

THE RELATIONSHIP OF ACADEMIC ACHIEVEMENT TO STUDENT
PERCEPTION OF COMPETITION IN THE SCHOOLS, TO
STUDENT LOCUS OF CONTROL ORIENTATION,
AND TO SEX DIFFERENCES IN
EIGHTH GRADE STUDENTS

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Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
December, 1979

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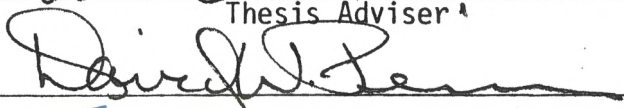


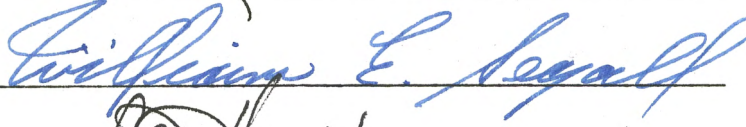
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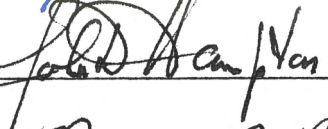
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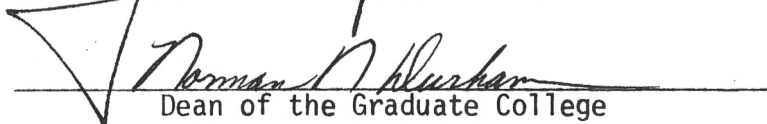


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PREFACE

This study is primarily concerned with how early adolescents actually perceive the structure of competition in the schools. The relationship of academic achievement to student's perception of academic competition and to students' locus of control orientations was investigated for eighth grade students. The relationship between the eighth graders perception of competition in the schools and their locus of control orientations was studied. Finally the difference between male and female students perception of academic competition was examined.

The writer wishes to express her appreciation and sincere gratitude to her major adviser, Dr. Paul Warden, for his guidance, assistance, and encouragement throughout this study. Special gratitude is also due Dr. David Perrin for his assistance in analyzing the data generated by this study and to Dr. John Hampton for his encouragement during the early days of getting started on this dissertation. Appreciation is also expressed to other committee members, Dr. William Segall and Dr. Price Ewens, for their advice and critique during the various stages of preparation of this study.

Gratitude is extended to the 1978-1979 eighth grade class of Perry, Oklahoma Junior High School for participating in this study. Mr. John Coker, Superintendent of the Perry schools, Mr. Erv Abraham, principal of the junior high school, and Mr. James Thompson, principal of the elementary school are extended a special note of thanks for

their support during the research. Thanks also go to Mr. Bill Guenther and to Mr. Kenneth Frank for administering the instruments used in this study to their eighth grade science classes.

To my parents, Mr. and Mrs. James F. George, I extend my sincere appreciation and thanks. Without their support and encouragement this study might never have been attempted.

Finally, special gratitude is expressed to my husband, Ernie, for all the assistance he gave me. His understanding, encouragement, and love during the time of this study are very much appreciated.

TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION.	1
Aspects of Development	3
Statement of the Problem	6
The Purpose of the Study	8
Definition of Terms.	9
Null Hypotheses.	10
Assumptions of the Study	11
Limitations of the Study	11
II. REVIEW OF RELATED LITERATURE.	12
Introduction	12
Competition in the Schools	12
Competition and Locus of Control	20
Competition and Achievement.	23
Competition and Sex Differences.	32
Locus of Control and Achievement	35
III. METHODOLOGY	43
Introduction	43
Description of Sample.	43
Instruments.	43
Locus of Control.	43
Competition	47
Academic Achievement	50
Procedure.	50
Analysis of the Data	52
IV. ANALYSIS OF THE DATA.	53
Introduction	53
Relationship Between Student's Perception of Competition in the Schools and Students' Locus of Control Orientations.	54
Relationship Between Students' Perception of Compe- tition in the Schools and Academic Achievement	56
Relationship Between Academic Achievement and Students' Locus of Control Orientations.	59
Relationship Between the Perception of Competition in the Schools and Sex of Students	59

Chapter	Page
Analysis of Multiple Regression Equations	62
Reliability of Instruments	66
Item Analysis and Descriptive Statistics	66
V. DISCUSSION	69
Introduction	69
Discussion of Conclusions	70
Discussion: Multiple Regression	75
Implications	78
Recommendations for Future Research	81
BIBLIOGRAPHY	84
APPENDIXES	94
APPENDIX A - INSTRUCTIONS FOR ADMINISTRATION AND SCORING INTELLECTUAL ACHIEVEMENT RESPONSIBILITY QUESTIONNAIRE	95
APPENDIX B - INTELLECTUAL ACHIEVEMENT RESPONSIBILITY QUESTIONNAIRE	97
APPENDIX C - INSTRUCTIONS FOR ADMINISTRATION AND SCORING COMPETITIVE-COOPERATIVE ATTITUDES SCALE	104
APPENDIX D - COMPETITIVE-COOPERATIVE ATTITUDE SCALE - WHAT I LIKE TO DO BEST AND SCHOOL WORK	106
APPENDIX E - PARENTAL PERMISSION LETTER	113
APPENDIX F - TABLES	115
APPENDIX G - FIGURES	121

LIST OF TABLES

Table		Page
I.	Pearson Product-Moment Correlation Coefficients Between Students' Perception of Competition in the Schools and Students' Locus of Control Orientation.	55
II.	Pearson Product-Moment Correlation Coefficients Between Students' Perception of Competition in the Schools and Students' Academic Achievement	58
III.	Pearson Product-Moment Correlation Coefficients Between Students' Academic Achievement and Students' Locus of Control Orientation	60
IV.	Pearson Product-Moment Correlation Coefficients Between Students' Perception of Competition in the Schools and Sex of Students.	61
V.	Step I and II: Multiple Regression Equations.	64
VI.	Step III: Multiple Regression Equations	65
VII.	Step IV: Multiple Regression Equations.	67
VIII.	Intellectual Achievement Responsibility (IAR) Questionnaire.	116
IX.	Competitive-Cooperative Attitudes Scale - What I Like to do Best	117
X.	Competitive-Cooperative Attitudes Scale - School Work.	118
XI.	ANOVA Summary Table - Measure of Academic Achievement for Males and Females.	119
XII.	Academic Grades - Eighth Grade Students.	120

LIST OF FIGURES

Figure	Page
1. Intellectual Achievement Responsibility (IAR) Questionnaire - Total Locus of Control	122
2. Intellectual Achievement Responsibility (IAR) Questionnaire - Positive Locus of Control	123
3. Intellectual Achievement Responsibility (IAR) Questionnaire - Negative Locus of Control	124
4. Competitive-Cooperative Attitudes Scale -- Competition What I Like to do Best.	125
5. Competitive-Cooperative Attitudes Scale -- Competition School Work	126

CHAPTER I

INTRODUCTION

We all live in a highly competitive society of which we are daily aware. Yet, to survive in our world today both nationally and internationally, it becomes evident that cooperation as well as competition is necessary for our continued existence. The United States considers itself to be a friendly, cooperative nation and emphasizes the importance of human rights. In our schools we find both cooperation and competition; the latter may be emphasized to the extent that it is counterproductive.

The competition fostered by the traditional formal school structure is as tangible and intense as anywhere in adult life (Wynne, 1976). Yet it is stressed in most school situations that cooperation is imperative. The importance of cooperation does not mean that competitive and individualistic experiences should be ignored. There are many times when competition is enjoyable and provides an opportunity to apply one's competencies to compare oneself with others. The research evidence does suggest that teachers are presently overusing competition, possibly misusing the individualistic goal structure, and underusing cooperation in their classrooms (Johnson and Johnson, 1975).

For many years, competition has been used in the schools to motivate children or to pass time when there are extra minutes in class that need to be filled with an activity. The child has been taught

that to excel and to surpass others is desirable. Thus, in American society, children have become exceedingly competitive, and for many children, competition has become the main focus of school life. By the time a child has reached early adolescence, he¹ will have some perception of what competition means and of how it has affected his life in the academic setting. He may still be competing with his peers for grades, honors, and awards, or he may have become so disillusioned with the emphasis upon competition in school that he has lost all desire to compete. The ideas presently held about competition in the schools are those of adult American society. It is not known how early adolescents actually perceive the structure of competition in the schools. Knowledge of how students perceive competition is needed.

A certain sense of competitiveness can encourage young people to do their best and can challenge them to great things, especially in the area of sports (Kelleher, 1977). However, Kelleher states that we need to evaluate our approach to setting up competitive situations in the schools. In schools, the assumption is that no one learns without threats of grades or failure or being less than first. That is, winning and losing are what our schools are all about, not education (Campbell, 1974). Piaget (1948) states that traditional schools have come to the point of preparing students for competitive examinations rather than for life. Under such a system the number of losers will be greater than the number of winners. Kelleher (1977)

¹The pronoun "he" will be used throughout this paper for the ease of the reader and to lessen confusion.

says that a teacher will watch a child struggle with a difficult problem and then come to some understanding. Although something great has been achieved it may only merit a grade of 75 or 70 (or less). Honor rolls and scholastic awards take no note of this accomplishment, but give recognition only to the student with the grades of 90s. So, what is the school saying to a child who has worked hard, yet sits back and watches another receive recognition? Discouragement and self-defeat come from this. Then what are we saying to the child who wins the awards and stands in the spotlight? Is he being told that he is special and therefore better than another child?

Students need to experience a balance between competition and cooperation in school. They need to be prepared to go into the competitive world as it presently exists. Yet this might better be accomplished if the competitiveness that is encouraged does not depend upon achievement over another, but upon competitiveness with oneself to do his best to the best of his ability.

Rafferty (1964) believes that competition in schools is to be valued since it insures both individual and national survival. Although others (Henry, 1963) agree with him, they express concern about a society's future well-being that demands competitive traits of its members.

