

THE RELATIONSHIP BETWEEN LOCUS OF
CONTROL AND TEST ANXIETY IN A
SELECTED SAMPLE OF TENTH-,
ELEVENTH-, AND TWELFTH-
GRADE STUDENTS

By

JOHN MICHAEL CORPOLONGO

//

Bachelor of Science

Pittsburg State University

Pittsburg, Kansas

1978

Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
MASTER OF SCIENCE
May, 1983

Thesis
1983
C822r.
copy 2



THE RELATIONSHIP BETWEEN LOCUS OF
CONTROL AND TEST ANXIETY IN A
SELECTED SAMPLE OF TENTH-,
ELEVENTH-, AND TWELFTH-
GRADE STUDENTS

Thesis Approved

John W. Oley

Thesis Adviser

Joseph Pearl

Paul Ward

Norman N. Durham

Dean of Graduate College

PREFACE

This study is an investigation of the relationship between the constructs of locus of control and test anxiety in a secondary-student population. Locus of control is defined in this study as the degree to which a student perceives self-responsibility for his or her intellectual-academic successes and failures. Test anxiety is conceptualized as a student's predisposition to respond anxiously to stimuli associated with the testing situation. This study provides preliminary evidence of the relationship between these variables in a high school sample, as the literature has primarily addressed this relationship in terms of college groups.

The author wishes to express his gratitude to his major adviser, Dr. John Otey, for his guidance and assistance throughout this study. Appreciation is also expressed to the other committee members, Dr. Joseph Pearl and Dr. Paul Warden, for their assistance in the planning of the study and preparation of the final manuscript.

A note of special thanks is given to Dr. Jo Campbell and Mrs. Iris McPherson for their invaluable assistance in the statistical analysis of the data. Thanks are also extended to Dr. Allen Robson, Superintendent of Schools for Ponca City, and to Mr. Bill Hicks, principal of Ponca City

High School, for supporting this project. In addition, appreciation is expressed to the teachers whose classes participated in the study, as their cooperation was invaluable during the collection of the data.

Finally, special gratitude is expressed to my wife, Melinda, for her support and understanding during the preparation of the manuscript.

TABLE OF CONTENTS

Chapter	Page
I. THE RESEARCH PROBLEM	1
Introduction.	1
Background of the Study	3
Statement of the Problem.	5
Definition of Terms	5
Assumptions	7
Summary	8
II. REVIEW OF THE LITERATURE	9
Introduction.	9
Current Views of the Constructs	10
Previous Investigations of the Relationship Between the Constructs.	11
Explanation for the Relationship Between the Constructs.	15
Summary	16
III. METHOD AND PROCEDURE	18
Population.	18
Sample.	18
Discussion of Instruments	19
IAR.	19
TAS.	23
Administration of Instruments	24
Summary	25
IV. ANALYSIS OF THE DATA	26
Prediction of IAR and TAS Scores.	30
V. SUMMARY AND CONCLUSIONS.	33
Introduction.	33
Interpretation of the Findings.	34
Validity of the Study	37
Significance of the Study	39
Recommendations for Further Research	40
Concluding Statement.	41

Chapter	Page
A SELECTED BIBLIOGRAPHY	43
APPENDIXES.	47
APPENDIX A - PERSONAL DATA SHEET	48
APPENDIX B - INSTRUMENTS	50
APPENDIX C - INSTRUCTIONS FOR INSTRUMENTS.	56
APPENDIX D - MEANS AND STANDARD DEVIATIONS OF INSTRUMENTS	59

LIST OF TABLES

Table	Page
I. Classes Identified by Period and Grade.	20
II. Coefficients of Correlation of IAR Scores With the TAS by Grade	27
III. Coefficients of Correlation of IAR Scores With the TAS by Sex	27
IV. Coefficients of Correlation of IAR Scores With the TAS by Sex Within Grade.	29
V. Coefficients of Correlation of IAR Scores With the TAS by Birth Order	30
VI. Means and Standard Deviations of IAR Scores by Grade.	60
VII. Means and Standard Deviations of IAR Scores by Sex.	60
VIII. Means and Standard Deviations of IAR Scores by Birth Order.	61
IX. Means and Standard Deviations of TAS Scores by Grade.	61
X. Means and Standard Deviations of TAS Scores by Sex.	62
XI. Means and Standard Deviations of TAS Scores by Birth Order.	62

NOMENCLATURE

AAT	-	Achievement Anxiety Test
IAR	-	Intellectual Achievement Responsibility Questionnaire
I+	-	IAR subscore assessing belief in internal responsibility for successes
I-	-	IAR subscore assessing belief in internal responsibility for failures
total I	-	total self-responsibility score of the IAR
I-E scale	-	Internal-External locus of control scale
LC scale	-	Locus of Control scale
TA	-	total test anxiety score of the TAS
TAQ	-	Test Anxiety Questionnaire
TAS	-	Test Anxiety Scale
TAS-C	-	Test Anxiety Scale for Children

CHAPTER I

THE RESEARCH PROBLEM

Introduction

The constructs of test anxiety and locus of control have been researched extensively in recent years, representing major topics of discussion in contemporary educational psychology. A pioneering study by Mandler and S. Sarason (1952) demonstrated that anxiety, as evoked by a testing situation, influenced the performance of college students on intelligence test items. The mean time scores of a low test anxiety group were significantly better than those of a high-anxiety group for five trials of perceptual motor integration tasks. Further, the variability in performance for the high-anxiety group was significantly larger than that for the low-anxiety group. These results were discussed in terms of stimulus-response (S-R) learning theory, through which the notion of task-relevant and task-irrelevant responses specific to the test situation was subsequently derived. This investigation lent credence to the notion that situation-specific trait anxiety is a significant variable in test performance and provided the theoretical underpinning for instruments such as S. Sarason and Mandler's (1952) Test Anxiety Questionnaire (TAQ); Alpert and Haber's

(1960) Achievement Anxiety Test (AAT); and I. Sarason and Ganzer's (1962) Test Anxiety Scale (TAS).

Similarly, locus of control has been investigated in terms of the dependent and independent variable in the literature. Social learning theory provided the theoretical framework for the Locus of Control (LC) scale (Rotter, Seeman, & Liverant, 1962), which purports to index the nature and effects of social reinforcement in one's environment. Furthermore, this instrument was envisioned as a means of assessing an individual's position on the internal-external continuum. Commensurate with this description was the development of the Internal-External (I-E) scale, which was intended to measure this internality or externality. Implicit in the construction of this instrument is the assumption that the questions deal exclusively with the subject's belief about the nature of the world and how his or her reinforcements are controlled. According to Rotter (1966), the role of reinforcement in the acquisition and performance of skills and knowledge is not simply a "stamping in" process but influenced by the individual's perception of the relationship between the behavior and reinforcement. As Rotter (1966) explains:

One of the determinants of this reaction is the degree to which the individual perceives that the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions. The effect of a reinforcement following some behavior on the part of a human subject, in other words, is not a simple stamping-in process but depends upon whether or

not the person perceives a causal relationship between his own behavior and reward (p. 1).

Consequently, when reinforcement is perceived by the individual as following some action of his or her own but not being completely contingent upon it, then, in our culture, it is commonly perceived as the result of luck, chance, fate (as under the control of others), or as unpredictable because of the great complexity of forces surrounding him or her (Rotter, 1966). If an event is interpreted in this way, the belief is identified as being in external control. Conversely, if a person perceives that the event is contingent upon his or her behavior or his or her relatively permanent characteristics, the belief is termed as being in internal control. This delineation between the internal and external modes of one's perception of reinforcement formed the basis for Rotter's (1966) I-E scale and Crandall, Katkovsky, and Crandall's (1965) Intellectual Achievement Responsibility Questionnaire (IAR). The IAR was constructed to assess children's beliefs in reinforcement responsibility exclusively in intellectual-academic achievement situations, thus avoiding the interpretation of this responsibility in the motivational and behavioral areas of affiliation, dominance, and dependency (Crandall, Katkovsky, & Crandall, 1965).

