defense and dissertation defense.

If it is indeed true that a difference exists between internals and externals in terms of the length of time needed in reaching these checkpoints, then perhaps appropriate and facilitative intervention could be provided by educators to reduce the number of students who fall short of receiving a doctoral degree because these final steps have not been mastered. Bar-Tal and Bar-Zohar (1977) believe that the research evidence suggests that perception of locus of control is related to academic performance in such a way that individuals with internal orientation tend to perform better on academic tasks than those with an external orientation. The significant decision to be made is whether or not to accept the concept that locus of control orientation is determined, at least partially, by situational factors. If accepted, then there are possibilities for changing individuals' perceptions by modifying their environment.

The Problem
What is the relationship between locus of control and the academic achievement of doctoral students; and to
what extent does locus of control contribute to the
completion of the proposal defense and dissertation
defense?

Purposes of the Study

The purposes of this study were to examine:

1. The length of time spent by internals and externals in successfully completing the goals of proposal defense and dissertation defense after passing their qualifying exams;

2. Whether or not internals require less time in reaching these goals than externals;

3. Whether or not defensive externals reach these goals before congruent externals; and

4. Whether there exists a time difference in terms of rate of completion of proposal defense and dissertation defense between male and female students.

Hypotheses

To achieve the purposes of this study, the following hypotheses were tested:

1. Internals will complete their proposal defenses in less time than the computed group mean time for all subjects;

2. Defensive externals (as determined by the Powerful Others scale) will complete their proposal
defenses before the mean time period for congruent externals (as determined by the Chance scale) and after the mean time period for internals;

3. Internals will defend their dissertations prior to externals who predominantly score on either the Powerful Others or the Chance scales; and

4. In all situations (Hypotheses 1, 2, and 3) female defensive externals will be significantly further along in terms of time on both proposal defense and dissertation defense as compared to male defensive externals.

Significance of the Study

The proposed study examined the relationship of locus of control to the academic achievement of doctoral students. Too little research has addressed this relationship involving what is usually considered an elective degree as opposed to a more socially required degree such as the baccalaureate.

There also has been a dearth of studies addressing the role of defensive externality and the resulting differences between males and females. This study employs the use of Levenson's scales which distinguish between the two types of externals - congruent and defensive. The majority of past research has usually
involved Rotter's I-E scale, which does not assist in clearly making this distinction.

Information derived can be of assistance in helping students to understand their progress through the doctoral process and can also help to facilitate the completion of doctoral degrees. Providing structure for the student as needed can perhaps facilitate goal attainment during the final stretch of a long academic process.

Definition of Terms

1. Academic Achievement.—A doctoral student is considered to have reached this state upon successfully completing each of the milestones of proposal defense and dissertation defense.

2. Locus of Control.—Levenson defines external control as an individual's perception that reinforcement is a result of forces beyond one's control or due to luck, chance or fate. Internal control is defined as a belief that an event is contingent upon one's own behavior or one's own relatively permanent personality characteristics or attributes.

3. Defensive Externals.—These individuals have a fairly strong need for achievement but a low expectancy for the attainment of achievement goals and, as a
result, tend to verbalize "external" beliefs as a defense mechanism.

4. Congruent Externals.—These individuals are considered to be true externals in that they believe the world is unordered and that events are a result of chance, luck or fate.

Delimitations

1. The sample included only doctoral level students in the College of Education at North Texas State University who successfully completed the qualifying examination during the time period between September, 1983 and August, 1985.

2. This study was subject to all restrictions established in the literature related to subject volunteerism.

3. Though other variables may influence student attrition from doctoral programs, this study focused solely on locus of control orientation.

Basic Assumptions

The study assumed:

1. That responses given on Levenson's Internal, Powerful Others and Chance scales mailed to students were answered honestly and thus are reflective of their true beliefs; and
2. That the time span studied was a reasonable one in which to expect completion of both the proposal defense and the dissertation defense.

The following chapter provides a review of relevant literature and background information of studies related to locus of control and academic achievement. The chapter includes a discussion of the behavior patterns of internals and externals, as well as these patterns as evidenced in the academic arena. A review is also made of differences between males and females in regard to locus of control orientation and approach to academia.
CHAPTER BIBLIOGRAPHY


CHAPTER II

REVIEW OF THE RELATED LITERATURE

Social learning theory describes how choices are made by individuals from the multitude of alternatives available to them. The emphasis of the theory is on learned social behavior, which assumes that there is unity in personality, and emphasizes both general and specific determinants of behavior. Social learning theory also assumes that there is a purposeful quality to human behavior.

The concept of locus of control emerged from social learning theory. However, social learning theory itself ultimately underwent some modification as a result of an increased understanding of locus of control (Phares, 1976, 10).

Locus of control operates both as a belief directed toward one specific situation and also as a generalized expectancy covering many diverse situations.

If the cues of a specific situation are strong enough, the behavior of most individuals will be similar, regardless of their generalized beliefs. On the other hand, when the situation is ambiguous, the behavior of individuals is much more likely to reflect their generalized locus of control belief (Phares, 1976, 172).
Researchers have shown a great deal of interest in exploring the relationship between locus of control and a variety of other factors. Throop and MacDonald (1971) compiled lists of all major research articles related to locus of control that have appeared through 1969. These include both published and unpublished material totaling over 300 entries. In relation to academic achievement per se, Bar-Tal and Bar-Zohar (1977) have organized a tally sheet revealing the number of studies that have affirmed a locus of control-achievement relationship. Among those 36 investigations, only one reported the lack of a relationship.

A common argument for the expected relationship between internality and academic achievement is based upon the assumption that, if an individual believes that successes and failures are due to the result of personal behavior, that individual will be more likely to exhibit initiative and persistence in seeking achievement goals (Lefcourt, 1976; Rotter, 1966). The person would thereby acquire more information and greater problem-solving skills (McGhee and Crandall, 1968).

Behavior Patterns of Internals and Externals

The way that people account for their successes and failures plays a significant role in the attainment of
excellence. Consistent recourse to external expectations will not lead to the effort required to achieve excellence. Realistic explanations of both internal and external origins must be employed. Attributing all failures to luck or powerful others will not likely lead to the persistence necessary for achievement. On the other hand, always attributing results to internal factors might lead to some guilt that would impair performance (Phares, 1976, 113).

Internals appear to adjust their aspirations upward following a successful performance and downward after failure to a greater extent than do externals, whereas externals adjust their expectancies upward after failure and downward after success (Feather, 1968). Battle and Rotter (1963) and Lefcourt and Ladwig (1965) have also reported a greater incidence of atypical expectancy changes by external subjects. Their findings imply a failure on the part of externals to make systematic use of their prior experience in preparing for the future. Such behavior could only stunt the development of realistic achieving behavior. Lefcourt (1972) and Ryckman, Gold and Rodda (1971) reported similar results.