Aspects of Development

Although he is negativistic, the child of two is not yet competitive (Allport, 1961). By the age of three he is taught to "get ahead", and between ages three and four, the child knows what it means to "beat you." Thus by the age of six or seven, in our culture, Allport

states, competition is a part of the individual's way of life. The majority of twelve year olds report that they are competitive at times and in certain situations (Gesell, Ilg, and Ames, 1956). The thirteen year olds are highly competitive and fourteen year olds report that they "love competition". It is further reported that the thirteen year old likes best to compete in things that matter to him. He is not too upset if he does not win, but he does want to win and will try to excel.

During the last of Piaget's developmental stages (approximately 11-15 years) which he calls formal operations, the child acquires the skill to think about problems beyond the capabilities of the child of middle years (Elkind, 1970; Flavell, 1963; Inhelder and Piaget, 1958; and Piaget, 1969). During an earlier stage (concrete operations), Inhelder and Piaget (1958) state that the child acquires skill in inter-individual relations in a cooperative framework. Then he becomes capable of reflective thinking and can think not only of the concrete present, but of the abstract and the possible (Flavell, 1963).

The early adolescent can construct ideals, reason about the future, and consider all possible factors or alternatives in a particular situation (Elkind, 1970). Thus he can now both structure his thought and apply his thinking to everyday realities. The child becomes able at this time to introspect and to reflect upon his own mental and personality traits (Elkind, 1970).

There are certain times in life for the achievement of most developmental tasks, that is there are teachable moments (Havighurst, 1972). School is the place where most children work out the

developmental task of learning to get along with their peers in both social and academic situations. As stated earlier competition seems to be developmental, thus it is in the school setting that the perception of competition regarding social and academic situations will develop. Havighurst (1972) states that the school can therefore ignore no developmental task of the child or of the adolescent, for these tasks are so interrelated that difficulty in one, may show up in difficulty in another task. By the time the child is in the eighth grade, he should have achieved this developmental task of getting along with peers, for Piaget (1948) says that middle childhood is the crucial period for learning the morality of cooperation. The child will have an opinion about competition in the schools by this time in his development.

In Erikson's (1963) fourth stage of development, industry versus inferiority, the danger for the child lies in acquiring a sense of inadequacy or inferiority. Most eighth-grade children will have passed through this stage or will be in transition from it to the fifth stage, identity versus role confusion. Thus by this time, the end of stage four, the child will have established a good understanding of the skills which he possesses. The eighth-grade student should have an idea of what he can do in relation to others in the school setting.

Kohlberg (1971) states that during the preadolescent period (ages ten to thirteen) the transition from preconventional to conventional morality occurs. Schoo (1974) states that the least amount of difference between students in the range from sixth to tenth grade exists between students in grades six and seven

and between students in grades nine and ten.

Thus based upon these theories it would seem that the eighth-grade student has achieved the developmental tasks of middle childhood, is capable of reflective and introspective abstract and realistic thought, and possesses the ability to act both competitively and cooperatively with the self understanding of his particular mode of responding. Perhaps a focus upon students at this particular grade level might provide some evidence that would lead to a greater understanding of not only eighth graders, but also, those students of higher and lower grades.

Statement of the Problem

For many years competition for course grades, academic honors, music and athletic awards in the schools has been noted. This competition continues unabated and the deleterious effects of this competition upon children in the schools has come to be of concern to adults. From the time of the child's earliest school experiences he is exposed to competitive situations and is taught that success means being better than someone else. Competition is used in the schools as a central motivating device. When the teacher has a few minutes to fill, he will reach into the "magic bag of tricks" and pull out "competition" and, thus, children are placed in a position of conflict with one another time after time.

There is evidence in the research literature that the longer American children are in school or the older they are, the more competitive they become (Greenberg, 1932; Kagan and Madsen, 1971; Madsen, 1971; Madsen and Connor, 1973; Nelson and Kagan, 1972; Richmond and

Weiner, 1973; and Smith, 1959). The research indicates that American children are more competitive than those in certain other countries and that Anglo-American children are more competitive than are American children of different ethnic groups such as Mexican-Americans or Afro-Americans (Kagan and Madsen, 1971, 1972; Madsen, 1971; Madsen and Shapira, 1970; Richmond and Weiner, 1973; and Stephan and Kennedy, 1975). There is also evidence in the research literature that urban children are more competitive than rural children and that most children perceive their classroom as being competitively structured (Johnson and Johnson, 1976; and Johnson, Johnson, and Bryant, 1973).

Proefriedt (1973) is not convinced that the intellectual life of an individual has been enhanced when he has the chance for status by exhibiting his knowledge. Such achievement may well be bound up with a lonely and inner-directed attitude on the part of the individual.

From a study of the literature, it was noted that there was no evidence of how early adolescents of differing achievement levels and locus of control orientation perceived competition in the academic setting. There is also a paucity of research dealing with the early adolescent who is between twelve and fourteen years of age. According to Hamburg (1974), most literature on adolescence derives from the late-adolescent period, and early adolescents have very little in common with late adolescents in terms of either developmental tasks or coping strategies. We need as much information as possible on how the child may be aided in the accomplishment of the developmental tasks of the early adolescent period (Schoeppe and Havighurst, 1952). Thus there exists a gap in our knowledge of youth at this early

adolescent stage.

Therefore the problem as defined by the present study is that there is a lack of knowledge concerning the relationship of a student's perception of competition in the schools, achievement level, and locus of control orientation. There is specifically a need to determine this relationship at the early adolescent stage for both sexes.

The Purpose of the Study

There is a heavy emphasis on marks, grades, and class ranks in today's schools. The competition for grades as ends in themselves places great pressure upon the children in our schools with the result that they become increasingly competitive with age and with the length of time they are in school.

This study will provide information regarding how early adolescents perceive competition in the school setting. It will provide information as to how the differing achievement levels of children and differing locus of control orientations in children are related to each other and how each is related to the way children feel about competition. Also, there is no information known to the author concerning the relationships of these three variables for eighth-grade students. This study will provide information that will contribute to the knowledge about this particular period of childhood for both sexes.

The long range value of this study lies in the application of the information it will provide. School is the business of children, and each child should be allowed to develop to his full potential in an optimum setting. If it is shown that the interaction of perception

of competition and locus of control orientation significantly affect school achievement for either sex, steps could be taken to modify these two variables in the direction of improved school achievement.

Definition of Terms

1. Perception of Competition. This is the idea that a student holds in regard to competition. In this study perception of competition will be operationally defined as the score on the Competitive-Cooperative Attitudes Scale (CCAS) adapted for use with eighth-grade students in an academic setting.

a. Perception of Competition in Relation to School Work.

This is the idea that a student holds in regard to all aspects of school in relation to academic activities.

In this study perception of competition in relation to school work will be operationally defined as the score on the Competitive-Cooperative Attitudes Scale - School Work.

b. Perception of Competition in Relation to What I like to

do Best. This is the idea that a student holds in regard to himself and his peers. In this study perception of competition in relation to what I like to do best will be operationally defined as the score on the Competitive-Cooperative Attitudes Scale - What I like to do Best.

2. Locus of Control. The degree to which an individual perceives his reinforcements as contingent upon his own behavior or independent of it determines his locus of control orientation.

a. Internal Locus of Control. Individuals with an internal

locus of control orientation often see the reinforcements (positive or negative) they receive as caused by their own behavior.

1. Positive Locus of Control. All of the positive achievement experiences (successes) for which the student assumes credit.
 2. Negative Locus of Control. All of the negative events (failures) for which the student assumes blame.
- b. External Locus of Control. Individuals with an external locus of control orientation believe that their reinforcements are caused by agents outside of themselves, by forces over which they have no control.

In this study locus of control orientation will be operationally defined as scores on the Intellectual Achievement Responsibility (IAR) Questionnaire developed by Crandall, Katkovsky, and Crandall (1965).

3. Academic (School) Achievement. Achievement in school will be operationally defined in this study as the semester grades in the basic required eighth-grade courses.

Null Hypotheses

The present study was designed to determine what relationships exist between students' perception of competition in the schools and locus of control, between students' perception of competition and academic achievement, and between locus of control and academic achievement. The relationship between these three variables was tested in a sample of eighth-grade students for both sexes. The hypotheses are based upon a review of the literature in these three areas.

Null Hypothesis I: There is no relationship between students' perception of competition in the schools and students' locus of control orientations.

Null Hypothesis II: There is no relationship between the students' perception of competition in the schools and academic achievement.

Null Hypothesis III: There is no relationship between academic achievement and students' locus of control orientations.

Null Hypothesis IV: There is no relationship between the perception of competition in the schools and the sex of the students.

Assumptions of the Study

1. It is assumed that the students in the eighth-grade classes will answer the items on the instruments measuring locus of control orientation and perception of competition truthfully.

2. The teachers will be trained to administer the tests. It is thus assumed that they will all administer the tests as they were instructed during the training session.

Limitations of the Study

The generalization of the results of this study to other populations is one of the limitations of the present study. Only one subject population was used -- students from the eighth-grade class in Perry, Oklahoma. Whether or not these results can be generalized to other populations outside of the one used is not known.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

This review of the literature will be presented in five sections. The first section will deal with competition in the schools. The second section of the review will deal with studies which have looked at the relationship between competition and locus of control. The third section will present the research that has dealt with competition and achievement. The fourth section will present the research concerning sex differences and competition. Finally the fifth section of this review will deal with the literature on locus of control and achievement.

Competition in the Schools

Competition in the school setting has been a topic of interest for a number of years with those on either side of the issue promoting their views. The literature reveals that much has been written about competition and the effect that it has on children, but the use of competition in the schools today remains much the same as it was fifty years ago.

Wax (Wax and Grenis, 1975) states that in the classroom, the highest praise is reserved for those who have beaten their peers.

Competition brings pain to some, when education ought to be a joyful experience for all. Wax says he is not advocating the elimination of competition, but rather its punitive effect upon the loser and the disproportionate reward for the winner.