Background of the Study

Although locus of control and test anxiety have been researched extensively from an independent perspective, their relationship has been relatively unexplored in preadult

populations. Ray and Katahn (1968) administered the Manifest Anxiety Scale, a test anxiety scale, and a locus of control scale to two samples of introductory psychology students and found a positive relationship between external locus of control and test anxiety. Similar correlations have emerged from studies conducted by Prociuk and Breen (1973), Strassberg (1973), and Watson (1967), where groups of college undergraduates were also utilized.

Watson's investigation, which utilized the AAT and the LC scale, was interpreted as confirming Mandler and Watson's (1966) hypothesis that individuals who score in the external direction on the LC scale will tend to be more test anxious than those who score in the internal direction. This difference was attributed to the fact that "internals" more often appraise the world as one in which organized response sequences can be completed (Mandler & Watson, 1966). This hypothesis is linked to the aforementioned study by Mandler and S. Sarason (1952), who asserted that anxiety responses are either (a) directly linked to the completion of the task and reduce anxiety by leading to completion of the task, or (b) not specifically connected with the nature of the task or materials. Thus, Mandler and Watson (1966) hypothesized that "externals", by virtue of their characteristic way of interpreting reinforcement in their environment, will make more irrelevant and unorganized response sequences than internals in a state-induced anxiety situation (i.e., testing).

Statement of the Problem

This study was an investigation of the relationship between locus of control and test anxiety in a selected sample of high school students. It was hypothesized that individuals scoring in the internal direction of the internal-external continuum would exhibit lower test anxiety than those scoring in the external direction. It was envisioned that a preliminary investigation of these constructs would augment the existing data obtained primarily from college samples. The utility of locus of control and test anxiety instruments for this age group was of further interest. Thus, this study purported to validate Mandler and Watson's (1966) hypothesis in a high school sample, a population for which there has been virtually no exploration of the relationship between these constructs to date.

Definition of Terms

The IAR was selected to measure locus of control in the present investigation because of its specificity in assessing reinforcement responsibility in intellectual-academic situations and the availability of norms for high school students. Unlike the locus of control scales previously mentioned, however, the IAR was constructed to sample an equal number of positive and negative events in the reinforcement history of an individual. It was felt that the dynamics operative in assuming credit for successful events are diametrically opposed to those operative in accepting

blame for unpleasant consequences (Crandall, Katkovsky, & Crandall, 1965). It was also suggested by Crandall, Katkovsky, and Crandall that belief in personal responsibility for the two kinds of events may develop at differential rates for some children, but not for others. Thus, the IAR was so constructed that, in addition to a total I (internal or self-responsibility score), different subscores could be obtained for beliefs in internal responsibility for academic successes (I+) and for failures (I-). For a child in this investigation, the I+ score was obtained by summing all positive events for which credit was assumed, and the I- score was the total of all negative events for which blame was assumed. A child's total I score, then, was the sum of the I+ and I- subscores.

Test anxiety was measured in the present study by the TAS, which yields a total test anxiety score (TA). A "high" TA is more indicative of test anxiety than a "low" TA, as the scale is scored in the direction of increasing anxiety. The TAS was selected for the present investigation because of administration and scoring ease, its appropriateness for general testing situations, and its proposed applicability to high school populations. The availability of test anxiety scales specifically constructed for this age group is limited, although instruments for children and college students have existed for some time (Tryon, 1980).

Assumptions

Of significance is the question of whether locus of control and test anxiety scales measure conceptually separate variables. This question has been addressed in the literature by Ray and Katahn (1968) in their investigation of the relationship between the Manifest Anxiety Scale (MAS), the TAS and the LC scale in two samples of college undergraduates. In an item analysis, every item on the LC scale answered in external locus of control direction correlated positively with high anxiety on the MAS and the TAS. However, the correlation of only three items from the LC scale actually reached significance with the TAS and the MAS. Total scores on the LC scale and the MAS were significantly correlated in both samples. The LC scale and the TAS were also significantly correlated. A factor analysis using varimax rotation demonstrated that these significant correlations could not be explained in terms of an anxiety factor composed of highly correlated items on the LC scale which, when removed, would reduce the degree of relationship between the anxiety scales and the remaining items of the locus of control scale. The authors summarized the results of their factor analytic investigation by asserting:

These findings support the proposition that the anxiety scales and the LC scale are measuring conceptually separate variables which correlate with each other and that this correlation is not due to a hidden anxiety factor within the locus of control scale. A feeling of lack of control over the environment and the outcome of one's actions is associated with anxiety. Whether this

appraised lack of control produces anxiety, or vice versa, cannot, of course, be determined from correlational studies of this type (Ray & Katahn, 1968, p. 1196).

It was inferred that the IAR and TAS utilized in this study measure conceptually separate variables, and the function of these variables in a high school population would approximate that operative in an adult (college) population.

Summary

This study represented a downward extension of several previous studies which examined the relationship between locus of control and test anxiety in samples of college students (Prociuk & Breen, 1973; Ray & Katahn, 1968; Watson, 1967). Consistent with the literature regarding college groups, it was predicted that high school students scoring in the internal direction on a locus of control scale would exhibit lower test anxiety than students scoring in the external direction. Data was analyzed with respect to the grade, sex, ethnic group, and birth order of the respondents, as these demographic variables have been virtually unexplored in previous investigations of this relationship.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Few variables have been researched as extensively as locus of control and anxiety in recent years. Rotter (1975) has reported that over 600 published articles have involved some aspect of locus of control while Thornhill, Thornhill, and Youngman (1975) have produced a computerized bibliography of locus of control studies exceeding 1,200 references. Studies involving some measure of anxiety appear to have generated even greater interest. Spielberger (1966, 1972) has estimated that over 5,000 articles and books on anxiety have been written since 1950.

Although these constructs have amassed considerable attention, their relationship has been investigated with less vigor. Archer (1979) has revealed approximately 40 experimental and correlational investigations of the relationship between locus of control and anxiety. These studies were compiled across all age groups and all dimensions of the constructs. One study was reported as involving the relationship between locus of control and trait anxiety in a high school population.

Current Views of the Constructs

Current views of locus of control and anxiety have remained relatively constant in the literature. Reiterating, Rotter (1966) has defined locus of control as a trait variable which is descriptive of relatively enduring individual propensities to perceive reinforcement contingencies as either under personal control (internal), or under the control of luck, chance, fate or powerful others (external). This belief in reinforcement responsibility has been found to be related to a number of demographic variables, attitudes, and behaviors, suggesting that such a construct may be useful in personality and personality-development research (Crandall, Katkovsky, & Crandall, 1965). The IAR was developed to assess beliefs in internal versus external reinforcement responsibility exclusively in intellectual-academic achievement situations, so its development was an extension of Rotter's theory to the environment of the classroom. The IAR differs from other locus of control instruments in its differentiation of an individual's internal responsibility for successes from responsibility for failures. Further, it limits the source of external control to those individuals who most often come in contact with a child; parents, teachers, and peers (Crandall, Katkovsky, & Crandall, 1965). Thus, locus of control, as conceptualized by the IAR, is defined within the context of the school and aims to assess a child's degree of self-responsibility for academic successes and failures within this environment.

Similarly, anxiety has been defined in terms of situational and trait factors with the differentiation of state and trait anxiety being prevalent in the literature (Archer, 1979). According to Cattell and Scheier (1961), Lazarus (1966), and Spielberger (1966, 1972), state anxiety is a transitory emotional state marked by subjectively perceived feelings of tension, apprehension, and increased autonomic nervous system activity. This activity is not interpreted as being an enduring characteristic of the individual, but results as a function of transitory emotional occurrences. Conversely, trait anxiety has been defined as an individual's predisposition to respond anxiously across varied situations (Cattell & Scheier, 1961; Lazarus, 1961; Spielberger, 1966, 1972). Endler (1975) has subdivided this type of anxiety into an area of situation-specific trait anxiety, i.e., the predisposition to respond anxiously to stimuli associated with a specific class of stressful events. Test anxiety is conceptualized within the situation-specific trait anxiety category (Endler, 1975).