A related research study concerned with graduate student accomplishment over a five-year span (Otten, 1977) found that a combination of Rotter's I and E scale and an
autobiography measure of locus of control allowed for some prediction of progress in graduate school. Internals were found more likely to have obtained their doctorates in five years or to have dropped out than were externals. Externals were more likely to be still working toward their degrees after five years or had received terminal masters' degrees. Six out of fifteen internal graduate students had received their doctorates within five years, whereas none of the externals had completed their doctoral degrees. Otten thus suggests that one might be tempted to characterize the internals as impatient and the externals as persevering, but perhaps the former have a set of internal goals which dictate to them to "get the degree or get out" while the latter group may be more likely to adopt the external standards of parents, administrators, or others, who might suggest they continue their work even if they have to settle for a terminal masters' degree.

An internal belief system should lead to reactions of pride following success or to the experience of negative emotions following failure. Under either circumstance, the effects on subsequent achievement behavior could well be positive. On the other hand, the belief system of externals denies them either aforementioned emotional experiences, which provides them
little basis for the pursuit of excellence. After all, if an individual ascribes success to outside forces, why should that person take pleasure in the attainment of success or make further efforts to achieve it? (Phares, 1976, 114).

The research to date indicates conflicting theoretical positions which exist with respect to the predicted relationship between locus of control and academic achievement (Keller, Goldman and Sutterer, 1978, 415). Though previous research has been mixed, in consistently demonstrating a significant relationship between locus of control and academic performance, there appears to be a logical extension of the internal-external control construct such that internals would be more successful academically than externals.

Some of the inconsistencies in the research could be due to a variety of factors. These factors could include differences between studies with respect to interactive differences in subjects and methodologies (Cronbach, 1975; Cronbach and Snow, 1977). However, Rotter (1966, 1975) has consistently maintained that there is a theoretical reason for not expecting a consistent relationship to exist between generalized expectancies for locus of control and performance in situations that are familiar to the individual. When an individual is in
a familiar situation, there will be a tendency to base expectancies on actual experiences.

Another source of inconsistencies of findings may be due to an inextricable confounding of variables in much of the research examining the relationship between locus of control and achievement. An alternative theory (Weiner, 1974) predicts that locus of control will be more directly related to attitudes than achievement. Weiner's theory is based on the work of Heider (1958), who suggests that there are four perceived determinants to which an outcome of behavior may be attributed: ability, effort, task difficulty, and luck. According to Weiner et al (1971), a confounding effect occurs in the social learning theory research (Rotter, 1954, 1966) when these four determinants are collapsed into a single dimension of perceived internal (ability and effort) versus external (task difficulty and luck) determinants.

When reviewing the relationship between locus of control and achievement as it applies to adults, there are two limitations on its potential strength. The first limitation involves specificity in that internal-external control attitudes are obviously not generalized across the board. In the highly-structured academic achievement situation, there is probably more specificity determining response than in other kinds of situations (Rotter, 1966, 21).
The second limitation requiring consideration is that, among adult college students, particularly with males, there are more defensive externals, or people who have arrived at an external view as a defense against failure, but who were originally highly competitive. These individuals may still maintain striving behavior in clearly-structured competitive situations, but defensively account for failures by expressed external attitudes (Rotter, 1966, 21).

This limitation that Rotter has raised has been made more manageable and perhaps eliminated with the introduction of Hanna Levenson's Internal, Powerful Others, and Chance scales (I.P.C. scales, 1972). The scales measure a belief in Chance expectancies as separate from a Powerful Others orientation.

The rationale behind this tripartite differentiation stemmed from the reasoning that people who believe the world is unordered (chance) would behave and think differently from people who believe the world is ordered but that powerful others are in control (Levenson, 1972).

In the second case, the reinforcement source is more predictable, and a potential for personal control exists. Powerful Others and Chance orientations represent different beliefs and so, according to Levenson, should not be grouped together under the general heading of external control.
Levenson's I, P, and C scales are a result of a reconceptualization of Rotter's I-E (Internal-External) scale. Levenson questioned the validity of a unidimensional concept and therefore proposed a further refinement of the external dimension. Thus the I, P, and C scales were theoretically and not empirically derived. Since originally designed as a reconceptualization of Rotter's I-E scale, the I, P, and C scales are composed of items adapted from Rotter's scale and a set of statements written specifically to tap beliefs about the operation of the three dimensions of control—internal, powerful others, and chance or fate (Lefcourt, 1981, 17).

Academia and Male and Female Differences

Internals, defensive externals, and congruent externals are all to be found in the academic world. Some are there perhaps due to their own goal or desire for achievement, and others may be there because another individual or perhaps society as a whole has required it or suggested that further pursuit of academics would be a proper action. Defensive externals in the academic world might be highly achievement-oriented, but would rationalize failures by blaming external circumstances. Theoretically, such externals would be more successful academically than "congruent externals." Because
research has indicated that differences between congruent and defensive externals cannot be investigated with Rotter's I-E scale, other instruments, such as Levenson's I, P, and C scales have been developed. Levenson allows the P scales to represent those oriented as defensive externals, while the C scales indicate those oriented as true externals or congruent externals.

Horner (1970) and Thurber's (1972) findings suggest that successful academic attainment is a source of anxiety for many students. Previous research (Phares, Ritchie, and Davis, 1968) would suggest that internals respond to such achievement-related anxiety by action-oriented solutions resulting in greater success and ultimately less anxiety. However, other individuals might adopt an external orientation as a defense against the anxiety associated with possible academic failure. These defensive externals who were initially highly competitive would still maintain a comparatively strong achievement motivation in the clearly-structured, competitive academic situation. They would defensively account for failure by externally controlled attitudes. As a consequence, such individuals who were somewhat similar to internals (e.g., industrious) may be more successful academically than congruent externals or persons whose behavior is consistent with their external
"world view." In comparison to internals, however, defensive externals would demonstrate a somewhat lower level of academic performance. This would be because they adopted a defensive externality as an anxiety-reducing measure, while internals tended to respond to anxiety with task-oriented solutions (Prociuk and Breen, 1975, 549). The situation changes somewhat when comparing the differences between male and female externals.

In a study by Duke and Nowicki (1974), internality was related to high achievement for males and externality for females. It was suggested that females are more likely than males to adopt an expressed external orientation to be congruent with the expected female cultural role of passivity. Expressing an internal locus of control orientation presents a social relationship dilemma for females generally, and for females in competitive-achievement situations involving males specifically (Duke and Nowicki, 1974, 265). Problems of this nature may result in what Horner (1972) has called "fear of success in women."