Combs (1957) says that the common belief that we live in a competitive society is a myth and that our society is cooperative and interdependent. He believes that only those who believe that they have a chance of winning will compete. Only those school children who believe they can win scholastic honors will compete for them, and the rest of the children sit back and let the competitors work as hard as they can. In fact Combs says, competition can easily acquire the philosophy of "dog eat dog" as the temptation of winning at any cost becomes the chief goal. Thus forcing children to compete can have serious consequences by being both threatening and discouraging to those who feel that they cannot compete.

Grenis (Wax and Grenis, 1975) takes a different approach from Wax and Combs and says that competition in the schools is necessary in order to help children live as members of a competitive society. He believes that there should be a return to the concept of excellence, a setting of standards, and the evaluation of students in a competitive group climate.

Phillips and Devault (1957) in an evaluation of the research on competition and cooperation say that business and industry operate on a competitive basis. Yet individuals in even the most competitive businesses must work together if their companies are to survive. A similar mixture of cooperation and competition exists in our schools. In many classrooms, children are assigned grades on a competitive basis

and at the same time, they are encouraged to work with others.

Yet today schools are structured in such a way that they are forced to be competitive through the use of scholastic grades, standardized scores, the number of students receiving merit scholarships and going to college, class ranks, and honor rolls (Scriven and Scriven, 1975; and Thompson, 1972). Unfortunately excessive competitiveness is one of the conflicts that inhibits or facilitates the learning process (Kagan, 1965; and Raubinger, 1971). Some children are easily frustrated or discouraged when the demand for scholastic achievement is excessive and no gratification results. The child may give up or become so competitive that he loses sight of the values of the achievement in his relentless effort to surpass instead of learn (Baker and Doyle, 1957; and Meyer, 1968).

A competitive spirit in school fosters the idea that one studies mainly to be ahead of others. In an atmosphere of competition no one child can be sure of his place in the group (Dreikurs, 1957). So instead of providing a sense of worth and equality for each student, competition makes one student feel superior and another inferior (Dreikurs, Grunwald, and Pepper, 1971). In an accelerated classroom some children are under so much pressure due to the competition to succeed that they may eventually break from the strain. In competitive heterogeneous classes, the slower children become aware of their shortcomings and thus become further discouraged and feel that they cannot do as well as others (Ausubel and Sullivan, 1970).

While competition may be viewed as an inevitable part of life, it should be controlled (Campbell, 1973). Yet an extreme emphasis on cooperation is not without its problems. If the student depends

upon group activities to the extent that he does not learn to work alone, the cooperative approach is being overemphasized. In general, most of the literature is in agreement that healthy forms of competition can take place within cooperative types of learning activities. Since it is recognized that some competition does exist in reality and cannot be completely avoided, Cherrington (1973) suggests that the schools help mitigate the deleterious effects of competition so that the losers will suffer no undue hardships and the rewards will come from genuine merit.

Deutsch (1949a) states that there are very few situations in real life that are purely cooperative or competitive. Rather most situations of everyday life involve both cooperation and competition. As for example, the members of an athletic team may be cooperatively inter-related with respect to winning the game, but competitively related with respect to being the star of the team.

In reviews of the literature of competition (Johnson and Johnson, 1974a, 1974b, 1975) it is stated that critics recommend competition never be used, but these authors feel that the occasional and appropriate use of competition is quite valuable for educators. Work with adolescents suggests that by structuring intergroup competition, peer forces can cause individual members to become more interested and involved in the group's tasks, producing increases in achievement (Spilerman, 1971).

Probably the greatest criticism of competition is directed against the usage of a competitive grading system (Baker and Doyle, 1957; Deutsch, 1949b; DeZouche, 1945; Kelleher, 1977; Lender, 1940; Raubinger, 1971; and Wynne, 1976). There are several innovative uses of competition in the schools (Rainey, 1975) and systems of evaluating and

reporting student progress (Vars, 1970, 1976) reported in the literature.

Competition has been shown to increase with increasing age (Greenberg, 1932; Kagan and Madsen, 1971; Madsen, 1971; Madsen and Conner, 1973; Nelson and Kagan, 1972; and Richmond and Weiner, 1973). Children have to be trained either formally or informally to find "winning" rewarding, to find competition rewarding and so on (Staats, 1971). Much of this training is the result of appropriate conditioning experiences in the schools such as, "work as hard and fast as you can and try to be the first one through."

Certain cultures are more oriented toward competition than others. Within the United States it has been shown that among different ethnic groups, Anglo-American children are the more competitive in comparison to Afro-Americans and Mexican-Americans (Kagan and Madsen, 1971; Madsen and Shapira, 1970; Richmond and Weiner, 1973; and Vance and Richmond, 1975). Anglo-American children have also been shown to be more competitive than children from other cultures (Kagan and Madsen, 1971, 1972; Madsen, 1971; and Madsen and Shapira, 1970). In a discussion of competition as a motivational classroom technique, Clevenger (1973) states that it is absent in the kibbutz, and that although it is used in Soviet schools, it is not commonly approved of because of its negative effect upon slower pupils. He further says that in Japan competitiveness is considered an undesirable personal characteristic and the schools reflect this attitude.

A group of preadolescents in India were studied in an attempt to analyze the nature of cooperation and competition (Pareek and Dixit, 1974). The subjects, from different Indian cultural groups were administered a cooperative and competitive disposition inventory and a

cooperative and competitive proneness instrument. In addition each subject participated in a two-person game where a subject might respond with either competitive or cooperative moves. Results of the study indicated that competitive disposition was found to have significantly positive correlation with competitive proneness ($r = .269$), but the same is not true of cooperative disposition and proneness ($r = .082$). There was a negative and significant correlation between competitive proneness and cooperative proneness ($-.423$) suggesting that they are opposites of each other. In addition, the competition in the game behavior seemed to be of a different kind than that implied in the two tests of disposition and proneness.

It becomes increasingly apparent that children in American schools are exposed to competitive experiences and rewarded for competitive responses. They are taught that success means being better than someone else, and present day educational experiences emphasize that one must compete in order to achieve a desired reward.

Results of a study by Johnson and Johnson (1976) indicated that students, in the schools studied, felt that their school emphasized competition among students. The researchers felt that there was little information on whether students actually perceive their schooling experiences to be competitive or whether they would prefer the cooperative alternative. A questionnaire consisting of two questions was administered to students in open and traditional sixth-grade classrooms and to eleventh-grade students. Each of the two questions described two alternative classrooms, and the students were to select the one most like their own classroom and the one they would prefer as their classrooms. Fifty-five percent of the sixth graders in an

open classroom perceived school as being competitive, but seventy percent stated that they would prefer a cooperative situation. For the sixth-grade students in a traditional classroom 62½% perceived school as being competitive and 61% preferred a cooperative classroom. The responses of the eleventh graders showed that 75% felt that their classroom was competitive, but only 65% preferred a cooperative structure.

The effects of competitively structured environments differ for winners and nonwinners (Crockenberg, Bryant, and Wilce, 1976). In a study of fourth-grade children, the winners viewed the competitive situation as exciting, but the nonwinners did not share this feeling.

Mithaug (1973) found in a study of fifteen-year-olds that children who compete strive to surpass another's task performance and, in the process, compare their own task achievements with another's achievements. Mithaug concludes that until children have developed the skill of comparing themselves with another they will not be capable of competitive behavior. Yet this skill comes early in a child's life for the four- and five-year-olds say, "I'm taller than you", or "I can run faster and jump higher than you."

Student attitudes were measured in a group of 2,432 high achieving children from second through twelfth grades (Johnson and Ahlgren, 1976). Attitudes were measured with the Minnesota School Affect Assessment (MSAA) and results grouped into four grade level groups (2, 3; 4, 5, 6; 7, 8, 9; 10, 11, 12). The results of the survey indicated that competitiveness progressively consolidates as a trait during the schooling experience, while cooperativeness is relatively unaffected by current school practices.

Cook and Stingle (1974) in a review of cooperative behavior in

children stated that cooperative and competitive behavior may be exhibited by the same person in a given situation or cooperative behavior may be directed toward a competitive end such as in team sports. Yet they conclude that apparently our culture suffers from a "cooperation deficiency". Whether this is a result of a lack of cooperative school experiences and an emphasis on competitive school experiences is not known.

Students need to experience a balance of competition and cooperation in the schools, for without a chance to engage in competitive-cooperative activities the student might not learn how to exercise these skills (Ediger, 1975; and Wynne, 1976). In the schools, teachers need to understand classroom dynamics in order to deal with intergroup conflicts. It is recommended that teachers structure the classroom so that groups of students compete against other groups rather than having individual students competing (Johnson, 1970).

Studies have largely used games to obtain data regarding competitive attitudes. Martin and Larsen (1976) felt that the usefulness of games as methodological tools is somewhat questionable so they have developed a Likert-type attitude scale measuring attitudes toward competition and cooperation.

In summary, most of the literature on competition in the schools is in agreement that it does exist and has been a part of the schools for a number of years. There is disagreement as to the value of competition and its effect upon children. Studies show that American children are very competitive and become more so with age. One study showed that although students viewed their own classroom as

competitively structured, they preferred a cooperative classroom structure. The schools need to provide opportunities for students to experience both competitive and cooperative situations.

Competition and Locus of Control

There have been very few studies reported in the literature dealing directly with competition and locus of control. One such study involved sixth-grade students from twenty classrooms in a suburban community of Minneapolis (Johnson, Johnson, and Bryant, 1973). All students were administered the Intellectual Achievement Responsibility Questionnaire as a measure of locus of control to determine if they felt that in situations involving intellectual achievement, that control was internal or external.

The researchers then selected the boy from each classroom who was the most extreme internalizer and the boy who was the most extreme externalizer. Each of the forty boys, twenty internalizers and twenty externalizers, were then shown a group of three pairs of photographs. One photograph in each pair depicted an aspect of a cooperative classroom structure and the other photograph depicted some aspect of a competitive classroom structure. During the interview with each child, he was read a story about a pair of photographs. He was asked, "Which of these is more like school?" After the child made his selection he was asked why he made the selection that he did. Then he was asked, "Which of these do you prefer?" He was again asked to explain his response. If a subject's responses to the three aspects were not all cooperative or all competitive, he was classified on the basis of the majority of his responses.