Previous Investigations of the Relationship Between the Constructs

As suggested by Archer (1979), increasing research interest has been focused on the relationship between locus of control and anxiety during the past 15 years. Archer (1979) has documented nine studies where a measure of the

internal-external continuum was correlated with a measure of situation-specific trait anxiety. Six of these investigations found test anxiety to be negatively correlated with internality for either males or females independently or combined. Seven studies utilized college undergraduates as subjects, with test anxiety being assessed by one of the widely used test anxiety scales such as the TAO, the AAT, or the TAS. Locus of control was assessed primarily by the I-E scale, a 29-item forced-choice instrument which is scored for external choices. Rotter (1966) has reported reliability coefficients of internal consistency as ranging from .65 to .79, and coefficients of stability as ranging from .55 (two months) to .72 (one month) for this instrument. Rotter has characterized the I-E scale as exclusively involving an individual's perceptions of the world and his or her expectations about how reinforcement is controlled. Consequently, this instrument was considered to be a measure of generalized expectancy that possibly correlates with the value placed on internal control, but the preference for internal or external control is not directly addressed (Rotter, 1966).

Previous investigations which have utilized these instruments to assess the relationship between locus of control and test anxiety have tended to explore it across a limited number of demographic variables. Sex of the respondent has been the variable most often investigated. Among the studies not indicating a significant relationship

between these constructs, Butterfield (1964) utilized a sample of 47 college students and found a correlation of .23 between locus of control and test anxiety. This sample was the smallest cited in Archer's (1979) comprehensive literature review. Gold (1968) administered the TAQ and the I-E scale to 114 college undergraduates and obtained nonsignificant correlations of .02 and .12 for males and females, respectively. Similar results were demonstrated by Prociuk and Breen (1973), although test anxiety was observed to be negatively related to academic achievement.

Significant correlations between test anxiety and external locus of control reported in the literature range from .26 to .38 for female samples, .25 to .44 for male groups, and .21 to .25 for combined samples (Archer, 1979). Liberty, Burnstein, and Moulton (1966) administered the I-E scale and the TAQ to a group of 106 U.S. Air Force recruits and obtained a significant correlation of .44 between external locus of control and test anxiety ($p < .05$). Feather (1967), utilizing the same instruments, found a significant correlation between these constructs for a group of 153 males ($r = .36, p < .05$), but not for a group of 46 females ($r = .13$). These findings were replicated with another group of males in the same study ($r = .38, p < .05$). Watson (1967) investigated the relationship between locus of control and test anxiety in a sample composed of 648 college undergraduates. Utilizing the LC scale (scored for external control), and the debilitating component of the AAT, a

significant correlation between these constructs was obtained for the total sample ($r = .25$, $p < .05$), as well as for male and female groups independently. Ray and Katahn (1968) produced significant correlations of .22 and .21 ($p < .01$) in two groups of college students using the I-E scale and the TAS. Results of this investigation were replicated with 671 elementary school children, as Shriberg (1974) produced a significant correlation of .25 ($p < .001$) between external locus of control and the Test Anxiety Scale for Children (TAS-C). Finally, a significant correlation of .38 ($p < .001$) emerged from the investigation of this relationship in a sample of 102 female college students using the I-E scale and the AAT (Brett & Kernaleguen, 1975). This study represents the most current investigation of the relationship between locus of control and test anxiety in Archer's (1979) comprehensive literature review.

As previously mentioned, locus of control and test anxiety have been independently investigated with a number of variables. Internal locus of control has been positively correlated with school grades and achievement test scores (Messer, 1972); with test-taking performance (Morris & Carden, 1981); and with expectations of achieving valued goals (Nelson & Phares, 1971). Conversely, evidence has been cited that high test-anxious persons are more self-preoccupied and self-dissatisfied than low test-anxious persons (Wine, 1971); more responsive to modeling cues, persuasion, and conformity pressures (Tryon, 1980); and more

likely to score higher on neuroticism subscales of personality-assessment instruments (Morris & Carden, 1981). Such variables are of potential interest in the clarification of the relationship between locus of control and test anxiety across different populations, but presently have not been addressed in the literature. Archer (1979) summarized the existing data regarding the locus of control-test anxiety relationship by asserting:

The generally small but significant correlations between locus of control and test anxiety may be related to the importance of academic evaluation situations as major sources of both reinforcement and stress for college students . . . we may conclude that a significant relationship has been established between locus of control and test anxiety. As in the case of general trait anxiety research, however, definitive causative relationships may not be directly inferred from these findings (p. 620).

Morris and Carden (1981), in their investigation of the personality correlates of locus of control and anxiety, supported Archer's assertions by stating "it is clear that a major difference between internal and external scores lies in their self-reported levels of general anxiety" (p. 805).

Explanation for the Relationship

Between the Constructs

The literature is also consistent in its explanation of why internals tend to exhibit lower test anxiety than externals. Acknowledging Mandler and S. Sarason's (1952) investigation of anxiety and learning, Mandler and Watson (1966), and Wine (1971) have suggested an attentional

interpretation of the debilitating effects of test anxiety. Mandler and S. Sarason suggested that the testing situation evokes both learned task drives and learned anxiety drives. Some of the anxiety drives are task-relevant while others are task-irrelevant. The learned task drives and task-relevant anxiety drives facilitate test performance while the task-irrelevant anxiety drives decrease test performance. The debilitating anxiety is suffered by the high test-anxious person during examinations, lowering performance. Mandler and S. Sarason reasoned that the high test-anxious person attends to both self-relevant and task-relevant variables in contrast to the low test-anxious person who attends mostly to task-relevant variables. Thus, Mandler and Watson (1966), and Wine (1971) have suggested that internals are more capable than externals in attending to task-relevant variables. It was inferred that internals appraise the world as one in which organized response sequences can be completed without consideration of external factors or forces.

Summary

The relationship between locus of control and test anxiety in college samples is well documented in the literature. A thorough examination of the previous investigations of this relationship reveals severe limitations concerning the generalizability of the findings to other student populations, however. Of the six studies summarized by Archer

(1979) which indicated a significant positive correlation between external locus of control and test anxiety, four were conducted with college undergraduates and one utilized military recruits. Only one study was documented that involved a subadult population, as Shriberg's (1974) investigation utilized a large sample of elementary students. The investigation of this relationship in high school populations is not represented in the literature. Further, the significant correlations ranging from .21 to .25 in combined samples of male and female college students must be interpreted with the realization that the differential aspects of internality have largely been ignored in the literature. As the I-E scale has been the instrument of choice in assessing the locus of control variable in previous investigations of this relationship, the dynamics operative in assuming credit for positive experiences versus those involved in accepting blame for unpleasant consequences have been disregarded.

CHAPTER III

METHOD AND PROCEDURE

Population

Students enrolled in grades 10, 11, and 12 of the Ponca City High School, Ponca City, Oklahoma, served as the population from which subjects were selected for the present investigation of the relationship between locus of control and test anxiety. As of October 8, 1981, enrollment totalled 1,333 students, with 444 students being enrolled in the 10th grade, 482 students in the 11th grade, and 407 students in the 12th grade. The racial distribution of the total enrollment was 88.5% Caucasian, 5.9% American Indian, 3.8% Black, 1% Spanish American, and .8% Chinese American.

Sample

Subjects were selected for the present study as a result of their membership in one of six required classes sampled across grades 10, 11, and 12. Subjects were not selected randomly, but through their membership in one of the selected classes. Upon inspection of the available required classes by the author and the principal, six intact classes representing grades 10, 11, and 12 were selected. Inspection of class rosters revealed that no student

appeared twice in the class list. The four criteria for class selection were: (a) Classes were to contain as wide range of student abilities as possible. (b) "Electives" were not selected as it was felt that such classes might systematically bias the sample further. (c) Special education, gifted, and remedial classes were not included as descriptions of previous studies did not systematically include such populations. (d) Finally, classes were chosen so administration of the instruments to all classes could be accomplished in one day, thus limiting reactive arrangements. Two classes representing each grade were chosen, necessitating six separate administrations of the instruments. Table I identifies the classes selected for the present investigation in the order that they appeared for testing. This selection resulted in a sample of 130 students, with 49 students being enrolled in the 10th grade, 48 in the 11th grade, and 33 students in the 12th grade. This represented an approximate 10% sampling of the total enrollment, with the racial distribution of the sample being 94.6% Caucasian, 2.3% Black, 1.5% American Indian, .8% Spanish, and .8% Chinese American.