Also seen as relevant for interpreting the differences in academic performance between males and females is an investigation of conformance versus independence. Externality represents such attitudes as
conformity and dependency, which have been traditionally associated with the female role (Thurber, 1972). As a result, females may be more motivated to adopt defensive externality because it simultaneously can lead to an affirmation of expected feminine attitudes. If such an external orientation effectively deals with achievement-related anxiety in women, it follows that females should show academic performance superior to males, a finding reported by Eiseman and Platt (1968). Prociuk and Breen (1975) utilized Levenson's I, P, and C scales and found male and female internals to be more successful academically than corresponding congruent externals. Results also demonstrated that male and female internals, respectively, achieved a significantly higher level of academic success than corresponding defensive externals (Prociuk and Breen, 1975, 553).

The hypothesis that defensive externals are more successful academically than congruent externals was also supported, as was the hypothesis that female defensive externals are academically more likely to achieve higher grade point averages than their male counterparts. For female defensive externals, the researchers suggested that the greater the belief in control by Powerful Others, the higher the level of academic success. However, for male defensive externals, the relationship between belief
in Powerful Others and academic achievement, while nonsignificant, was the inverse (Prociuk and Breen, 1975, 554).

Locus of Control Orientation as a Defense Mechanism

Some researchers oppose the view that achievement and internality go hand in hand. As Merton (1949) argues, a belief in luck can be a useful defense mechanism that allows a person to preserve self-esteem in the face of failure. A belief in external control can also serve other functions: it can provide a realistic assessment of injustice in a socially divided society by pointing out systematic social forces that inhibit the power of the people; it can serve as a necessary step toward politicization and social action by redirecting blame from the individual to the social system; it can enable persons to take effective action concerning their personal lives by realizing that failure in the past was due to circumstances that may no longer exist; and it can provide a basis of integration by bringing together a group that has experienced similar external pressures or obstacles. In some situations a belief in external control may be associated with preservation of self-esteem, ambition, achievement, social solidarity and political action (McLaren, 1982, 236). Though this point
of view is not predominant, it is certainly an admonition against addressing the relationship between locus of control and academic achievement in too simplistic a manner.

The research in this area continues to increase, but generally the data support that internal beliefs are significantly related to academic achievement. Locus of control generally relates to performance but does not relate so consistently to measures of motivation. Internals tend to show superior academic achievement (Phares, 1976, 111).
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CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

A non-parametric exploratory study was conducted to examine the relationship between academic achievement and locus of control in doctoral students. Levenson's scales were utilized to show the relationship between academic achievement and Internal, Powerful Others (defensive externality), and Chance (congruent externality) orientations.

Research Procedures and Design

In February, 1986, permission was received from the Coordinator for Graduate Affairs in the College of Education, as well as the NTSU Attorney, to access doctoral student records in the College of Education during the period of September, 1983 through August, 1986. The information required from these records included student names, addresses, and the dates on which each completed the qualifying examination, proposal defense and dissertation defense. Some students could have completed all three steps and some only one step during this specific time period.
Data were compiled separately for males and females. The researcher organized all raw student data, as no information of this type had been compiled at the NTSU College of Education. After the data were compiled, it was organized on a time line with the September, 1983, and August, 1986 dates as beginning and ending dates, respectively. The beginning and ending months were selected on the basis of the academic semester.

All doctoral students who successfully completed their qualifying examination within the time period from September, 1983 through August, 1985 were mailed Levenson's I, P, and C scales. Dr. Hanna Levenson had given permission to utilize her scales. In this way it was felt that students taking the qualifying examination as late as August, 1985 had at least an additional year, through August, 1986, to complete a proposal and dissertation defense. By the end of three weeks, the scales were mailed again to those who had not yet responded, along with a reminder to complete and return them. A stamped, addressed envelope was included in both mailings.

Instrumentation

Because of its unique distinction between externals, Levenson's scales assist in delineating a more true relationship and increased interplay between locus of
control and academic achievement. Each of the I, P, and C scales consist of eight items in a Likert-type format. The scales comprise several items adapted from Rotter's I-E scale, and a set of statements written specifically for the new scales. The items on Levenson's scales differ from Rotter's in several ways.

1. They are presented as a Likert-type scale, instead of a forced choice format, so that the three dimensions, Internal, Powerful Others, and Chance, are more statistically independent of one another.

2. Levenson's scales make a personal-ideological distinction. All statements are phrased so as to pertain only to the respondent. An individual considers personal feelings, not what he or she perceives to be the case for "people in general."

3. The items in the scales contain no wording that might imply modifiability of the specific issues.

4. The scales are constructed in such a way that there is a high degree of parallelism in every three-item set (Levenson, 1974, 378).

The I scale measures the extent to which people believe that they have control over their own lives; the P scale deals with Powerful Others, e.g., "In order to have my plans work, I make sure that they fit in with the desires of people who have power over me"; and the C
scale is concerned with perceptions of chance control, e.g., "It's not wise for me to plan too far ahead because many things turn out to be a matter of good or bad luck."

Correlations on Levenson's instrument compare to Rotter (1966) and other researchers. In a student sample (n = 152), Kuder-Richardson reliabilities yielded .64 for the I scale, .77 for the P scale, and .78 for the C scale (Levenson, 1974). Split-half reliabilities (Spearman-Brown) are .62, .66, and .64 for the I, P, and C scales.

The validity of the scales has been demonstrated primarily through convergent and discriminant methods (Campbell and Fiske, 1959) that are designed to show significant low-order correlations with other measures of the general construct, as well as a pattern of theoretically expected positive and negative relationships with other variables (Lefcourt, 1981, 23).

The Sample

The population employed in this dissertation consisted of all doctoral level students in the College of Education of North Texas State University, Denton, Texas, who had successfully completed the qualifying examinations during the period of September, 1983 through August, 1985.

These doctoral candidates were asked to voluntarily
complete Levenson's I, P, and C scales. At least fifty students were expected to participate in the study. The total population consisted of 169 doctoral candidates.

Procedures for Treatment of Data

Responses on the I, P, and C scales were scored according to Levenson's instructions. Each response to each item was added with the total sum added to a constant of 24 to eliminate negative values. Each scale ranged from 0 to 48.

This study researches the relationship potentially existing between two variables. The first variable, time of task completion (or achievement) was employed as the dependent variable. The tasks themselves included completion of the respondent's proposal defense and/or dissertation defense between the dates from September, 1983 through August, 1986.

The second variable studied was the respondents' perceptions of their locus of control relevant to their expectations for task completion. The locus of control data was nominal scale in nature and was utilized herein as the independent variable.