The results of this study indicated that twenty percent of the externalizers and fifteen percent of the internalizers classified their classrooms as cooperative. Classrooms were classified as competitive by eighty percent of the externalizers and eighty-five percent of the internalizers. When the responses were combined, 17.5% of the subjects classified their classroom as cooperative and 82.5% classified their classrooms as competitive. On the basis of binomial tables and a predicted result of .5 these results are significant at the .01 level. The majority of the students preferred a cooperative structure. Seventy-five percent of the externalizers preferred a cooperative classroom while fifty-five percent of the internalizers preferred a competitive classroom.

Johnson, Johnson, and Bryant (1973) state the externalizers prefer interpersonal support in their environment. Thus cooperatively structured school situations may well promote the adaptation and the achievement of the externalizing pupil. Internalizing pupils seem to be able to adapt to either a cooperative or a competitive classroom structure. They appear to have confidence in their ability to achieve and are not threatened by working alone. Thus the researchers conclude that for optimum student motivation, teachers need to have the ability to structure cooperative classroom situations as opposed to negative competitive ones. They further state that the most productive classroom arrangement may be one that encourages competition between groups and cooperation within groups.

The only other study that was found relating locus of control and competition was of interethnic competition between Anglo-Americans,

Blacks, and Chicanos (Stephan and Kennedy, 1976). This study used decomposed matrix boards to play a game using math. The subjects were 135 sixth-grade males in a southwestern city. Forty-five students were from each of the three ethnic groups. Each subject was also given brief questionnaire measures of internal versus external locus of control, self-esteem, and authoritarianism. Each student was told he would play the game with another student for a candy reward. He was shown only a picture of his partner who was of the same or a different ethnic group from the child. After completion of his move each subject sent a series of matrices to his partner. The degree to which the subject made himself vulnerable to a low outcome by giving risky matrices to his partner was used as a measure of the student's trust in his partner.

The experimental design was a 3 x 3 x 3 factorial analysis of variance in which the three factors were ethnic group of the student, ethnic group of partner, and ethnic group of experimenters. A significant main effect for ethnic group of subject was obtained. Anglo-Americans competed more against their partners than did the other two groups ($F = 2.98, p = .05, df = 2/108$). Anglo-Americans were the least trusting and were more internally oriented. The Blacks competed the least against their partners, were the most externally oriented, and were the highest on authoritarianism. Results for the locus of control measure were significant with Anglos highest in feelings of internal control, then Chicanos, and then Blacks ($F = 5.97, p < .01, df = 2/108$). One interpretation given by Stephan and Kennedy for the results on trust is that the Anglos, who competed more than the other groups, expected to be treated by their

partners in a similar way. This would lead them to expect competitive treatment from their partners.

In summary, one study indicates that students prefer a cooperatively structured classroom as opposed to a competitive one. A higher percentage of students with an external locus of control orientation than students with an internal locus of control orientation stated a preference for the cooperative classroom. It was felt that internalizing students are better able to adapt to either a competitive or cooperative classroom setting. One other study showed that Anglo-American sixth-grade males were more competitive and more internal in their locus of control orientation than were subjects from two other American ethnic groups.

Competition and Achievement

Clifford (1971) states that in competition research there is a lack of consistency among the findings, and that directives for the use of competition in education are very limited. She goes on to say that the discrepancies in definitions of terms also complicate the interpretations and comparisons that might be made among studies.

Studies of the relationship of competition and academic achievement have been for the most part in agreement that competition results in higher achievement by adding interest, when the task is a simple drill activity, is of a boring nature, or when a quantity of work on a mechanical or skill-oriented task is desired (Clifford, 1971; Julian and Perry, 1967; Scott and Cherrington, 1974; Senior and Brophy, 1973; and Shaw, 1958). When the task is some sort

of problem-solving activity, there have been conflicting results as to whether competition or cooperation lead to higher achievement (Clifford, 1972; Clifford, Cleary, and Walster, 1972; and Wheeler and Ryan, 1973).

When Clifford (1971) studied 112 fifth-and sixth-grade students at an elementary school in Illinois, subjects were divided into seven treatment groups: individual with and without reward; homogeneous group competition with and without reward; heterogeneous group competition with and without reward; control group. They were given a digit-letter task which consisted of associating one of six alphabet characters with a two-digit number according to a key and then reproducing the correct letter in a blank. The data were analyzed by planned orthogonal comparisons. Mean difference scores were reported and the F test of significance used. Interaction among the four competitive treatments across blocks was significant at the .05 level [$F(1, 84) = 3.91, p \leq .05$].

The results showed that a subject's performance in a competitive treatment is dependent upon three factors: his initial ability relative to that of his classmates; the presence or absence of a reward; the homogeneous or heterogeneous intellectual nature of the group in competition. Performance was higher in the competitive groups on this speed-related task.

Clifford (1971) stated that the use of rewards in competitive conditions is most effective in a homogeneous group in comparison to a heterogeneous group. When rewards were not used the homogeneous competitive group had a lower mean performance (.06) than did the heterogeneous group (1.06). With rewards the homogeneous

competitive group's mean performance was 4.63 and the heterogeneous group's mean performance was 1.50.

Festinger (1954) said that it is assumed that the pupil regards the levels of performance of his competitors as comparable, in so far as they are neither too far above nor too far below his own level of performance. Thus competition can provide for each pupil a standard of comparison by which he may judge his level of performance.

Other research concerning competition and achievement includes the following studies. A study, with 157 undergraduate students at the State University of New York at Buffalo as subjects, was conducted contrasting intra-group and inter-group competition with a cooperative group (Julian and Perry, 1967). Subjects were randomly assigned to four-person teams and were given the exercise of thirty brief statistical computations and two discussion questions. This was followed by a questionnaire which each subject completed for the purpose of measuring interpersonal relations among team members.

Subjects were told that grades would be assigned according to certain conditions. For thirteen of the groups, each member of the team with the best paper received an A, the team members' with the second best paper each received B's (group competition). In the next thirteen groups (pure cooperation) grades were assigned on the basis of the number of points the team earned. For eleven groups (individual competition) grades were assigned on an individual basis regardless of whom one worked with as a partner.

Since all groups worked the thirty problems correctly, only the answers to the discussion questions were analyzed further.

The results which were given as mean team performance indicated that both individual and group competition produce a greater quantity of performance. The quality of performance was also significantly higher for the competitive conditions. The cooperative conditions did induce the most favorable interpersonal relations among group members.

In another study competition was compared with praise as motivating incentives for kindergarten and second-grade children (Senior and Brophy, 1973). The first experimental task was described as boring, but the second task, stacking blocks to make as high a tower as possible, was considered to be more interesting. The results indicated that although competition was more effective with second graders than with kindergarten students, with boys than with girls, and with the more boring task, competition was not significantly more effective than praise except on boring tasks. Thus the researchers state that these results suggest that in school, competition is most useful to add interest to dull tasks. However such tasks are not (or should not be) an important part of the school curriculum.

A study by Clifford, Cleary, and Walster (1972) found that a competitive treatment had no effect on the performance of subjects taking a power oriented test. Subjects in the control group, under regular classroom testing procedures, did equally as well as those subjects in the competitive treatment groups. In this study a group of 1,035 fifth- and sixth-graders in thirty-six classrooms in Wisconsin were administered the mathematics subtests of the School and College Ability Tests (SCAT) to measure the effects of competition when

rewards were given to the child with the highest achievement score on the test. The children were randomly grouped into three homogeneous groups. In one group the children worked in competition against each other with the child who had the highest score in his subgroup receiving candy as a reward. The second group was the same as the first group, but in addition the child with the highest score in his subgroup was to be the lead player in a game. The third group was a control group and each child worked the math problems as a regular test. A second dependent measure was the subject's interest rating on the task.

A 2 x 3 randomized block design consisting of three treatments and two grade levels was used for analysis of this experiment. A multivariate analysis program was used to test the hypothesis. No significant difference was found between the two competitive treatments (competitive with reward and competitive with game) for either the performance or interest variable. Thus neither the use of rewards nor the use of game techniques in a competitive situation have an important effect on test performance. Also, the subjects in the control group performed as well as the subjects in the two experimental groups. However, the subjects definitely preferred a testing situation in which competition was accentuated and where there was a promise of rewards or the use of a game device. Thus the researchers speculated that competition increases performance more in a speed task than in a power task, and it increases interest more in a power task than in a speed task.

It was felt that there was a necessity to examine competition in a learning situation as opposed to a testing situation (Clifford, 1972).

A group of students from sixty-six fifth-grade classes in Milwaukee were involved in a two-week vocabulary learning task. There were three treatment conditions: a control group that was noncompetitive; a reward group (candy to high scorers) that was competitive; the game group (follow-up game activity with two high scorers having the advantage in a game) that was competitive. Subjects were administered daily tests over the vocabulary words they had received the previous day. The interest in the task of those students in the competitive groups was significantly greater than was the interest of the students in the control group. Yet neither the performance nor the retention of the material from the vocabulary learning task was noticeably improved with the use of the competitive treatments.

No difference was found in achievement between competitive and cooperative groups in a study of 88 fifth- and sixth-grade students engaged in a social studies inquiry activity (Wheeler and Ryan, 1973). The authors of this study state that one reason for this surprising result could be that the achievement examination was biased in favor of the subjects from the competitive treatment group. All subjects were administered the achievement posttest under competitive conditions. Since each subject worked individually without any help, the testing situation resembled a school examination and probably had an effect upon the subjects.

Team competition significantly increased seventh-grade students' mathematics achievement over that of a traditionally taught class (Edwards, DeVries, and Snyder, 1972). For this study a nonsimulation game was used with classes of average and low math ability with all students increasing significantly in achievement when team competition

was used.