Discussion of Instruments

IAR

The IAR, used to measure locus of control in the present investigation, is composed of 34 forced-choice items which are scored internally. Each item stem describes

TABLE I
CLASSES IDENTIFIED BY
PERIOD AND GRADE

Class Title	Period	Grade
Composition II	1	10
Introduction to Literature	2	10
Basic Speech	3	12
American Literature II	4	11
Basic Speech	5	12
American Literature II	6	11

either a positive or negative achievement situation which routinely occurs in a child's life. This stem is followed by one alternative stating that the event was caused by the child and another stating that the event occurred because of the behavior of someone else in the child's environment (Crandall, Katkovsky & Crandall, 1965). This method yields a potential score of 17 for positive event alternatives for which the child assumes responsibility (I+), and 17 for negative event alternatives for which the child assumes responsibility (I-). Consequently, the total I score is the sum of the I+ and I- subscores. Although reliability and validity data for the IAR are not abundant in the literature, Crandall, Katkovsky, and Crandall (1965) have reported two month reliability coefficients of .65 for total I, .47 for I+, and .69 for I- for a sample of 70 ninth-grade students. Forty-seven children in grades three, four, and five yielded test-retest correlations of .69 for total I, .66 for I+, and .74 for I-. Measures of internal consistency in the same study yielded split-half reliabilities corrected by the Spearman-Brown Prophecy Formula of .60 for both I+ and I- subscales. Further, results of this study revealed no significant change in total I responses from grades 6 to 12. Some changes in I+ and I- scores reached significance, however, as males exhibited a decrease in I+ between 10th and 12th grades and females exhibited an increase in I- over the span from 6th to 12th grades. Crandall, Katkovsky, and Crandall (1965) further reported that the IAR relates only

moderately to intelligence-test scores and to social status, but, for older children, total I and I- responses are significantly more prevalent among children from small families (1 to 2 children). Pittman and White (1977) utilized factor-analytic procedures with a sample of 1,192 sixth and seventh grade students to determine the factor structure of the IAR. The results of this study indicated that individuals are more likely to acknowledge belief about control over successful events than belief about control over failure situations. In a similar investigation of the factors of the IAR, Vincenzi and Maraschiello (1978) examined the concurrent validity of the IAR with teachers' ratings of 329 elementary students. Results indicated a significant relationship between the teachers' assessment of student internality and the IAR at the .001 level of significance. Vincenzi and Maraschiello summarized their findings by commenting:

The IAR was demonstrated to be a useful tool with which LOC [locus of control] may be measured on a group level. The significant relationship found between the teachers' perceptions of their students' overt responsibility-taking behavior and the students' IAR scores provide positive support for the concurrent validity of the IAR (p. 525).

These assertions were qualified, however, by the suggestion that the IAR may represent a more accurate measure of locus of control for black students than for white students (Vincenzi & Maraschiello, 1978).

TAS

The instrument utilized to assess test anxiety in the present investigation, the 1962 version of the TAS, is composed of 16 true-false items which yields a single index of test anxiety. A "high score" is more indicative of anxiety than a "low score". This version was derived from the original Test Anxiety Scale (I. Sarason, 1958), which consisted of 21 true-false items. Suinn (1969) has presented means and standard deviations for test and retest of 82 college students on the original 21-item version of the TAS. Scores were found to decrease with the passage of time alone. As an index of the concurrent validity of the 1962 version of the TAS, a correlation coefficient of .93 was obtained with the revised 37-item edition of the TAS published in 1972 (I. Sarason, Pederson, & Nyman, 1968). The original version of the TAS (I. Sarason, 1958), consisted of items rewritten from the TAQ. The TAQ has demonstrated a split-half reliability of .91 and a test-retest reliability of .82 over a six week period (Tryon, 1980). Although the TAS was originally intended for college populations, it is suggested by the present author that its content and readability are appropriate for high school groups. The Dale-Chall formula with Koenke computation procedure (1971) was utilized to assess the word difficulty of the TAS. A grade-level equivalency of 6.7 was achieved through this procedure, indicating its readability to be appropriate for the present investigation. Additional statistical data for the TAS are limited in the

literature. This lack of reliability and validity data does not appear to be specific to the TAS, but to test anxiety scales in general. Tryon (1980) summarized these inadequacies by asserting that

there are some difficulties involved with using the self-report measures of test anxiety . . . the scales are easily fakable and apt to be influenced by the demand characteristics of the situation (p. 348).

The 1962 version of the TAS was selected for the present investigation because its readability appears to be appropriate for high school students. The readability and content of the other test anxiety scales previously mentioned do not appear to be appropriate for such students.

Administration of Instruments

An informal meeting was scheduled with the teachers of the classes selected for this study to brief them of the nature of the study and what would transpire in their classrooms on the day of administration, Wednesday, May 12, 1982. The teachers were further cautioned not to inform their students of the nature of the study, nor prepare them for it in any way.

All students were issued an individual packet consisting of a personal data sheet (Appendix A), the IAR identified as "A" and the TAS identified as "B" (Appendix B). The IAR and TAS were administered to the classes in a counter-balanced fashion. Information regarding the nature of the study or instruments was not made available to the students.

All protocols were completed anonymously by the students, as they were numerically keyed on the last page in the packet. All students were allowed to complete the instruments independently, as instructions for the second instrument were not provided until the entire class had completed the first. Specific test questions were read or clarified upon student request, but no other information was furnished to the students. Upon completion of the second instrument by the entire class, the students were requested to enter their comments on the personal data sheet voluntarily. A complete transcription of the administration instructions to each class is provided in Appendix C.

Summary

This study was an investigation of the relationship between locus of control and test anxiety in a sample of students selected from grades 10, 11, and 12 of the Ponca City High School, Ponca City, Oklahoma. The IAR was utilized to assess locus of control while the TAS was used to measure test anxiety (TA). An IAR raw score (total I) comprised of I+ and I- subscores was obtained and correlated with the TAS raw score (TA) for each student. Pearson r correlation coefficients were computed to assess the degree of relationship between these constructs in the sample. In order to clarify the relationship between the internal locus of control scores of the IAR and the test anxiety scores of the TAS, these correlations were analyzed with respect to the sex, grade, and birth order of the respondents.

CHAPTER IV

ANALYSIS OF THE DATA

To test the hypothesis that students scoring in the internal direction on a locus of control scale (IAR) would exhibit a lower degree of test anxiety (TA) than those scoring in the external direction, Pearson r correlation coefficients were computed between the raw scores of the IAR subscales and the TAS. Correlations were analyzed with respect to the grade, sex, and birth order of the respondents. The protocols of 63 females and 53 males were analyzed; 14 protocols were rendered invalid because of incomplete or inappropriate responses. Coefficients were not computed independently by ethnic group because of an insufficient number of minority-group students sampled. Tables II and III present these correlations by the grade and sex of the respondents, respectively.

Correlations presented in Table II reveal no significant relationships between TA and total I and TA and I- for the total sample as well as for each grade. Contrary to prediction, the relationship between total I and TA did not reach significance when the responses of both sexes were pooled across grades. However, when I+ scores were analyzed independently by grade, the predicted negative relationship

TABLE II
 COEFFICIENTS OF CORRELATION OF IAR SCORES
 WITH THE TAS BY GRADE

Grade	n	T A S		
		Total I	I+	I-
10	46	-.18	-.35*	.06
11	43	-.10	-.24	.05
12	27	-.13	-.48*	.16
10, 11, 12	116	-.14	-.34**	.08

* $\underline{p} < .01$
 ** $\underline{p} < .001$

TABLE III
 COEFFICIENTS OF CORRELATION OF IAR SCORES
 WITH THE TAS BY SEX

Sex	n	T A S		
		Total I	I+	I-
Males	53	-.23*	-.45**	.03
Females	63	-.11	-.29*	.09

* $\underline{p} < .05$
 ** $\underline{p} < .001$

between internal locus of control and test anxiety reached significance for the total sample, as well as for grades 10 and 12 independently. The significant correlations observed between I+ and TA for the 10th- and 12th-grade students were not significantly different, however, at the .05 level of significance (Fisher $z = .48$).