Chapter IV presents the analyses of the data using the Chi Square nonparametric test of significance. Chapter V then follows with conclusions and recommendations based on the findings in this study.


CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

A non-parametric approach was used to investigate the relationship between locus of control and the academic achievement of doctoral students. Locus of control was measured by Levenson's I, P, and C scales and achievement was measured by the time needed to complete a proposal defense and dissertation defense following successful completion of the qualifying examinations.

This chapter includes the statistical treatment and analysis of the data collected in this study. The analysis of the results is divided into five sections. The first section describes the population, followed by sections on scoring analysis on Internal, Powerful Others and Chance scales, hypotheses investigation, scoring patterns, and a summary.

Population

The population consisted of all doctoral candidates in the College of Education at North Texas State University who had successfully completed their
qualifying examinations during the period of September, 1983 through August, 1985.

Questionnaires were mailed to the 169 doctoral candidates who had completed their qualifying examinations in one of six examination date groups. Of the students, 93 responded to the first mailing and an additional 23 responded to the follow-up second mailing for a total return of 116 questionnaires. This study thus achieved a response rate of 68.6 percent. Eleven of the returned questionnaires were eliminated from the study because of incomplete responses on Levenson's I, P, and C scales or due to their failure to give the exact dates relative to their proposal and dissertation defense. Thus, the final sample consisted of 105 students or a total rate of return of 62.13 percent. The return rate by date of qualifying exam is presented in Table I.

<table>
<thead>
<tr>
<th>Qualifying Exam Date</th>
<th>Number Taking Exam</th>
<th>Number of Responses Received</th>
<th>Number of Useable Responses</th>
<th>Gender Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 1983</td>
<td>33</td>
<td>21</td>
<td>17</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>March 1984</td>
<td>31</td>
<td>23</td>
<td>19</td>
<td>8</td>
<td>11</td>
</tr>
<tr>
<td>June 1984</td>
<td>28</td>
<td>19</td>
<td>16</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>October 1984</td>
<td>26</td>
<td>19</td>
<td>19</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>February 1985</td>
<td>23</td>
<td>17</td>
<td>17</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>June 1985</td>
<td>28</td>
<td>17</td>
<td>17</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>TOTALS</td>
<td>169</td>
<td>116(69%)</td>
<td>105(62%)</td>
<td>47</td>
<td>58</td>
</tr>
</tbody>
</table>
Examination of the data presented in Table I shows that the qualifying examination groups did not differ significantly in the number \((x^2(5) = .4.4 \ p > .05)\) or in terms of the gender \((x^2(5) = 1.98 \ p > .05)\) of respondents in each group.

In addition, examination of the data concerning the number of students who had successfully defended a proposal and/or dissertation revealed no significant differences between male and female respondents. Table II presents this data.

**TABLE II**

**SUMMARY OF PROPOSAL AND DISSERTATION DEFENSES BY GENDER**

<table>
<thead>
<tr>
<th></th>
<th>Have Defended</th>
<th>Have Not</th>
<th>Have Defended</th>
<th>Have Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal</td>
<td></td>
<td></td>
<td>Dissertation</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30</td>
<td>17</td>
<td>10</td>
<td>37</td>
</tr>
<tr>
<td>Female</td>
<td>35</td>
<td>23</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td>Total N = 105</td>
<td>65</td>
<td>40</td>
<td>26</td>
<td>79</td>
</tr>
</tbody>
</table>

Proposal Defense: Chi Square \(x^2 = .135 \ p = .72\)

Dissertation Defense: Chi Square \(x^2 = .268 \ p = .46\)

Further examination of the rates of proposal and dissertation defense by examination date group revealed no significant differences between the qualifying examination groups in terms of the number of students.
defending their dissertation proposals \( (x^2 = .63 \ p > .05) \).

No significant differences were found to exist between the qualifying examination groups as compared to the number of respondents who defended their dissertations. Students in the March, 1984 group had the highest rate of task accomplishment, with 9 of 12 students or 75 percent, completing their proposal seminars. The second highest rate of task accomplishment was the February, 1985 group with 6 of 11 students (54.54 percent) successfully finishing their proposal defenses. None of the students in the June, 1985 group had defended a proposal.

The average length of time for a student to complete a proposal defense in this study was 303 days for the entire group. In terms of gender, task completion averaged 289 days for male students and 313 days for female students. Only 26 students of the population surveyed completed both their proposal defense and their dissertation defense between the temporal deadlines. The average length of time from proposal defense to dissertation defense was 239 days for these 26 students. The average number of days for male students was 229, and the average number of days for female students was 244.

**Scoring Analysis on Internal Powerful Others and Chance Scales**

Levenson's scales, assessing locus of orientation,
were utilized because of their ability to further differentiate the two types of externals into those classified as congruent or defensive. Congruent refers to that individual who truly believes that external forces affect decisions and outcomes. Defensive refers to that individual who verbalizes external beliefs as a defense mechanism.

Each scale of locus of control ranges from 0 to 48. The scores on each scale then are summed and to that total is added an additional 24 to eliminate negative values. This methodology has been validated by Levenson and is accepted in the literature.

High scores on each subscale are interpreted as indicating high expectations of control by the source designated. Low scores are interpreted to reflect the tendency not to believe in that locus of control. In addition, low scores, such as on the Internal scale, cannot be interpreted as indicating that the respondents believe in chance, but rather that they do not perceive themselves as determining outcomes. Table III gives a summary of the statistical data for each scale. Table IV then provides a summary of the statistical data for each of the qualifying examination groups. These data indicate that the groups are similar in terms of number of participants.
TABLE III

STATISTICAL SUMMARY FOR EACH SCALE

<table>
<thead>
<tr>
<th></th>
<th>Internal Scale</th>
<th>Powerful Others Scale</th>
<th>Chance Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Entire Group</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>105</td>
<td>105</td>
<td>105</td>
</tr>
<tr>
<td>$\bar{x}$</td>
<td>38.943</td>
<td>17.667</td>
<td>12.933</td>
</tr>
<tr>
<td>Mdn</td>
<td>39.000</td>
<td>18</td>
<td>11</td>
</tr>
<tr>
<td>Mode</td>
<td>38</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>S.D.</td>
<td>4.949</td>
<td>9.045</td>
<td>7.641</td>
</tr>
<tr>
<td>Range</td>
<td>26-48</td>
<td>1-42</td>
<td>1-34</td>
</tr>
<tr>
<td><strong>Males</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>47</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>$\bar{x}$</td>
<td>37.8085</td>
<td>19.1702</td>
<td>14.2340</td>
</tr>
<tr>
<td>S.D.</td>
<td>4.6702</td>
<td>9.4024</td>
<td>8.1193</td>
</tr>
<tr>
<td><strong>Females</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>58</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>$\bar{x}$</td>
<td>39.8621</td>
<td>16.4483</td>
<td>11.8793</td>
</tr>
<tr>
<td>S.D.</td>
<td>5.0173</td>
<td>8.6352</td>
<td>7.1281</td>
</tr>
<tr>
<td></td>
<td>Internal Scale</td>
<td>Powerful Others Scale</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td>----------------</td>
<td>-----------------------</td>
<td>----------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>S.D.</td>
<td>No. of Cases</td>
</tr>
<tr>
<td>June 1984</td>
<td>38.8750</td>
<td>4.5880</td>
<td>16</td>
</tr>
</tbody>
</table>
Table IV also indicates that in each examination group subjects tended to score in a similar fashion. For example, in all six data groups, the majority of respondents scored highest on the internal scale and the range was fairly small. No significant differences were found among the groups.