When a group of undergraduate college students at the University of Michigan participated in cooperative and competitive discussion groups, exam performance of the two groups did not differ significantly (Haines and McKeachie, 1967). However, the students preferred the cooperative sessions which resulted in less tension and anxiety.

A group of graduate students at the University of Washington competed for grades on research papers, but not on the final exam (Clark, 1969). Results of this study indicated that higher performance resulted under the competitive condition than under the non-competitive condition.

Many of the research studies have found no sex differences in degree of competitiveness in studies of competitive versus cooperative treatments. However, a study with male and female undergraduates at Case Western Reserve University as subjects involved solving anagrams in a competitive situation (House, 1974). The results showed that females in a competitive situation with males or with other females had significantly lower performance expectancies than either females working alone or all male competitive groups. This may be due in part to a desire by the females to appear noncompetitive. There were no significant differences in actual performance scores among the groups. This study is especially interesting since much of the research with elementary age children has found little difference between males and females in competitive situations. The Senior and Brophy study (1973) is a possible exception. Competition was found to be more effective with kindergarten and second-grade boys than it was with the girls. Since children have been shown to become

increasingly competitive with age, it is possible that females at some point in development begin to deny appearances of competitiveness and so exhibit less competitive behavior.

Coleman (1959,1965) says that the school creates, with its grading system, a situation in which each student is a competitor against all his classmates for scholastic position. This has led some educators and laymen to attempt to reduce competition. Coleman maintains that the structure of competition in the schools is something for which adults, not adolescents, are wholly responsible. He suggests that interscholastic (and intramural) competition in scholastic matters be substituted for the interpersonal competition for grades which presently exists. Since such a system is effective in sports and in music, Coleman feels it would be equally effective in scholastic matters as well. Such a shift from interpersonal competition, with its conflict-producing effects, to intergroup competition, in which group rewards reinforce achievement might do much to change the structure of rewards in schools.

A group of tenth-grade students of average ability who had experienced nine years of educational competition with highly intelligent peers were studied to determine the effect of academic and intellectual competition upon their personal development (Skipper, 1976). Results of the School and College Ability Test (SCAT) were used to identify students of "average ability" and students of "higher ability." The "average ability" group mean was a converted score of 277 with a standard deviation of 3.38 on the SCAT. The "higher ability" group had a mean converted score of 290 and a standard deviation of 2.57. Students were administered the California

Psychological Inventory to measure personality traits. Personality characteristics investigated included capacity for status, an index of the personal qualities and attributes which underlie and lead to status; self-acceptance, an assessment of personal worth and self-acceptance; sociability, a measure that identifies persons who have an outgoing, sociable, participative temperament; achievement via conformance, an index of those factors which facilitate achievement when conformance is a positive behavior; and intellectual efficiency, an indication of the degree of personal intellectual efficiency the individual has attained. Correlation coefficients were computed between personality traits and level of intelligence to determine if level of intellect rather than peer competition was influencing personality development. One personality characteristic, capacity for status, was positively related to intellectual ability for the male, "higher ability" group. In the "average ability" groups, self-acceptance was negatively related to ability. Using the t test, comparisons between "average ability" and "higher ability" groups were made for each sex. Differences were judged significant at the .05 level. Thus it was found that a lifetime of educational competition with highly intelligent peers does affect the personality development of students of average ability with the average ability females affected more adversely than average ability males. The average ability females reported themselves on the CPI to be significantly lower in their capacity for status, self-acceptance, sociability, achievement via conformance, and intellectual efficiency when compared to the higher ability group. Males of average ability were lower on only one CPI scale, intellectual efficiency, when compared to

the higher ability group. The author concludes that such a finding strengthens our understanding of the importance of noncognitive factors in academic achievement and the role of personal and social adjustment in learning.

In summary, the studies of competition and academic achievement have been inconsistent in their results. Generally, competition has been found to result in higher achievement, by adding interest, in tasks of a simple drill nature, in tasks of a boring nature, and in tasks of a mechanical nature. Studies have produced conflicting results as to whether competition or cooperation leads to higher achievement when the task is of a problem-solving nature. One study reported that a lifetime of competition in the academic setting does affect the personality development of students.

Competition and Sex Differences

The research that has involved sex and academic competition in the schools has been very sparse. Often sex of the subject has been considered only after the main focus of the research has been investigated and discussed. The research has failed to indicate any clear results as to whether boys or girls are more academically competitive. There are other variables that are involved in this, such as age, grade, and situation.

One study (Senior and Brophy, 1973) investigated the relative effectiveness of praise and group competition as motivating incentives affecting task persistence in a group of 96 kindergarten and second-grade children. On two tasks described as boring there were two conditions. In the first a verbal statement of praise was delivered

every thirty seconds by one of the examiners. In the second condition the verbal statements were of a competitive nature. Then another group of subjects, similar to the first group, were given a task of stacking blocks which was considered a more satisfying and less boring task. Two five-way analyses of variance (Ss' sex x Ss' age x examiner x order of incentive x task) were used to investigate the results of the study. The results indicated that competition was more effective with second graders than with kindergarten children, with boys than with girls, and with boring tasks than with less boring tasks. With age, boys became relatively more influenced by competition than by praise, compared to girls.

A study was made of 216 first and second graders who participated in a game using the Madsen Cooperation Board (Richmond and Weiner, 1973). Cooperation was required in order to win prizes. A longer time to solution of the game was interpreted as evidence of greater competition. There were three ethnic groupings of the subjects; black-black, black-white, and white-white. A four-factor analysis of variance (ethnic grouping x sex x grade x reward condition) was used. The main effects of grade ($F = 2.87$, $df = 1/96$, $p \leq .05$) and sex ($F = .18$, $df = 1/96$, $p \leq .05$) were not significant. The authors conclude that sex differences were not related significantly to the cooperative-competitive behavior of this group of second grade children. Thus it appears that boys and girls at this age level respond to cues for cooperation and competition in a similar manner.

One hundred eight Caucasian fourth graders participated in a study to investigate whether winning and losing in a competitive situation are experienced differently by the two sexes (Crockenberg, Bryant,

and Wilce, 1976). The children wrote stories under either a winning condition or a nonwinning condition in a cooperative group or a competitive group. Results indicated that there are some sex differences in competitively structured environments for boys and girls. Boys appeared to follow social norms and behaved in a competitive manner. Girls also followed social norms which discourage them from behaving aggressively and competitively toward others.

Biological sex does not alter appreciably cooperative or competitive behavior according to the results of a study by Vance and Richmond in 1975. The researchers investigated the effects of self-concept, sex, and race on the cooperative-competitive behavior of 257 children, ages eight to twelve. The children played a game using a circle matrix board. The data were analyzed by an ANOVA ($3 \times 2 \times 2$) factorial design and the Duncan Multiple Range test ($p < .05$). No significant sex differences nor interaction effects were found.

One final study used 179 male and female introductory psychology students at Case Western Reserve University to explore the effect of competition on the performance expectancies, confidence, and minimal goal levels of females as compared to males (House, 1974). The experimental task involved solving anagrams either individually or under competitive conditions. The results of the study indicated that females in a competitive situation reported lower performance expectancies, confidence, and minimum goal levels than either females working alone or males in a competitive situation. The researcher states that results were interpreted as reflecting the traditional perception in our society of the feminine role as noncompetitive,

with the resultant avoidance of the appearance of competition on the part of females.

In summary, the results of the few studies that have involved academic competition and sex differences are in some disagreement. It would seem that what sex differences there are, become greater as the individual grows older and becomes aware of societal expectations. Then males appear to be more competitive than females.

Locus of Control and Achievement

Bloom (1971) in writing about the affective consequences of school achievement stated:

The student who completes secondary school has devoted almost 20,000 hours to school. It is the way in which the student and the school uses this tremendous amount of time that determines school achievement and the affective consequences of such achievement. (p. 19).

There are two curriculums within the school. One is the academic subject matter that the student is expected to learn. The other is that curriculum which teaches each student who he is in relation to others. While he may learn this second curriculum more slowly than the first it is likely that he will not forget it as quickly.

In school, children will come to perceive their school environment in unique ways and will perceive the causes of their success or rewards and failures in differing ways. Some individuals believe that things outside of themselves are the reasons for reinforcements occurring in their lives, and this is referred to as external locus of control. Those who believe that they are in control of their lives and who provide their own reinforcement have an internal locus of control

orientation (Joe, 1971; Lefcourt, 1966; and Rotter, 1966).

Reviews of the locus of control literature indicate that there is substantial interest in the locus of control variable (Joe, 1971; Lefcourt, 1966, 1976; Phares, 1976; and Rotter, 1966). With the development of locus of control scales for children, the interest of studying this variable in younger populations has increased. Phares (1976) says that since school is the main aspect of a child's life, the major realm in which locus of control in children should be studied is academic achievement.

The Intellectual Achievement Responsibility (IAR) Questionnaire developed by Crandall, Katkovsky, and Crandall in 1965 attempts to assess children's beliefs in reinforcement responsibility exclusively in intellectual academic achievement situations. The IAR limits the source of external control to those persons who most often come in face-to-face contact with a child: his parents, teachers, and peers. Bradley and Gaa (1977), in agreement with Crandall, Katkovsky, and Crandall, state that locus of control appears to be situation specific. Thus locus of control in achievement related situations may best be measured by instruments designed to assess academic related reinforcements.

The IAR consists of thirty-four questions. Half of these pertain to attributions of responsibility for success (I+) and half to attributions for failure (I-). The total IAR score is a composite of internal attributions for both success and failure.

A sample of 923 elementary and high school students drawn from five different schools in diverse kinds of communities were administered the IAR in the research involved in the development of the IAR

(Crandall, Katkovsky, and Crandall, 1965). Test-retest correlations over two months were .69 for Total I, .66 for I+, and .74 for I- for children in grades three, four, and five. Seventy ninth graders had test-retest correlations of .65 for Total I, .47 for I+, and .69 for I-. All of these correlations were significant at the .001 level. Split-half reliabilities were computed separately for the two subscales. For a random sample of 130 of the younger children, the correlation was .54 for I+ and .57 for I- after correction with the Spearman-Brown Prophecy Formula. For a similar random sample of older children, the correlations were .60 for both the I+ and I- subscales.