The relationship between I+ and TA is further clarified in Table III, which depicts how these constructs were related to the sex of the respondent. The aforementioned significant correlation between I+ and TA realized for the total sample was also obtained for male and female responses analyzed independently. Correlations presented in Table IV also display how this relationship varied with respect to sex of the respondent, as this variable was analyzed within each grade. The strongest relationship observed was that between I+ and TA for the group of 12th-grade females. A similar correlation was obtained in the group of 12th-grade males sampled. The obtained difference between r between I+ and TA for these groups was significant ($z = 2.41, p < .05$). The predicted negative correlation between I+ and TA also reached significance for the group of 19 10th-grade males sampled, contributing to the significant correlation between these constructs observed in Table II. Correlations presented in Table IV display the lack of a consistent relationship between I- and TA across both grade and sex, as nonsignificant correlations were obtained.

TABLE IV
 COEFFICIENTS OF CORRELATION OF THE IAR SCORES WITH
 THE TAS BY SEX WITHIN GRADE

Sex Within		T A S		
		Total I	I+	I-
Grade	n			
<u>Grade 10:</u>				
Males	19	-.30	-.59**	.18
Females	27	-.10	-.16	-.02
<u>Grade 11:</u>				
Males	15	-.31	-.22	-.28
Females	28	.02	-.24	.24
<u>Grade 12:</u>				
Males	19	-.14	-.46*	.09
Females	8	-.31	-.62*	.43

* $p < .05$

** $p < .01$

Correlations in Table V indicate how this relationship varied with respect to birth order. Significant correlations between I+ and TA were revealed across the three dimensions of birth order conceptualized in this study. The patterns of nonsignifiant correlations between TA and total I, and between TA and I- were again realized.

TABLE V
COEFFICIENTS OF CORRELATION OF IAR SCORES WITH
THE TAS BY BIRTH ORDER

Birth Order	n	T A S		
		Total I	I+	I-
Youngest	38	-.04	-.32*	.21
Between ^a	34	-.12	-.31*	.04
Oldest	44	-.21	-.32*	-.03

^aIncludes births anywhere between those of youngest and oldest siblings.

*p < .05

The means and standard deviations of the IAR and TAS scores are depicted by the grade, sex, and birth order of the respondents in Appendix D. A cursory examination of the IAR scores suggests that the high mean scores and the small amount of variance around the means are indicative of

nondiscriminating items which tend to elicit internal responses from most subjects (Table VI, Appendix D). This was initially observed by Crandall, Katkovsky, and Crandall (1965) in their validation study of IAR, which produced means of 25.9 and 25.93 for grades 10 and 12, respectively. The mean total I of 24.2 in the present investigation approximated these means, but the mean total I of 22.7 realized for 12th-grade students independently was somewhat lower than that obtained in the validation study.

Prediction of IAR and TAS Scores

Although a significant correlation between I+ and TA was obtained for the total sample, as well as for grades 10 and 12 independently, these correlations appear to have limited utility for either group or individual prediction. The common variance for the relationship between I+ and TA for males was 20.2%, and only 11.6% for all students combined. Similarly, the obtained significant correlation between total I and TA for males appears to have limited predictive utility, as the common variance was observed to be only 5.3%. The only correlations that approach usefulness for group prediction involve the relationship between I+ and TA for 10th-grade males and 12th-grade females, where common variances of 34.8% and 38.4% were obtained, respectively. Replication of these findings seems warranted before the usefulness of such predictions is verified. Results of the present investigation suggested that knowing a student's

total I or I+ score would be of little value in predicting his or her TAS score.

CHAPTER V

SUMMARY AND CONCLUSIONS

Introduction

The hypothesis that internals would exhibit lower test anxiety than externals was not supported when the beliefs of assuming credit for rewarding experiences and accepting blame for unpleasant events were combined for all students in grades 10, 11, and 12. Independent analysis by grade and birth order revealed similar nonsignificant correlations between these constructs. These findings are not consistent with those of Liberty, Burnstein, and Moulton (1966), Shriberg (1974), and Watson (1967), who obtained significant correlations between these constructs ranging from .21 to .44 for combined samples of both sexes. When male and female responses were pooled across grades and analyzed separately, however, a significant correlation of $-.23$ was realized between internal locus of control and test anxiety for males, but not for females ($r = -.11$). This finding is consistent with that of Feather (1967), who found significant correlations of .36 and .38 between external locus of control and test anxiety for two groups of males, but not for two groups of females. When assuming credit for

reinforcing experiences was the sole criterion of locus of control interpreted in the present study, significant correlations with test anxiety were realized for both sexes combined, as well as for grades 10 and 12 independently. This relationship remained significant when male and female responses were grouped independently. The relationship between I+ and TA remained significant across the three indices of birth order conceptualized. No significant relationships were observed when accepting blame for unpleasant consequences constituted the exclusive criterion of locus of control. As the differential beliefs in assuming credit for rewarding experiences versus accepting blame for unpleasant consequences have been unexplored in the investigation of how locus of control relates to test anxiety, there is no precedent in the literature for interpretation of these findings. However, if assuming credit for rewarding experiences (I+) is equated with the definition of locus of control conceptualized in previous investigations, (e.g., the internality index of the I-E scale), then the significant correlation of $-.34$ between I+ and TA in this study is supportive of the findings of Liberty, Burnstein, and Moulton (1966), Shriberg (1974), and Watson (1967).

Interpretation of the Findings

It is suggested that the dynamics involved in assuming credit for positive experiences and accepting blame for unpleasant consequences are significant in the interpretation

of the relationship between locus of control and test anxiety. The differences obtained when these two aspects of internality were analyzed across the grade, sex, and birth order of the respondents serve to validate the hypothesis of Crandall, Katkovsky, and Crandall (1965), that belief in personal responsibility for these two kinds of events may develop at differential rates. The I-E scale commonly utilized in previous investigations of the relationship between these constructs does not yield discreet scores based on this differential concept of internality. The disparity between the total-sample correlations of previous investigations and those of the present investigation may be explicable in terms of the dissimilar nature of the locus of control instruments utilized across studies. The I-E scale is scored in the direction of externality and does not provide separate measures of internality. Further, it has been suggested by Prociuk and Breen (1973) that the item content of the I-E scale may be limited in its assessment of reinforcement beliefs across all areas of experience. Prociuk and Breen have asserted that this scale tends to favor items related to social and political events as opposed to items regarding personal habits, traits, or goals, and therefore may be inadequate as a measure of personal control in academic situations. As previously mentioned, the I-E scale does not discreetly quantify positive and negative beliefs in reinforcement responsibility. Since the IAR equally samples such beliefs across all age levels, the total I of the IAR is not

congruent with the locus of control scores yielded by the I-E scale.

Analysis of the relationship between these constructs by sex revealed additional disparate findings, as male test anxiety responses grouped across grades correlated significantly with total I, while female responses did not. The reasons for this difference are difficult to ascertain, as the independent influences of test anxiety and locus of control could not be isolated in this study. However, this difference may be associated with the differences in development of acceptance of blame across the two sexes. Crandall, Katkovsky, and Crandall (1965) have reported that females assume a level of responsibility for negative events earlier than males. A significant decrease in male I+ between 10th- and 12th-grades has also been reported by these authors. The mean I+ and I- scores for females in grades 10 and 12 were higher than the respective male scores in the original validation study of the IAR (Crandall, Katkovsky, & Crandall, 1965). Results of the present investigation were similar to those of the validation study in these areas, possibly explaining the disparate I+ and I- correlations with test anxiety. These differences may also be interpreted in terms of the factor structure of the IAR, as Pittman and White (1977) have suggested that belief about control over successful events (I+) is a construct which individuals are more likely to acknowledge than belief about control over failure situations (I-).