**Internal Scale**

A significant number of females scored higher than males on the Internal scale score. The I scale score did not differ significantly among the qualifying examination date groups.

**Powerful Others Scale**

No significant difference was found with regard to gender and scoring on the P scale. The P scale score did not differ significantly among the qualifying examination date groups.

**Chance Scale**

No significant difference was found in regard to gender and scoring on the C scale. The C scale score did not differ significantly among the qualifying examination date groups.

**Investigation of Hypotheses**

The scores of 105 respondents on the I, P, and C scales were calculated and compared to determine on which
one of the three scales the individual scored the highest number. Tabulation of the findings revealed that 102 students scored higher on the Internal scale; two students scored high on the Powerful Others scale; and one student scored high on the Chance scale.

The overwhelming number of students, 102, scoring highest on the Internal scale, precluded the testing of the four hypotheses as written. Therefore, additional statistical refinement of the data proved necessary. This was accomplished by dividing the subjects into high scale score or low scale score categories by using this division to examine each of the four hypotheses.

Hypothesis 1 was originally stated as: Internals will complete their proposal defenses at or less than the computed group mean time for all subjects.

The findings revealed no significant differences between subjects scoring above or below the median on the length of time taken between their having their qualifying examination and the time of their proposal defense. For the subjects scoring at or below the median on the Internal scale, the average time from qualifying examination to proposal defense was 323 days. For those scoring above the median, the average length of time was 289 days. These data reveal no statistically significant difference. The hypothesis is rejected.
Hypothesis 2 was originally stated as: Defensive externals (Powerful Others scale) will complete their proposals defenses before the mean time period for congruent externals (Chance scale) and after the mean time period for internals.

The mean time on the Internal scale at the median or below was 323.6 days and 289.3 days for scores above the median. The mean time on the Powerful Others scale at the median or below was 285.8 days and 317.7 days for scores above the median. The mean time on the Chance scale at the median or below was 286.5 days and 319 days for scores above the median. The hypothesis is rejected.

Hypothesis 3 was originally stated as: More internals will defend their dissertations than externals who predominantly score on either the Powerful Others or the Chance scales. Of the 26 students who had defended their dissertations, 18, (69.2 percent) scored above the median on the Internal scale as compared to 13 (50 percent) and 12 (46 percent), respectively, for the Powerful Others and Chance scales. The percentages of numbers total slightly greater than 100 percent since some students scored high on more than one scale (see Table V).

A Chi Square test of independent samples was employed to determine if more students who scored above
the median on the Internal scale had defended their dissertations than those who scored above the median on the Powerful Others or Chance scales. This Chi Square test of association was significant at the .05 level. The hypothesis is accepted.

<table>
<thead>
<tr>
<th>TABLE V</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUMMARY OF RESPONDENTS SCORING ABOVE OR BELOW THE MEDIAN</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal Scale</th>
<th>Cases</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median or below</td>
<td>8</td>
<td>30.8%</td>
</tr>
<tr>
<td>Above the median</td>
<td>18</td>
<td>69.2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Powerful Others Scale</th>
<th>Cases</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median or below</td>
<td>13</td>
<td>50.0%</td>
</tr>
<tr>
<td>Above the median</td>
<td>13</td>
<td>50.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chance Scale</th>
<th>Cases</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median or below</td>
<td>14</td>
<td>54.0%</td>
</tr>
<tr>
<td>Above the median</td>
<td>12</td>
<td>46.0%</td>
</tr>
</tbody>
</table>

Multiple comparisons using Marascuilo's Method revealed that a significantly greater percentage of students had a high Internal score (above the median) as compared to the percentage of students scoring above the median on the Powerful Others and Chance scales. From these data, it was also found that of those 65 students who defended their proposals, 40 (61.5 percent) scored above the median on the Internal scale as compared to 34
(52.3 percent) and 32 (49.23 percent) respectively, for the Powerful Others and Chance scales. As shown in Table VI, some of the percentages once again total greater than 100 percent since some students scored high on more than one scale.

<p>| TABLE VI |</p>
<table>
<thead>
<tr>
<th>PROPOSAL DEFENSE COMPLETION RATES AS COMPARED TO I, P, C SCORES ABOVE AND BELOW THE MEDIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internal Scale</strong></td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td>Median or below</td>
</tr>
<tr>
<td>Above the median</td>
</tr>
<tr>
<td><strong>Powerful Others Scale</strong></td>
</tr>
<tr>
<td>Median or below</td>
</tr>
<tr>
<td>Above the median</td>
</tr>
<tr>
<td><strong>Chance Scale</strong></td>
</tr>
<tr>
<td>Median or below</td>
</tr>
<tr>
<td>Above the median</td>
</tr>
</tbody>
</table>

This is similar to the findings found with dissertation completion, though not significant at the .05 level ($x^2 = 2.14$ with 2 df); it nonetheless shows the same pattern.

**Hypothesis 4** was originally stated as: In all situations (Hypotheses 1, 2, and 3), female defensive externals will be significantly further along in terms of time on both proposal defense and dissertation defense as
compared to male defensive externals.

Male students who scored above the median on the Powerful Others scale took 327 days to complete the proposal defense as compared to 309 days for female students. Male students who scored above the median on the Powerful Others scale took 194 days to complete the dissertation defense as compared to 207 days for female students. Chi Square analysis of the mean number of days revealed no significant difference. The hypothesis is rejected. Table VII exhibits the mean number of days by category compared to the time from qualifying examinations to proposal defense.