Total I scores correlated positively and significantly with reading, math, and language subscores and total achievement test scores of the Iowa Test of Basic Skills and with report card grades for grades 3, 4, and 5. In grades 6, 8, 10, and 12, achievement test scores on the California Achievement Test were only occasionally related significantly to IAR scores. However, significant correlations in the .20's and .30's between total I and report card grades were again obtained in each of the upper grades.

Dependent measures of achievement have varied from one study to another study. Some have used final examination grades, others have employed grade point averages, and still others have utilized scores on various standardized achievement tests (Holloway and Clark, 1976). The research on locus of control and achievement suggests that generally internals achieve at higher levels than do externals (Holloway and Clark, 1976). That is, the higher children's achievement levels are, the more likely the children are to believe

that they, rather than others, are responsible for the reinforcements which they receive (Crandall, Katkovsky, and Preston, 1962).

One of the most systematic and intensive investigations which uses the IAR to study the relation of locus of control to academic achievement is by McGhee and Crandall (1968). Subjects were third (N = 35), seventh (N = 54), and tenth (N = 45) grade children. Results indicated that children who are more highly internal on either IAR subscores or the total test score achieve higher school grades than do the external subjects.

Other studies with children as subjects using the IAR as a measure of locus of control have obtained results that were in the direction of higher grades for subjects who were more internally oriented (Buck and Austrin, 1971; Guttentag and Klein, 1976; Kennelly and Kinley, 1975; Messer, 1972; Powell, 1971; Reimanis, 1973; and Solomon, Houlihan, Busse, and Parelius, 1971). Various other internal-external locus of control instruments have been used in research with similar results indicating that academic success is related to internal locus of control (Clifford and Cleary, 1972; Finch, Pezzuti, and Nelson, 1975; Guttentag and Klein, 1976; Lessing, 1969; Nowicki and Roundtree, 1971; Nowicki and Segal, 1974; Ollendick and Ollendick, 1976; and Prawat, 1976).

In a group of three studies using three different locus of control instruments (IAR, Battle and Bailer Locus of Control Scales, and the Rotter I-E Scale), it was determined that the IAR scale was the best suited to assess locus of control with respect to school activities (Reimanis, 1973). The IAR+ scale showed significant positive correlations between internal control and achievement for third-grade girls,

fourth-grade boys, and fifth-grade girls. The correlations ranged between .38 and .54. The IAR- scale, however, had a significant negative correlation between internal control and school achievement for fifth-grade girls. The IAR Total Scale had significant positive internal control-achievement relationships for third-grade boys and fourth-grade girls with correlations ranging from .47 to .50.

A study of fifty-one eighth-grade students of slightly above average intelligence was conducted in Lincoln, Nebraska. The Pearson Product Moment Correlation between the Cromwell Locus of Control Scale and grades was .425, between the IAR+ and grades was .097, between IAR- and grades was .241, and between the total IAR and grades was .193 (Powell, 1971).

In another study of three hundred eighth-grade Afro-American students, the adequate achievers had a mean score of 27.92 and a standard deviation of 2.53 for the IAR total score. The underachievers had a mean score of 23.96 and a standard deviation of 3.56 (Buck and Austrin, 1971). Thus the results again show that the child who feels responsible for his successes and failures has higher grades.

One of the discoveries made by Coleman (1966) in his study of equality of educational opportunity in America was that a student's sense of control of the environment is related to academic achievement. Locus of control appears to have a stronger relationship to achievement than do all the "school" factors together. Coleman's survey of students at the first-, sixth-, ninth- and twelfth-grade levels remains unchallenged (Chandler, 1975). Coleman's measure was designed to assess feelings of control in a general sense without regard to specific social contexts such as the school or community. To

determine if this relationship discovered by Coleman holds for context-specific environments, Burbach and Wagoner (1974) developed a scale to tap feelings of control as they are focused on contest specific environments. Subjects ($N = 1,469$) from four public high schools in the state of Virginia responded to a five-item Likert type continuum. The findings show that a student's feeling of control over definite environments such as the school and community is significantly related in a positive direction to grade point average.

A study of sixth-grade students from a large Northeastern metropolitan area examined the mediating effects of peer status on the relationship between locus of control using the IAR and academic performance obtained from results of School and College Ability Tests (Seidner, Horne, and Harasymiw, 1976). A measure of peer status was obtained for each student using the Perception of Social Closeness Scale. Results indicated that the relationship between locus of control and achievement may be mediated by variables which are associated with the social environment of the school setting. One of these variables may be peer status. When peer status was specified, a negative relationship (Pearson Product Moment correlation coefficient of $-.57$, $p < .001$) was found between IAR and math achievement for high status students. The relationship between IAR and reading achievement was $-.36$ for the same group of students. A low negative relationship of $-.09$ was found for the relationship between IAR and math and reading achievement of low status students. It was concluded that there may be other variables mediating the relationship between achievement and locus of control which need to be studied.

As the child becomes older and enters college, the relationship

between locus of control and grades or college entrance scores is no longer as highly correlated as it was with younger subjects (Rotter, 1975). The direct prediction of school achievement by locus of control scales has been consistently more successful with children than with college students. Rotter (1975) says this may well be because only those who have achieved at a consistently high level appear in the college population, and the children samples involve a much broader range of abilities. Or, possibly the difference may be related to an increased tendency toward defensive externality with increased age and time in the school system.

Although results of most studies with college age students have found no significant relationship between locus of control and academic achievement (Duke and Nowicki, 1974; Hjelle, 1970; and Prociuk and Breen, 1974) there have been some conflicting results (Gozali, Cleary, Walster, and Gozali, 1973; and Warehime, 1972). It has been suggested that college-age females are more likely than males to adopt an expressed external orientation to be congruent with the expected female cultural role of passivity. So a truly internal female may use her verbally expressed externality to obtain what she wants. If this is the case, locus of control could be differentially predictive for males and females, with high achievement tending to be related to expressed externality in females and internality in males (Duke and Nowicki, 1974).

In summary, most studies of school age children are in agreement that those children with an internal locus of control orientation will have higher academic achievement than will those children with an external locus of control. Various instruments have been devised

to use in measuring children's locus of control. One of these, the Intellectual Achievement Responsibility Questionnaire, was devised to assess locus of control exclusively in academic achievement situations. One large scale study conducted in the United States indicated that locus of control has a stronger relationship to academic achievement than to all other school related factors together. The relationship between locus of control and academic achievement has not been found to correlate as highly with college-age subjects as with children.

CHAPTER III

METHODOLOGY

Introduction

This chapter will describe how the study was conducted. The subjects will be discussed and described. Some time will be spent on discussion of the measures used for locus of control, competition, and academic achievement. Reliability and validity for the locus of control and competition instruments will also be reported. An explanation of the procedure used in conducting the study will be given. Finally the method used for analyzing the data will be discussed.

Description of Sample

The subjects for this study were the eighth-grade students in the Perry Junior High School in Perry, Oklahoma. Parental permission letters were sent to the parents of the one hundred twelve students enrolled in the eighth grade. Ninety-six students completed the study. Of this group, fifty-one were males and forty-five were females.

Instruments

Locus of Control

The instrument used to measure the students' locus of control was the Intellectual Achievement Responsibility (IAR) Questionnaire which

was developed by Crandall, Katkovsky, and Crandall in 1965. The IAR attempts to measure children's beliefs in internal versus external reinforcement responsibility in intellectual academic achievement situations. The IAR limits the source of external control to those persons who most often come in face-to-face contact with a child, his parents, teachers, and peers.

The children's IAR scale is composed of 34 forced-choice items. Each item's stem describes either a positive or a negative achievement experience which routinely occurs in children's daily lives. This stem is followed by one alternative stating that the event was caused by the child and a second alternative stating that the event occurred because of the behavior of someone else in the child's immediate environment. The child's I+ score is the total number of positive achievement experiences (successes) for which the child assumes credit. The I- score is the total of all negative events (failures) for which the child assumes blame. The total I (internal or self-responsibility score) is the sum of all I+ and all I- scores. Thus the scale is scored in the internal direction.

The standardization sample consisted of 923 elementary and high school students drawn from five different schools so that it would be representative of children in diverse kinds of communities. Sub-samples in various grades were: third grade, N = 103; fifth grade, N = 99; sixth grade, N = 166; eighth grade, N = 161; tenth grade, N = 183; twelfth grade, N = 109.

Reliability. Test-retest correlations over two months were .69 for total I, .66 for I+ and .74 for I- for children in grades three, four, and five. These correlations were all significant at the .001 level.

The sixth-, eighth-, tenth-, and twelfth-grade children were not retested. However, 70 ninth-grade students from one of the schools were given the test after a two month interval. The reliability coefficients for these children were .65 for total I, .47 for I+ and .69 for I-. Again, these correlations were all significant at the .001 level.

Split-half reliabilities were computed separately for the two subscales. Thus, responses to the eight even-numbered items of the I+ subscale were correlated with the nine odd-numbered items of that subscale and the nine even-numbered I- items were correlated with the eight odd-numbered I- items. For a random sample of 130 of the younger children, the correlation is .54 for I+ and .57 for I- after correction with the Spearman-Brown Prophecy Formula. For a similar random sample of older children, the correlations are .60 for both the I+ and I- subscales.

Validity. Evidence of the concurrent validity of the IAR was obtained when the IAR and the Cromwell Locus of Control Scale, developed by Cromwell in 1963, were administered to a group of 51 eighth-grade students (Powell, 1971). The Pearson Product Moment correlations between the CLOC and the IAR (Total I and I+) were statistically significant. The correlation between the CLOC and IAR+ was .340 ($p < .05$, $df = 49$) and the correlation between CLOC and IAR Total I was .314 ($p < .05$, $df = 49$).