Explanations for the dissimilar correlations between I+

and TA realized across grades are equally difficult to formulate, although the influences of situational factors have been proposed. Crandall, Katkovsky, and Crandall (1965), in their validation study of the IAR, suggested that a decrease in male I+ from grades 10 to 12 was the result of uncertainties about future success provoked by graduation, finding and meriting employment, or gaining acceptance into college. It was also suggested that older males may have developed an increased sense of modesty, not earlier present, which caused them to respond to the questionnaire as though they were not responsible for their intellectual-academic successes. These perceptions underscore the possibility of situational and/or motivational influences on the relationship between locus of control and test anxiety in high school populations.

Validity of the Study

Judgments regarding the validity of these findings must address the instruments utilized to assess the locus of control and test anxiety constructs. It is believed that the IAR provided a valid assessment of reinforcement responsibility in the present investigation, as the IAR was constructed specifically for intellectual-academic achievement situations. The IAR further limits the source of external control to those persons most often involved with children, thus avoiding the tendency of ascribing responsibility to agents such as luck, fate, impersonal social forces, or more

personal "significant others." Crandall, Katkovsky, and Crandall (1965) have suggested, however, that the IAR is in need of further refinement in view of the presence of nondiscriminating items observed in the validation study of the instrument.

Conversely, utilization of the TAS in high school populations is without precedence in the literature. The scale was principally developed for college populations, where the effects of test anxiety were predicted to be the most pronounced. Thus, its items were developed to sample experiences common to most college students, not necessarily to high school students. Moreover, the number of experiences probed by the TAS is limited, possibly decreasing its reliability. The high school form of the TAQ published by Cowen (1957) merits the consideration of researchers attempting to replicate these findings, although it is more dated than the TAS and is not widely used (Tryon, 1980).

Utilization of intact classes further limits the validity of the present investigation. Since the subjects were not randomly selected, and were included as a result of their membership in a required class, the sample was systematically biased. It is impossible to determine how this bias influenced the relationship between the variables, as replicability will be assured only when future investigation biases the sampling in the same way. Ultimately, it is unclear as to whether the relationships were valid or if they were influenced in some way by the bias introduced into

the sample. It has been suggested, however, that in educational research, the isolation of classroom processes through independent random sampling may alter the very processes that are to be measured (Page, 1958). Thus, the observation itself changes the phenomena one wishes to observe. Page (1958) addressed this dilemma facing the educational researcher by asserting:

Although a considerable degree of replicability seems necessary if an experiment is to represent a storable truth, generalizability appears to be far more fundamental, i.e., the similarity of conditions to those actual educative conditions in which children commonly learn. The results will often be "looser"; but they will nevertheless be closer to A [the true average experimental effect] - and will therefore have more relevance to A - than will many tightly reproducible laboratory studies (p. 304).

The present study investigated the constructs of locus of control and test anxiety in the natural environment of the classroom. It was felt that such an investigation would yield results possessing some degree of educational relevance.

Conversely, generalizability of these findings was decreased as a result of the sample being drawn exclusively from one high school population.

Significance of the Study

Present findings are interpreted as being more specific in the elucidation of the relationship between locus of control and test anxiety than those generated previously. Consideration of the beliefs of assuming credit for

successes versus those associated with accepting blame for failures seems to be critical in the investigation of how locus of control and test anxiety are related. These influences were manifested in the present investigation across the grade and sex of the students sampled. Specifically, when scores assessing responsibility for successes were analyzed separately, the correlation with test anxiety reached significance for both sexes combined. No significant relationships were observed, however, when scores assessing responsibility for failures were treated independently. Consequently, previous attempts to assess this relationship without a differentiated view of internality seem overly simplistic. Further, present results provide preliminary evidence of the relationship between these constructs in a high school population, as the literature has not produced such an investigation. TAS scores for this age group were also generated.

Recommendations for Further Research

Further investigation of the relationship between these constructs in high school samples seems warranted. Use of the IAR to assess locus of control in such investigation seems appropriate in view of its specificity to intellectual-academic achievement situations. Optimally, this exploration should also be extended to elementary and middle school populations. Such investigation with elementary school populations would serve to validate the

findings of Shriberg (1974), who reported a significant correlation between locus of control and test anxiety measured by the TAS-C.

Research efforts focusing on the specific characteristics of the interaction between locus of control and test anxiety are clearly indicated. Delineation of the early social learning and developmental experiences influencing an individual's eventual position on both the locus of control and test anxiety dimensions represents a desirable outgrowth of such investigations. Further, research exploring the characteristics of high test-anxious internals and low test-anxious externals has been posed by Archer (1979). Archer has hypothesized that low test-anxious externals would prove more resistant than others to interventions designed to influence the individual to adopt greater internal expectancies of control over reinforcers. Such research should focus on the specific characteristics of the interaction between locus of control and test anxiety in college populations, while their relationship should be further clarified in subadult groups.

Concluding Statement

Simplistic causal views postulating that internal locus of control orientations lead to the development of lower levels of test anxiety or conversely, that lower levels of anxiety facilitate the development of more internal control expectancies have not been substantiated in the literature. Archer (1979) summarized the findings of

previous investigations of the relationship between locus of control and test anxiety in college samples by asserting:

Given the amount of variance unaccounted for . . . as well as the multidimensional character of most personality trait constructs, it would currently appear more viable to view the development of both locus of control and trait [test] anxiety as potentially interactive and multidetermined phenomena sharing several causative factors (p. 619).

The consideration of a differentiated view of internality, as exemplified by the IAR, is recommended in future investigations of the relationship between locus of control and test anxiety. Similarly, Archer's (1979) hypothesis regarding the characteristics of high test-anxious internals and low test-anxious externals represents an intriguing issue for future research in both adult and preadult populations. To this end, the specific characteristics of the interaction between these constructs could be emphasized and, among low test-anxious externals, those interventions designed to increase internal expectancies of control over reinforcers could be assessed. Finally, such inquiry would augment the findings of Messer (1972), who observed internal locus of control to be positively related to both school grades and achievement test scores.

A SELECTED BIBLIOGRAPHY

- Alpert, R., & Haber, R. Anxiety in academic achievement situations. Journal of Abnormal and Social Psychology, 1960, 61, 207-215.
- Archer, R. P. Relationships between locus of control and anxiety. Journal of Personality Assessment, 1979, 43, 617-626.
- Brett, J. E., & Kernaleguen, A. Perceptual and personality variables related to opinion leadership in fashion. Perceptual and Motor Skills, 1975, 40, 775-779.
- Butterfield, E. C. Locus of control, test anxiety, reactions to frustration, and achievement attitudes. Journal of Personality, 1964, 32, 335-370.
- Cattell, R. B., & Scheier, I. H. The meaning and measurement of neuroticism and anxiety. New York: Ronald Press, 1961.
- Cowen, Judith E. Test anxiety in high school students and its relationship to performance on group tests. Unpub. doctoral dissertation, School of Education, Harvard University, 1957.
- Crandall, V. C., Katkovsky, W., & Crandall, V. J. Children's beliefs in their own control of reinforcements in intellectual - academic achievement situations. Child Development, 1965, 36, 91-109.
- Endler, N. S. A person - situation interaction model for anxiety. In C. D. Spielberger & I. G. Sarason (Eds.), Stress and anxiety. Washington, D. C.: Hemisphere, 1975.
- Feather, N. T. Some personality correlates of external control. Australian Journal of Psychology, 1967, 19, 253-260.
- Gold, D. Some correlation coefficients: Relationships among I-E scores and other personality variables. Psychological Reports, 1968, 22, 983-984.