TABLE VII

SCORING ON POWERFUL OTHERS SCALE COMPARED TO TIME FROM QUALIFYING EXAMS TO PROPOSAL DEFENSE

<table>
<thead>
<tr>
<th>For entire population scoring on Powerful Others scale</th>
<th>Number of Days</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td></td>
</tr>
<tr>
<td>For entire population scoring on Powerful Others scale</td>
<td>302.5077</td>
<td>65</td>
</tr>
<tr>
<td>Male</td>
<td>289.4333</td>
<td>30</td>
</tr>
<tr>
<td>Median or below</td>
<td>240.9231</td>
<td>13</td>
</tr>
<tr>
<td>Above median</td>
<td>326.5294</td>
<td>17</td>
</tr>
<tr>
<td>Female</td>
<td>313.7143</td>
<td>35</td>
</tr>
<tr>
<td>Median or below</td>
<td>318.2222</td>
<td>18</td>
</tr>
<tr>
<td>Above median</td>
<td>308.9412</td>
<td>17</td>
</tr>
<tr>
<td>Total cases = 65</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


As shown in Table VIII, the data reveal that males who scored at the median or below on the Powerful Others scale took an average of 241 days to complete their proposal defenses, as compared to 326 days for males scoring above the median. These data reveal a higher score on the Powerful Others scale which resulted in a greater number of days to complete the defense.

**TABLE VIII**

**SCORING ON POWERFUL OTHERS SCALE COMPARED TO TIME FROM PROPOSAL DEFENSE TO DISSERTATION DEFENSE**

<table>
<thead>
<tr>
<th></th>
<th>Number of Days</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>For entire population</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scoring on Powerful</td>
<td>No. of Days</td>
<td>Cases</td>
</tr>
<tr>
<td>Others scale</td>
<td>Mean</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>229.4000</td>
<td>10</td>
</tr>
<tr>
<td>Median or below</td>
<td>265.2000</td>
<td>5</td>
</tr>
<tr>
<td>Above median</td>
<td>193.6000</td>
<td>5</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median or below</td>
<td>281.5000</td>
<td>8</td>
</tr>
<tr>
<td>Above median</td>
<td>207.1250</td>
<td>8</td>
</tr>
</tbody>
</table>

Total cases = 26

Females who scored at the median value or below on the Powerful Others scale averaged 318 days, as compared to 309 days for females scoring above the median. Thus, unlike the male sample, the score on the Powerful Others
scale was not found to be related to the length of time for reaching one's proposal defense for females.

Examination of the data in Table VIII reveals that males who scored at the median or below on the Powerful Others scale took 265 days to complete their dissertation defense as compared to 194 days for males scoring above the median. This is the reverse of what was observed with the proposal defense. Females who scored at the median or below averaged 282 days, as compared to 207 days for females scoring above the median. Females who scored below the median took a longer time. In other words, scoring above the median on the Powerful Others scale for females meant less time to reach proposal defense.

Scoring Patterns

An analysis of the scoring patterns for the 105 respondents who completed the IPC questionnaire was executed to explore the possibility of a pattern of their scores on the IPC scale and whether or not they completed their proposal or dissertation defense. This analysis examined the scores in relation to the individual medians of each of the three IPC scales. Table IX shows the eight patterns of scores and the number of students placing within each pattern.
TABLE IX

SCORING PATTERNS AND FREQUENCIES OF INTERNAL, POWERFUL OTHERS AND CHANCE SCALES

<table>
<thead>
<tr>
<th>Pattern No.</th>
<th>Each Scale Pattern Divided at the Median</th>
<th>Males</th>
<th>Females</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Powerful Internal</td>
<td>Others Low</td>
<td>Chance High</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>High</td>
<td>Low</td>
<td>High</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>8</td>
</tr>
<tr>
<td>6</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>14</td>
</tr>
<tr>
<td>7</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>Low</td>
<td>High</td>
<td>Low</td>
<td>3</td>
</tr>
</tbody>
</table>

As can be seen from Table IX, a significant difference was found to exist in the number of students in the eight pattern groups ($x^2 = 35.571$ with 7 df and $p < .001$). The highest proportion of respondents placed in groups 1, 4, and 6. Group 1 had 16 students that fell in the High, High, High pattern for each of the I, P, C scales. Group 4 had 27 students that fell in the High, Low, Low pattern. Group 6 had 23 students that fell in the Low, High, High pattern.

The length of time from the qualifying examinations to proposal defense was not significantly different among the qualifying examination groups ($F$ with 7 df = .96), but the number of students who successfully defended their proposals did differ by group membership. Twelve
of the respondents were in Group 1, 18 in Group 4, and 13 in Group 6 with a total N of 65. These three groups comprised by date of qualifying examination taken, accounted for 66 percent of the students who defended a proposal, with 28 percent of them in Group 4.

The length of time from the proposal defense to the dissertation defense was not significantly different among the groups (F with 6 df = 1.76). Of the 26 students who successfully defended a dissertation, 10 were in Group 4, and there were 5 each in Groups 1 and 6. These three groups accounted for 77 percent of the students who defended a dissertation, with 39 percent of them in Group 4. Group 4 and Group 1 are distinguished by having high scores on the Internal scale.

In each case, the majority of students placed in Group 4, which is the High, Low, Low pattern. Though not significant, there appears to be a trend that students with a high internal scale score take less time from qualifying exams to proposal defense as well as from proposal defense to dissertation defense.

Summary

The preponderance of students scored highest on the Internal scale and this precluded the testing of the hypotheses as stated. Subsequently, data analysis was
carried out using the hypotheses as a frame of reference. The scale scores then were differentiated into high and low scores based on the median for each (I, P, C) scale.

Hypothesis 1 was rejected. No significant differences were found between the high and low groups in the respondents' time taken to complete their proposals.

Hypothesis 2 was rejected. No significant differences were found between the respondents' perceived locus of control orientation and the length of time taken to complete their proposal defenses.

Hypothesis 3 was accepted. Those respondents who successfully defended their proposals or dissertations tended to score above the median on the Internal scale.

Hypothesis 4 was rejected. No significant difference between male and female students was found in terms of the number of days needed to complete a proposal or dissertation defense.

In regard to their proposal defense, those males scoring above the median took a longer time to reach completion than did those males scoring below the median. This was not true with females. In contrast, on the dissertation defense, males and females who scored above the median on the Powerful Others scale took less time to complete their dissertation defense.
Finally, attention was given to scoring patterns and their relationship to proposal and dissertation completion. Respondents who completed proposal and/or dissertation defenses tended to be grouped among three different IPC scoring patterns out of eight possible patterns.
CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This study was undertaken to explore the relationship between locus of control and the academic achievement of doctoral candidates. An additional focus of the study was to evaluate the extent to which locus of control contributes to the completion of the proposal defense and dissertation defense. Locus of orientation was determined by use of Levenson's Internal, Powerful Others, and Chance scales.