There are evidences of the concurrent validity of the IAR reported in the literature. Gunars Reimanis (1973) administered three different locus of control instruments to 201 elementary school pupils in grades three through six. The instruments were the Battle and Rotter

Locus of Control Scale, developed in 1963, the Bialer Locus of Control Scale, developed in 1961, and the IAR. Pearson product-moment correlation coefficients were computed. The IAR Total scale had significant relationships ($p < .05$) with both the Battle scale for the sixth-grade girls and the Bialer scale for the third- and sixth-grade boys. The IAR+ scale had significant correlations with the Battle and Rotter scale for third-grade boys and sixth-grade girls, and the IAR- scale had significant correlations with the Bialer scale for sixth-grade boys. The two IAR subscales had significant correlations for fourth-grade girls and fifth- and sixth-grade boys.

A group of 36 tenth-grade students were administered two locus of control scales: the Locus of Control Inventory for Three Achievement Domains, developed by Bradley (1972), and the IAR. A multivariate analysis of covariance was carried out and high correlations were obtained between IAR scores and scores on the intellectual/academic situations subscale of the LOCITAD.

Evidence of the predictive validity of the IAR was obtained when IAR scores were correlated with two measures of academic achievement in the standardization sample. For the younger children these measures were the Iowa Test of Basic Skills and report card grade averages. Total I scores correlated positively and significantly with almost all achievement test measures (reading, math, and language subscores and total achievement test scores) and with report card grade averages for grades three, four, and five. For girls in grades three and four the correlations were in the .40's and .50's for the achievement measures and I+, indicating that the greater the young girl's sense of responsibility for her academic success, the more

successful she is likely to be in her school work. The I- scores related significantly to the academic measures for boys at grade five, with correlations ranging from .34 to .53. In grades six, eight, ten, and twelve, achievement test scores (California Achievement Tests) were only occasionally related significantly to IAR scores. However, significant relations in the .20's and .30's between total I and report card grades were again obtained in each of the upper grades. Thus the most consistent prediction of the IAR has been to report card grades with children who assume more responsibility for their academic successes and failures being more successful in their academic behavior.

Other studies, as discussed in Chapter II, have reported significant positive correlations between the IAR and various measures of academic achievement. These results have provided further support for the predictive validity of the IAR with the evidence indicating that children who have an internal locus of control orientation achieve higher school grades than do children with an external locus of control orientation.

Competition

The instrument used to measure students' perception of competition in the schools is adapted from the Competitive-Cooperative Attitudes Scale (CCAS) for use with eighth-grade students. There are two forms of the CCAS which were administered to the students. The first is the students' perception of competition as related to what I like to do best and the second is the students' perception of competition as related to school work.

The Competitive-Cooperative Attitudes Scale (CCAS) was developed by Martin and Larsen at Oregon State University in 1976. This instrument is a Likert-type attitude scale consisting of 28 items of which 20 are competitive items and 8 are cooperative items.

The item analysis study on the original CCAS was conducted at Oregon State University and included 98 students. For the reliability-validity study, 99 undergraduate students participated. Although college students were used in these studies, Martin, one of the test developers, stated that the instrument would be appropriate for use with an eighth-grade population.

The adapted CCAS consists of twenty-five items. Three items from the original CCAS were omitted as they were not applicable to eighth graders in an academic setting. Eighteen of the twenty-five items are competitively oriented and seven items are cooperatively oriented. (Cooperative items are numbers, 3, 5, 14, 19, 23, 24, and 25. The other items are competitive.) All twenty-five items were scored in the competitive direction and the scores were investigated to determine the relationship of the students' perception of competition to academic achievement and to locus of control.

The Likert-type response scale which was used is numbered one through five. The student indicated whether or not he agreed or disagreed with an item using the following alternatives:

If you agree strongly -----	Circle 1
If you agree in part -----	Circle 2
If you don't care -----	Circle 3
If you disagree in part -----	Circle 4
If you disagree strongly -----	Circle 5

A low score on the scale reflects a competitive orientation. Scoring

was reversed on the competitive items for the data analysis. Thus for this study, a high score reflected a competitive orientation. In the present study, the adapted CCAS was used as a measure of the students' perception of academic competition.

Reliability. Internal consistency data is reported for the CCAS. The split-half reliability coefficient is .70. When corrected for length using the Spearman-Brown Prophecy Formula, the coefficient is .82.

Validity. Evidence of concurrent validity for the CCAS has been reported (Martin and Larsen, 1976). It was hypothesized that persons scoring high in competitiveness would also possess high levels of Machiavellianism (the degree to which an individual uses other people for his own benefit). To achieve competitive goals and win, a highly competitive person would value winning more than being honest and open in interpersonal relationships and would, instead, see these relationships as a means with which to attain other goals. There was a correlation of .39 ($p \leq .01$, $n = 99$) between scores on the CCAS and the Mach IV scale developed in 1970 by Christie and Geis. It was also hypothesized that persons scoring high on competitiveness would also show high needs for approval. Individuals who are personally insecure with a low self concept tend to display aggressive and competitive behavior as they seek approval from others (Larsen, Martin, Ettinger, and Nelson, 1976). The Martin-Larsen Approval Motivation Scale which was developed by Larsen, Martin, and Ettinger in 1975 and is reported by its authors to be related significantly to self-esteem and aggression was administered to the sample population

as a measure of need for approval. There was a correlation of .29 ($p < .01$, $n = 99$) between scores on the CCAS and the Martin-Larsen Approval Motivation Scale.

Academic Achievement

The measure of academic achievement was obtained from the first semester grades obtained by the students in the basic academic courses of eighth grade in which all eighth-grade students in Perry, Oklahoma are enrolled. These academic courses were English, mathematics, science, and civics. Thus the first semester grades obtained in these four classes and the overall grade point average were used as the measure of academic achievement.

Procedure

Permission to conduct this study was obtained from the administration of the Perry, Oklahoma school system. Then letters were sent to the parents of the eighth graders to obtain permission for these students to participate in the study.

The eighth-grade science teachers were selected to administer the instruments in their eighth-grade science classes. Prior to the days on which the research was conducted the teachers were trained in the administration of the instruments, and they were instructed in the directions to give to the students.

The research for this study was conducted in the four eighth grade science classes on two school days four weeks apart. The Intellectual Achievement Responsibility Questionnaire and the Competitive-Cooperative Attitudes Scale as related to what I like to do

best was administered five weeks before the end of the semester. The CCAS as related to school work was administered four weeks later. The first teacher administered the instruments to one science class, and the second teacher administered the instruments to three science classes.

The teacher introduced the study to the students by saying that eighth-grade students are seldom asked how they feel about their school experiences. Today they are being given the opportunity to express how they feel. On the first day, the IAR Questionnaire was passed out to the students by the teacher, and the students were asked not to begin until everyone had a copy and the directions were discussed. The teacher read the instructions to the students as they followed along on their own copies. As the students completed the IAR, the teacher took up the questionnaires.

When all students had finished the IAR, copies of the CCAS as related to what I like to do best were given to them. Then the teacher read the instructions to the CCAS as the students followed along on their own copies. The students answered the questions on the scale, and the teacher took up the students' copies as they were completed. The same procedure for administration was followed on the second day when the CCAS as related to school work was completed by the students.

The measure of academic achievement, semester grades in four academic subjects and grade point average, was obtained after the completion of the first semester. The academic subjects were English, mathematics, science, and civics. These are subjects in which all eighth-grade students are enrolled.

Analysis of the Data

To test the significance of the relationship of students' perception of competition in the schools and students' locus of control orientation to academic achievement, a multiple regression equation was used with semi-partial correlations. Academic achievement was the dependent variable and students' perception of competition and students' locus of control orientation were the independent variables. A third independent variable was the sex of the eighth-grade students.

The reliability of the instruments was tested using Cronbach's alpha. Descriptive statistics were presented on all variables. The item data was analyzed. It was also shown how the three independent variables affected the dependent variable.

CHAPTER IV

ANALYSIS OF THE DATA

Introduction

The present chapter describes the statistical treatment of the data and presents an analysis of the results. The hypothesis stated in Chapter I are tested under the following headings: (1) relationship between students' perception of competition in the schools and students' locus of control orientation, (2) relationship between students' perception of competition in the schools and academic achievement, (3) relationship between academic achievement and students' locus of control orientation, and (4) relationship between the perception of competition in the schools and sex of students.

The results of this experiment were analyzed using obtained Pearson Product-Moment correlation coefficients for each pair of variables. The correlation coefficients were tested for significance using a t test: $(t = \frac{r}{\sqrt{1-r^2}} \cdot \sqrt{N-2})$.

In this chapter competition (school) will refer to student's perception of competition as related to schoolwork and competition (self) will refer to student's perception of competition as related to what I like to do best. Positive locus of control refers to all positive achievement experiences (successes) for which the student assumes credit and negative locus of control refers to all negative events (failures) for which the child assumes blame. Total locus of

control refers to the sum of the positive and negative scores. The scores are in the internal direction.

Relationship Between Student's Perception
of Competition in the Schools and
Students' Locus of Control
Orientations

Null Hypothesis I: There is no relationship between students' perception of competition in the schools and students' locus of control orientations.

Table I shows the number of eighth-grade students, the obtained Pearson Product-Moment correlation coefficients (r), the t values, and the levels of significance for the data regarding the students' perception of competition in the schools and students' locus of control orientation.