- Koenke, K. Another practical note on readability formulas. Journal of Reading, 1971, 15, 203-208.
- Lazarus, R. Z. Psychological stress and the coping process. New York: McGraw-Hill Book Co., Inc., 1966.
- Liberty, P. G., Burnstein, E., & Moulton, R. W. Concern with mastery and occupational attraction. Journal of Personality, 1966, 34, 105-117.
- Mandler, G., & Sarason, S. B. A study of anxiety and learning. Journal of Abnormal and Social Psychology, 1952, 47, 166-173.
- Mandler, G., & Watson, D. L. Anxiety and the interruption of behavior. In C. Spielberger (Ed.), Anxiety and behavior. New York: Academic Press, 1966, 263-288.
- Messer, S. B. The relation of internal - external control to academic performance. Child Development, 1972, 43, 1456-1462.
- Morris, L. W., & Carden, R. L. Relationship between locus of control and extraversion - introversion in predicting academic behavior. Psychological Reports, 1981, 48, 799-806.
- Nelson, P. C., & Phares, E. J. Anxiety, discrepancy between need value and expectancy, and internal - external control. Psychological Reports, 1971, 28, 663-668.
- Page, E. B. Educational research: Replicable or generalizable. Phi Delta Kappan, 1958, 39, 302-304.
- Pittman, R. B., & White, K. Analytical investigation of the intellectual achievement responsibility questionnaire. Southern Journal of Educational Research, 1977, 11, 111-117.
- Prociuk, T. J., & Breen, L. J. Internal - external control, test anxiety and academic achievement: Additional data. Psychological Reports, 1973, 33, 563-566.
- Ray, W. J., & Katahn, M. Relation of anxiety to locus of control. Psychological Reports, 1968, 23, 1196.
- Rotter, J. B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80, 1-28.
- Rotter, J. B. Some problems and misconceptions related to the construct of internal versus external control of reinforcement. Journal of Consulting and Clinical Psychology, 1975, 43, 56-67.

- Rotter, J. B., Seeman, M., & Liverant, S. Internal versus external control of reinforcement: A major variable in behavior theory. In N. Washburne (Ed.), Decisions, values, and groups. New York: Pergamon Press, 1962, 473-516.
- Sarason, I. G. Interrelationships among individual difference variables, behavior in psychotherapy, and verbal conditioning. Journal of Abnormal and Social Psychology, 1958, 56, 339-344.
- Sarason, I. G. & Ganzer, V. J. Anxiety, reinforcement, and experimental instruction in a free verbalization situation. Journal of Abnormal and Social Psychology, 1962, 65, 300-307.
- Sarason, I. G., Pederson, A. M., & Nyman, B. Test anxiety and the observation of models. Journal of Personality, 1968, 36, 493-511.
- Sarason, S. B., & Mandler, G. Some correlates of test anxiety. Journal of Abnormal and Social Psychology, 1952, 47, 810-817.
- Shriberg, L. D. Descriptive statistics for two children's social desirability scales, general and test anxiety, and locus of control in elementary school children. Psychological Reports, 1974, 34, 863-870.
- Speilberger, C. D. Theory and research on anxiety. In C. D. Speilberger (Ed.), Anxiety and behavior. New York: Academic Press, 1966, 3-22.
- Spielberger, C. D. Anxiety as an emotional state. In C. D. Spielberger (Ed.), Anxiety: Current trends in theory and research. New York: Academic Press, 1972, 24-54.
- Strassberg, D. S. Relationships among locus of control, anxiety, and valued - goal expectations. Journal of Consulting and Clinical Psychology, 1973, 41, 319.
- Suinn, R. M. Changes in non-treated subjects over time: Data of a fear survey schedule and test anxiety scale. Behavior Research and Therapy, 1969, 7, 205-206.
- Thornhill, M. A., Thornhill, C. J., & Youngman, M. B. A computerized and categorized bibliography on locus of control. Psychological Reports, 1975, 36, 505-506.
- Tryon, G. S. The measurement and treatment of test anxiety. Review of Educational Research, Summer 1980, 50, 343-372.

- Vicenzi, H., & Maraschiello, R. Measuring self-responsibility: A useful interpretation. Child Development, 1978, 49, 523-525.
- Watson, D. Relationship between locus of control and anxiety. Journal of Personality and Social Psychology, 1967, 6, 91-92.
- Wine, J. Test anxiety and direction of attention. Psychological Bulletin, 1971, 76, 92-104.

APPENDIXES

APPENDIX A

PERSONAL DATA SHEET

AGE _____

GRADE _____

SEX _____

ETHNIC GROUP: White _____
Black _____
Hispanic (Spanish) _____
Native American (Indian) _____
Oriental _____
Other _____

NUMBER OF SIBLINGS INCLUDING YOURSELF:

1 2 3 4 5 6 7 8 9 10 11 12 13 14

15 16 17 18 19 20 21 22 23 24 25

Personal Comments (if any):

APPENDIX B

INSTRUMENTS

- A.
1. If a teacher passes you to the next grade, would it probably be
 - a. because she liked you, or
 - b. because of the work you did?
 2. When you do well on a test at school, is it more likely to be
 - a. because you studied for it, or
 - b. because the test was especially easy?
 3. When you have trouble understanding something in school, is it usually
 - a. because the teacher didn't explain it clearly, or
 - b. because you didn't listen carefully?
 4. When you read a story and can't remember much of it, is it usually
 - a. because the story wasn't well written, or
 - b. because you weren't interested in the story?
 5. Suppose your parents say you are doing well in school. Is this likely to happen
 - a. because your school work is good, or
 - b. because they are in a good mood?
 6. Suppose you did better than usual in a subject at school. Would it probably happen
 - a. because you tried harder, or
 - b. because someone helped you?
 7. When you lose at a game of cards or checkers, does it usually happen
 - a. because the other player is good at the game, or
 - b. because you don't play well?
 8. Suppose a person doesn't think you are very bright or clever
 - a. can you make him change his mind if you try to, or
 - b. are there some people who will think you're not very bright no matter what you do?
 9. If you solve a puzzle quickly, is it
 - a. because it wasn't a very hard puzzle, or
 - b. because you worked on it carefully?
 10. If a boy or girl tells you that you are dumb, is it more likely that they say that
 - a. because they are mad at you, or
 - b. because what you did really wasn't very bright?

Page 2-A.

11. Suppose you study to become a teacher, scientist, or doctor and you fail. Do you think this would happen
 - a. because you didn't work hard enough, or
 - b. because you needed some help, and other people didn't give it to you?
12. When you learn something quickly in school, is it usually
 - a. because you paid close attention, or
 - b. because the teacher explained it clearly?
13. If a teacher says to you, "Your work is fine," is it
 - a. something teachers usually say to encourage pupils, or
 - b. because you did a good job?
14. When you find it hard to work arithmetic or math problems at school, is it
 - a. because you didn't study well enough before you tried them, or
 - b. because the teacher gave problems that were too hard?
15. When you forget something you heard in class, is it
 - a. because the teacher didn't explain it very well, or
 - b. because you didn't try very hard to remember?
16. Suppose you weren't sure about the answer to a question your teacher asked you, but your answer turned out to be right. Is it likely to happen
 - a. because she wasn't as particular as usual, or
 - b. because you gave the best answer you could think of?
17. When you read a story and remember most of it, is it usually
 - a. because you were interested in the story, or
 - b. because the story was well written?
18. If your parents tell you you're acting silly and not thinking clearly, is it more likely to be
 - a. because of something you did, or
 - b. because they happen to be feeling cranky?
19. When you don't do well on a test at school, is it
 - a. because the test was especially hard, or
 - b. because you didn't study for it?
20. When you win at a game of cards or checkers, does it happen
 - a. because you play real well, or
 - b. because the other person doesn't play well?

Page 3-A.