The purpose of the study was to examine the following four relationships.

1. The length of time spent by internals and externals in successfully completing the goals of proposal defense and/or dissertation defense after passing their qualifying examination.

2. The extent to which internals required less time to accomplish these goals than externals.

3. The extent to which defensive externals reached these goals as compared with congruent externals.

4. The extent to which there existed temporal
differences in terms of rate of completion of the respondents' proposal defenses and dissertation defenses by gender.

Research relevant to the locus of control, the behavioral patterns of internals and externals, the differences found in the academic arena, and social learning theory were surveyed. A review of the literature was made of the (a) locus of control orientation as a defense mechanism, and (b) internal orientation and its role with academic performance.

The study was conducted at North Texas State University in Denton, Texas. Levenson's I, P, and C scales were mailed to all doctoral candidates in the College of Education who had successfully taken their qualifying examination during the period between September, 1983 through August, 1985. A follow-up mail-out questionnaire was made to those who had not returned the questionnaire within three weeks of the initial mailing. Three scores were given to each student, one for each IPC scale. These scores then were compared to the number of days it took the respondents to complete their proposal and/or dissertation defenses. Nonparametric statistical methods were utilized to analyze the findings.
Summary

First, because the scores of the 105 respondents on the I, P, and C scales revealed that 102 subjects scored higher on the Internal scale, with two scoring high on the Powerful Others scale, and only one on the Chance scale, the four hypotheses could not be adequately tested. The score groups on the three (I,P,C) scales therefore could not be compared statistically.

The subjects then were divided into a high scale score or a low scale score using the median score for each (IPC) scale. In this way it was possible to examine each hypothesis. Values at the .05 or less level of significance were reported as significant.

Findings

Analysis of the data presented in Chapter IV yielded the following findings.

1. There were no significant differences between the six qualifying examination groups in regard to number in a group or gender. All of the groups were homogeneous in composition.

2. There were no significant differences found between male and female students regarding their successful defense of a proposal or dissertation after completing the qualifying examination.

3. There were no significant differences found
between the respondents in the six qualifying examination
groups in the number of students defending their
proposals.

4. Significant differences were found to exist
between the IPC groups in terms of the number of students
defending a dissertation with the majority of students
scoring higher on the Internal scale. There was a
significant relationship between gender and Internal
scale score with females scoring higher than males. (a)
No significance was found between the qualifying
examination date groups and the I scale scores. (b)
Though not significant, males as a group scored higher
than females on the Powerful Others scale. (c) No
significance was found between the qualifying examination
date groups and the P scale score. (d) though not
significant, males as a group scored higher than females
on the Chance scale. (e) No statistically significant
relationships were found between the qualifying
examination date groups and the respondents' C scale
scores.

5. There were no significant differences between
subjects scoring above or below the median on the length
of time taken from qualifying exams to proposal defense.
However, those scoring above the median on the Internal
scale did take fewer number of days than those who scored
below the median.
6. There were no significant differences found between the time taken for respondents to pass their proposal defense by defensive externals (those who score high on the Powerful Others scale) as compared to internals or congruent externals.

7. Of the 26 respondents who defended their dissertations, 69.2 percent had an Internal scale score above the median.

8. Though a significant difference was not found, respondents scoring higher on the Internal scale tended to complete a proposal defense more quickly than those scoring high on the Powerful Others or Chance scales.

9. There were no significant differences found to exist between male and female defensive externals in terms of time completion for their proposal or dissertation defense.

10. Significant differences were found in the number of students placing within the eight score pattern groups. The majority of students placed in Groups 1, 4, and 6. Two of the three groups indicated a high Internal scale score. High Internal scores tend to influence doctoral progress. The majority of students who successfully defended a proposal fell into Groups 1, 4, and 6. Two of the three groups indicated a high Internal scale score. High Internal scale scores tend to
influence earlier proposal defense as compared to respondents scoring higher on either the Powerful Others or Chance scales. The length of time from the proposal defense to the dissertation defense was not significantly different among the groups. The majority of the students reaching dissertation defense were placed in Groups 1, 4, and 6. A high Internal scale score tends to influence the likelihood of dissertation defense.

11. In each case, the majority of students placed in Group 4, which is the High, Low, Low pattern, indicating a trend that students scoring above the median on the Internal scale progress more quickly than those scoring on either of the other two scales.

Conclusions

The following conclusions can be drawn from the findings of this study.

1. Internal scale scores above the median tend to influence the successful defense of a dissertation proposal or the dissertation. In each case, only those above the median successfully defended a proposal or dissertation.

2. The majority of doctoral students in this sample in the College of Education at North Texas State University score predominantly on the Internal scale.
3. Very few students who predominantly score on the Powerful Others or Chance scales were found in the doctoral program of the College of Education after the point of qualifying examinations.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made.

1. Levenson's I, P, and C scales should be given to students when they enter the doctoral program in order to ascertain if the majority of students are Internals at the inception of their doctoral programs or if Powerful Others and Chance students drop out prior to qualifying examination. Normative values should be established in order to have a baseline comparison for further research.

2. Research should be encouraged to determine if I, P, and C scale scores differ among fields of study at the doctoral level.

3. Research should be encouraged that examines students' attitudes toward degree completion and the values that they place on the doctoral degree.

4. Research should be encouraged to determine if any differences might exist between Americans and international students. One possible limitation regarding collection of data might be the returning of
international students to their homeland upon completion of their doctoral degree.

5. Research should be encouraged to examine differences among students from various divisions within the College of Education.

6. Research should be undertaken which considers the completion rate of doctoral students in evaluating the overall success of their programs. Appropriate records should be maintained for counseling and developmental purposes.

7. Universities should develop ways to track students after qualifying examination in order to encourage and to assist with completion of their programs.

8. Universities should develop a system to evaluate the reasons for student attrition from doctoral programs after completion of the qualifying examination; perhaps an exit interview or a follow-up questionnaire could be devised.

9. Empirical research such as that shown by this dissertation should be replicated and cross-validated with different disciplines of students from different colleges and universities. Such studies could be used not only to assist students but to secure additional funding from state legislatures and alumni.
APPENDICES
Dr. Velma E. Schmidt  
Coordinator for Graduate Affairs  
College of Education  
Matthews Hall  
North Texas State University  
Denton, Texas 76203

Dear Dr. Schmidt,

I appreciate your taking the time on February 25th to discuss with me certain aspects of my dissertation proposal. As I explained, my major professor is Dr. Ron Newsom in Adult Education. My dissertation topic is the relationship of locus of control to academic achievement by doctoral students. I am needing the dates for all students in the College of Education who completed their qualifying exams between September 1983 and August 1986. I also need the dates for those who have defended their dissertation proposal during this same time period. I understand that the data regarding dissertation defense will need to be obtained from the Graduate Office.