21. If people think you're bright or clever, is it
 - a. because they happen to like you, or
 - b. because you usually act that way?
22. If a teacher didn't pass you to the next grade, would it probably be
 - a. because she "had it in for you," or
 - b. because your school work wasn't good enough?
23. Suppose you don't do as well as usual in a subject at school. Would this probably happen
 - a. because you weren't as careful as usual, or
 - b. because somebody bothered you and kept you from working?
24. If a boy or girl tells you that you are bright, is it usually
 - a. because you thought up a good idea, or
 - b. because they like you?
25. Suppose you became a famous teacher, scientist or doctor. Do you think this would happen
 - a. because other people helped you when you needed it,
or
 - b. because you worked very hard?
26. Suppose your parents say you aren't doing well in your school work. Is this likely to happen more
 - a. because your work isn't very good, or
 - b. because they are feeling cranky?
27. Suppose you are showing a friend how to play a game and he has trouble with it. Would that happen
 - a. because he wasn't able to understand how to play, or
 - b. because you couldn't explain it well?
28. When you find it easy to work arithmetic or math problems at school, is it usually
 - a. because the teacher gave you especially easy problems, or
 - b. because you studied your book well before you tried them?
29. When you remember something you heard in class, is it usually
 - a. because you tried hard to remember, or
 - b. because the teacher explained it well?

Page 4-A.

30. If you can't work a puzzle, is it more likely to happen
 - a. because you are not especially good at working puzzles, or
 - b. because the instructions weren't written clearly enough?

31. If your parents tell you that you are bright or clever, is it more likely.
 - a. because they are feeling good, or
 - b. because of something you did?

32. Suppose you are explaining how to play a game to a friend and he learns quickly. Would that happen
 - a. because you explained it well, or
 - b. because he was able to understand it?

33. Suppose you're not sure about the answer to a question your teacher asks you and the answer you give turns out to be wrong. Is it likely to happen
 - a. because she was more particular than usual, or
 - b. because you answered too quickly?

34. If a teacher says to you, "Try to do better," would it be
 - a. because this is something she might say to get pupils to try harder, or
 - b. because your work wasn't as good as usual?

END OF PART A

- B.
1. While taking an important examination, I perspire a great deal. _____
 2. I get to feel very panicky when I have to take a surprise exam. _____
 3. During tests, I find myself thinking of the consequences of failing. _____
 4. After important tests I am frequently so tense that my stomach gets upset. _____
 5. While taking an important exam I find myself thinking of how much brighter the other students are than I am. _____
 6. I freeze up on things like intelligence tests and final exams. _____
 7. If I were to take an intelligence test I would worry a great deal before taking it. _____
 8. During course examinations, I find myself thinking of things unrelated to the actual course material. _____
 9. During a course examination, I frequently get so nervous that I forget facts I really know. _____
 10. If I knew I was going to take an intelligence test, I would feel confident and relaxed before hand. _____
 11. I usually get depressed after taking a test. _____
 12. I have an uneasy, upset feeling before taking a final examination. _____
 13. When taking a test, my emotional feelings do not interfere with my performance. _____
 14. Getting a good grade on one test doesn't seem to increase my confidence on the second. _____
 15. After taking a test I always feel I could have done better than I actually did. _____
 16. I sometimes feel my heart beating very fast during important tests. _____

APPENDIX C

INSTRUCTIONS FOR INSTRUMENTS

INSTRUCTIONS FOR INSTRUMENTS

Hello, I'm John Corpolongo of Oklahoma State University. I'm visiting your class today to obtain your views concerning tests and school in general. Your answers are intended to help teachers better understand your opinions concerning these areas.

In the stapled packets before you, please find a cover sheet requiring your age, grade, sex, ethnic group, and number of siblings in your family, including yourself. Please fill in these blanks and stop when you get to the item requiring the information regarding your siblings. When you get to this item, stop and count the total number of children in your family, including yourself. Place a vertical mark after this total number. Next, please circle your position in this number, one representing the youngest, two the next-to-youngest, etc. For example, if there are three children in your family and you are the oldest, then you would place a line after 3 and circle 3. If you are the youngest of four children, then you would place a mark after 4, and circle 1. If you are an only child, then you would place a mark after 1 and then circle 1. Are there any questions about how this is completed? Please turn to form A [or form B, whichever was administered first for that class].

These three pages of questions concern your opinions about teachers, schoolwork, and school in general. Please read each question carefully and then circle either a or b,

depending upon how you feel about that question. Please choose just one response, either a or b. Please keep in mind that the questions concern your own feelings, not those of others. Try not to hurry, as you will not be timed. You should have plenty of time to complete your responses. If there are any concerns about what the questions mean or how they are read, please raise your hand and I will help you. Now, are there any questions? Please stop after question 34 and await further instructions.

On the last page of the packet (B) you will find 16 true-false questions concerning your opinions about tests given in school. Please read the questions carefully and respond by placing a T for true or an F for false after each question, depending upon your own feelings about the question. If the question accurately describes your feelings, mark a T after the question. If the question does not describe your feelings about tests, please mark an F. Please mark either a T or F, but not both. Keep in mind that these questions concern your feelings, not those of others. There are no "right" or "wrong" responses. Try not to hurry, as you will not be timed. If there are any questions about what the questions mean or how the sentences are read, please raise your hand and I will help you. Are there any questions? Please begin and stop after question 16.

APPENDIX D

MEANS AND STANDARD DEVIATIONS OF INSTRUMENTS

TABLE VI
 MEANS AND STANDARD DEVIATIONS OF
 IAR SCORES BY GRADE

Grade	n	Total I		I+		I-	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
10	46	24.02	3.97	12.71	2.48	11.30	2.56
11	43	25.32	3.75	13.16	2.01	12.16	2.49
12	27	22.70	4.75	11.74	2.35	10.96	3.22
10,11,12	116	24.20	4.17	12.66	2.33	11.54	2.72

TABLE VII
 MEANS AND STANDARD DEVIATIONS OF
 IAR SCORES BY SEX

Sex	n	Total I		I+		I-	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Males	53	23.45	4.56	12.40	2.53	11.06	2.94
Females	63	24.83	3.74	12.87	2.14	11.95	2.47

TABLE VIII
 MEANS AND STANDARD DEVIATIONS OF
 IAR SCORES BY BIRTH ORDER

Birth Order	n	Total I		I+		I-	
		Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Youngest	38	23.66	4.08	11.95	2.30	11.71	2.86
Between ^a	34	25.12	4.15	13.26	2.00	11.85	2.79
Oldest	44	23.95	4.25	12.80	2.47	11.16	2.57

^a Includes births anywhere between those of youngest and oldest siblings.

TABLE IX
 MEANS AND STANDARD DEVIATIONS
 OF TAS SCORES BY
 GRADE

Grade	n	Mean	Std. Dev.
10	46	7.85	4.04
11	43	7.91	3.50
12	27	8.22	3.56
10, 11, 12	116	7.96	3.71

TABLE X
 MEANS AND STANDARD DEVIATIONS
 OF TAS SCORES
 BY SEX

Sex	n	Mean	Std. Dev.
Males	53	7.45	3.51
Females	63	8.38	3.84

TABLE XI
 MEANS AND STANDARD DEVIATIONS
 OF TAS SCORES BY
 BIRTH ORDER

Birth Order	n	Mean	Std. Dev.
Youngest	38	9.00	3.55
Between ^a	34	7.44	3.91
Oldest	44	7.45	3.57

^a Includes births anywhere between those of youngest and oldest siblings.

VITA /

John Michael Corpolongo

Candidate for the Degree of

Master of Science

Thesis: THE RELATIONSHIP BETWEEN LOCUS OF CONTROL AND TEST ANXIETY IN A SELECTED SAMPLE OF TENTH-, ELEVENTH- AND TWELFTH-GRADE STUDENTS

Major Field: Applied Behavioral Studies

Biographical:

Personal Data: Born in St. Louis, Missouri, September 9, 1956, the son of Dr. and Mrs. J. D. Corpolongo.

Education: Graduated from Iola High School, Iola, Kansas in May, 1974; received Associate of Arts degree from Allen County Community College, Iola, Kansas in 1976; received Bachelor of Science degree from Pittsburg State University, Pittsburg, Kansas in 1978; completed requirements for Master of Science degree in May, 1983.

Professional Experience: School Psychometrist, Oklahoma Department of Education, 1981-1982; member of Oklahoma School Psychological Association, 1981-1982.