You gave your permission to access the data but referred me to the University attorney, Richard Rafes, for permission to be given these students' names and addresses.

On February 26 I discussed this with Mr. Rafes. He indicated at that time that there was no problem in my having the names, addresses, and pertinent dates from your records. He asked that I call your office and request that you contact him for confirmation if needed.

When I called your office I was told by Ms. Arly Hulstrand, that you were ill. I relayed all of these conversations to her and that I would be sending you this letter. She stated she would have you call Mr. Rafes and that I should assume that everything was fine unless you contacted me.

I thank you very much for your very kind and willing assistance. I hope that if there are any questions or concerns that you will feel free to contact me. I can be reached at (214) 348-2849 home or (214) 827-0813 office.

Sincerely,

Marcela L. Wentzel  
Administrator  
9741 Bellewood Dr.  
Dallas, Texas 75238
March 13, 1986

Ms. Marcela L. Wentzel  
9741 Bellewood Drive  
Dallas, TX 75238

Dear Ms. Wentzel:

You have my approval to gather the information specified in your letter dated February 26, 1986. It is understood that the names of the students will remain confidential and that it will be your responsibility to locate the items you need from our files.

Call 565-2744 prior to coming to the office to be certain that Lee, my secretary, will be here to give you the files.

Sincerely,

Velma E. Schmidt, Ed.D.  
Coordinator of Graduate Affairs  
College of Education

cc: Dr. Ron Newsom
February 24, 1986

Hanna Levenson, Ph. D.
4150 Clement
San Francisco, California
94131

Dear Dr. Levenson,

I am writing to request your permission to utilize your I. P. C. scales, identifying locus of control for my dissertation research. I am studying at North Texas State University and majoring in Adult Education.

I would like to begin the research by mid-March and plan to evaluate the relationship between locus of control and academic achievement by doctoral students.

It would be very appreciated if not only you would grant your permission at the earliest possible date, but if you would also send me a copy of the scales with scoring instructions.

Thank you so much for your time and consideration. I await your reply.

Sincerely,

Marcela L. Wentzel
9741 Bellewood Drive
Dallas, Texas 75238

MLW:sr
Appendix D
Levenson's I, P, and C Scales Questionnaire

Directions

On the next page is a series of attitude statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. We are interested in the extent to which you agree or disagree with such matters of opinion.

Read each statement carefully. Then indicate the extent to which you agree or disagree by circling the number following each statement. The numbers and their meanings are indicated below:

If you agree strongly, circle +3
If you agree somewhat, circle +2
If you agree slightly, circle +1
If you disagree slightly, circle -1
If you disagree somewhat, circle -2
If you disagree strongly, circle -3

First impressions are usually best. Read each statement, decide if you agree or disagree and the strength of your opinion, and then circle the appropriate number.

GIVE YOUR OPINION ON EVERY STATEMENT

If you find that the numbers to be used in answering do not adequately reflect your own opinion, use the one that is closest to the way you feel. Thank you.
### I, P, and C Scale

<table>
<thead>
<tr>
<th>Series 10.72</th>
<th>Strongly disagree</th>
<th>Disagree somewhat</th>
<th>Slightly disagree</th>
<th>Slightly agree</th>
<th>Agree somewhat</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whether or not I get to be a leader depends mostly on my ability.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>2. To a great extent my life is controlled by accidental happenings.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>3. I feel like what happens in my life is mostly determined by powerful people.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>4. Whether or not I get into a car accident depends mostly on how good a driver I am.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>5. When I make plans, I am almost certain to make them work.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>6. Often there is no chance of protecting my personal interests from bad luck happenings.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>7. When I get what I want, it's usually because I'm lucky.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>8. Although I might have 'good ability, I will not be given leadership responsibility without appealing to those in positions of power.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>9. How many friends I have depends on how nice a person I am.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>10. I have often found that what is going to happen will happen.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>11. My life is chiefly controlled by powerful others.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>12. Whether or not I get into a car accident is mostly a matter of luck.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td></td>
<td>Strongly disagree</td>
<td>Disagree somewhat</td>
<td>Slightly disagree</td>
<td>Slightly agree</td>
<td>Agree somewhat</td>
<td>Strongly agree</td>
</tr>
<tr>
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<td>--------------------</td>
<td>------------------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
</tr>
<tr>
<td>13.</td>
<td>People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14.</td>
<td>It's not always wise for me to plan too far ahead because many things turn out to be a matter of good or bad fortune.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Getting what I want requires pleasing those people above me.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16.</td>
<td>Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17.</td>
<td>If important people were to decide they didn't like me, I probably wouldn't make many friends.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18.</td>
<td>I can pretty much determine what will happen in my life.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19.</td>
<td>I am usually able to protect my personal interests.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>Whether or not I get into a car accident depends mostly on the other driver.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21.</td>
<td>When I get what I want, it's usually because I worked hard for it.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22.</td>
<td>In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23.</td>
<td>My life is determined by by own actions.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>24.</td>
<td>It's chiefly a matter of fate whether or not I have a few friends or many friends.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
Appendix E

Letter of Invitation

June 17, 1986

Dear [Name],

I am also a doctoral student in the College of Education at North Texas State University. I have enclosed a survey to record your opinion as to how you feel the world is ordered. The results of this study will provide valuable information for doctoral students in education.

I am particularly interested in your response because as a doctoral student in the College of Education your contribution will be especially significant. This survey requires a minimum of your time — approximately three to five minutes. I have also enclosed a stamped return envelope for your convenience.

It will be very much appreciated if you would be so kind as to return it by JULY 7TH. Other phases of my research simply cannot be carried out until I hear from you. I thank you in advance for your time and consideration.

Sincerely,

[Signature]

Marcella L. Wenzel

Ron W. Newsom, Ph.D.
Adult and Continuing Education

MLW:st
Dear

With all the many things that must be done during the day, you may not have had time to complete the short questionnaire I mailed you recently.

I have enclosed another one, also with a stamped return envelope for your convenience.

It really only takes a few minutes and your opinions would be so very helpful to me.

Won’t you please take a moment now to complete it? Thanks so much.

With appreciation,

Marcela L. Wentzel

Ron W. Newsom, PH.D.
Adult and Continuing Education

MLW/dr

Enclosures
BIBLIOGRAPHY

Books


Articles


Horner, M. (1972). A bright woman is caught in a double-bind: In achievement oriented situations she worries not only about failure but also about success. Psychology Today, 61, 36-38.


Reports