The obtained correlation coefficient ($r = -0.308$) between perception of competition (school) and negative locus of control was significant at .01 level of confidence ($t = -3.14$, $df = 94$). Thus Hypothesis I was rejected for students' perception of competition as related to school work and negative locus of control. The alternative hypothesis that was accepted is that there is a negative relationship between students' perception of competition in the schools (school work) and students' locus of control orientation. Therefore, based on the negative correlation, if a student has a low score for perception of competition (school), he has a higher degree of internality for negative locus of control orientation, and if his perception of competition (school) is high he will have a lower degree of internality

TABLE I
 PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS
 BETWEEN STUDENTS' PERCEPTION OF COMPETITION
 IN THE SCHOOLS AND STUDENTS' LOCUS
 OF CONTROL ORIENTATION

Category	N	r	t	p
Competition (School Work)				
Total Locus of Control	96	-0.198	-1.959	n.s.
Positive Locus of Control	96	0.003	0.029	n.s.
Negative Locus of Control	96	-0.308	-3.140	.01
Competition (What I like to do best)				
Total Locus of Control	96	-0.264	-2.655	.01
Positive Locus of Control	96	-0.126	-1.232	n.s.
Negative Locus of Control	96	-0.297	-3.015	.01

for negative locus of control orientation. The obtained correlation coefficients for competition (self) and total locus of control ($r = -0.264$, $t = -2.655$, $df = 94$) and for competition (self) and negative locus of control ($r = -0.297$, $t = -3.015$, $df = 94$) were also significant at the .01 level of confidence. Hypothesis I was rejected for students' perception of competition as related to what I like to do best (self) and total locus of control. It was also rejected for

students' perception of competition as related to what I like to do best (self) and negative locus of control. The alternative hypothesis that was accepted is that there is a negative relationship between students' perception of competition in the schools (self) and total locus of control and that there is a negative relationship between students' perception of competition in the schools (self) and negative locus of control. Thus a lower score for perception of competition (self) is associated with a higher degree of internality for locus of control orientation (total and negative). Also a high perception of competition (self) score is associated with a lower degree of internality for locus of control orientation (total and negative).

The obtained correlation of coefficients for competition (school) and total locus of control ($r = -0.198$, $t = -1.959$, $df = 94$), for competition (school) and positive locus of control ($r = 0.003$, $t = 0.029$, $df = 94$), and for competition (self) and positive locus of control ($r = -0.126$, $t = 1.232$, $df = 94$) were not significant at the .05 level of confidence. Hypothesis I was not rejected for any of these three pairs of variables.

Relationship Between Students' Perception of Competition in the Schools and Academic Achievement

Null Hypothesis II: There is no relationship between the students' perception of competition in the schools and academic achievement.

The obtained correlation coefficient ($r = -0.363$) between perception of competition (school) and grade point average was significant at the .001 level of confidence ($t = -3.776$, $df = 94$) (Table II). (For

computer purposes in this study $A = 4$, $B = 3$, $C = 2$, $D = 1$, and $F = 0$. The grade point average was obtained by summing the semester grades in four courses -- English, math, science, civics -- and dividing by four.) The obtained correlation coefficient ($r = -0.429$) between perception of competition (school) and English grades was significant at the .001 level of confidence ($t = -4.606$, $df = 94$). Also significant at the .001 level of confidence was the obtained correlation coefficient ($r = -0.335$) between perception of competition (school) and math grades ($t = -3.448$, $df = 94$). The obtained correlation coefficient ($r = -0.254$) between perception of competition (school) and science grade was significant at the .05 level of confidence ($t = -2.547$, $df = 94$). The obtained correlation coefficient ($r = -0.270$) between perception of competition (school) and civics grade was significant at the .01 level of confidence ($t = -2.719$, $df = 94$). Thus Hypothesis II was rejected for students' perception of competition (school) and the five measures of academic achievement. The alternative hypothesis that was accepted states that there is a negative relationship between students' perception of competition in the schools (school work) and academic achievement. Thus the higher the perception of academic competition that a student has about school work, the lower his academic grades will be, and the lower his perception of competition (school work), the higher his grades are.

The obtained correlation coefficient ($r = -0.211$) for students' perception of competition (self) and English grades was significant at the .05 level of confidence ($t = -2.094$, $df = 94$). Hypothesis II was rejected for students' perception of competition (self) and English grades. The alternative hypothesis that was accepted states

TABLE II
 PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS
 BETWEEN STUDENTS' PERCEPTION OF COMPETITION
 IN THE SCHOOLS AND STUDENTS'
 ACADEMIC ACHIEVEMENT

Category	N	r	t	p
Competition (School Work)				
Grade Point Average	96	-0.363	-3.776	.001
English	96	-0.429	-4.606	.001
Math	96	-0.335	-3.448	.001
Science	96	-0.254	-2.547	.05
Civics	96	-0.270	-2.719	.01
Competition (What I like to do best)				
Grade Point Average	96	-0.125	-1.222	n.s.
English	96	-0.211	-2.094	.05
Math	96	-0.046	-0.446	n.s.
Science	96	-0.098	-0.955	n.s.
Civics	96	-0.087	-0.846	n.s.

that there is a negative relationship between student's perception of competition (self) and English grades. Therefore, the higher a student's grade in English, the lower will be his perception of competition regarding self. Also, the lower the student's English grades, the higher his perception of competition regarding self will be. The obtained correlation coefficients for students' perception

of competition (self) and four measures of academic achievement -- grade point average ($r = -0.125$, $t = -1.222$, $df = 94$), math ($r = -0.046$, $t = -0.446$, $df = 94$), science ($r = -0.098$, $t = -0.955$, $df = 94$), and civics ($r = -0.087$, $t = -0.846$, $df = 94$) -- were not significant at the .05 level of confidence. Therefore, Hypothesis II was accepted for students' perception of competition (self) and the academic achievement measures of grade point average, math, science, and civics.

Relationship Between Academic Achievement and Students' Locus of Control Orientations

Null Hypothesis III: There is no relationship between academic achievement and students' locus of control orientations.

The obtained correlation coefficients for total locus of control orientation, positive locus of control orientation, and negative locus of control orientation and each of the five measures of academic achievement were not significant (Table III). Thus Hypothesis III was accepted for academic achievement and students' locus of control orientation.

Relationship Between the Perception of Competition in the Schools and Sex of Students

Null Hypothesis IV: There is no relationship between the perception of competition in the schools and the sex of the students.

The obtained correlation coefficient ($r = -0.333$) for students' perception of competition (school) and sex of student was significant

TABLE III
 PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS
 BETWEEN STUDENTS' ACADEMIC ACHIEVEMENT
 AND STUDENTS' LOCUS OF
 CONTROL ORIENTATION

Category	N	r	t	p
Total Locus of Control				
Grade Point Average	96	0.044	0.427	n.s.
English	96	0.028	0.027	n.s.
Math	96	0.076	0.739	n.s.
Science	96	0.059	0.573	n.s.
Civics	96	-0.003	-0.029	n.s.
Positive Locus of Control				
Grade Point Average	96	0.056	0.544	n.s.
English	96	0.041	0.398	n.s.
Math	96	0.005	0.048	n.s.
Science	96	0.122	1.192	n.s.
Civics	96	0.033	0.320	n.s.
Negative Locus of Control				
Grade Point Average	96	0.020	0.194	n.s.
English	96	0.007	0.068	n.s.
Math	96	0.112	1.094	n.s.
Science	96	-0.014	-0.136	n.s.
Civics	96	-0.033	-0.320	n.s.

at the .001 level of confidence ($t = -3.42$, $df = 94$) (Table IV). Thus Hypothesis IV was rejected for student's perception of competition in the schools as related to school work and sex of students. The alternative hypothesis was accepted, and it states that there is a relationship between the perception of competition in the schools (school work) and sex of students. Thus the male students had a higher perception of academic competition in the schools as related to school work than the females.

TABLE IV
PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS
BETWEEN STUDENTS' PERCEPTION OF COMPETITION
IN THE SCHOOLS AND SEX OF STUDENT

Category	N	r	t	p
Competition (School Work)				
Sex	96	-0.333	-3.42	.001
Competition (What I like to do best)				
Sex	96	-0.260	-2.612	.05

The obtained correlation coefficient ($r = -0.260$) for students' perception of competition (self) and sex of student was significant at the .05 confidence level ($t = -2.612$, $df = 94$) (Table IV). Hypothesis IV was thus rejected for students' perception of competition in

the schools as related to what I like to do best and sex of students. The alternative hypothesis that was accepted states that there is a relationship between the perception of academic competition in the schools (self) and sex of students. Thus the males had a higher perception of competition in the schools related to self than the females. The analysis indicated that for each of the two types of perception of competition that were measured, boys received higher scores in the competitive direction.

Analysis of Multiple Regression Equations

Stepwise multiple regression procedures were used with the five measures of academic achievement as the dependent variables. Independent variables were sex of student, total locus of control (internal score), perception of competition (school), and perception of competition (self). In each multiple regression equation, sex was the first independent variable entered into the equation. Total locus of control was the second independent variable entered in the equations. Sex and total locus of control were the control variables in each of the five multiple regression equations. In the equations with sex and total locus of control entered as the independent control variables, the multiple R for sex and total locus of control was significant at the .05 level for the equations with math grades ($R = 0.302$, $F = 4.67$, $df = 2/93$) and grade point average ($R = 0.292$, $F = 4.34$, $df = 2/93$) as the dependent variables. The multiple R for sex and total locus of control was significant at the .01 level for the equation with English grades ($R = 0.334$, $F = 5.87$, $df = 2/93$) as the dependent variable. The multiple R for sex and total locus of control was not

significant in the multiple regression equations with science grades and civics grades as the dependent variables (Table V).

In the third step of the multiple regression equations with English grades, math grades, science grades, civics grades, and grade point average as the dependent variables, the independent variable, competition (school), was chosen by the program to enter the five equations. Semi-partial correlations were obtained for this independent variable. In the multiple regression equation with math grades as a dependent variable, the semi-partial correlation ($r = -0.257$, $F = 6.51$, $df = 1/92$) was significant as the .05 level of confidence. When science grades were the dependent variable, the semi-partial correlation ($r = -0.205$, $F = 4.045$, $df = 1/92$) was significant at the .05 level of confidence. The semi-partial correlation with civics grades ($r = -0.218$, $F = 4.593$, $df = 1/92$) as the dependent variable was significant at the .05 level of confidence. In the multiple regression equation with English grades as the dependent variable, the semi-partial correlation ($r = -0.359$, $F = 13.80$, $df = 1/92$) was significant at the .01 level of confidence. In the multiple regression equation with grade point average as the dependent variable, the semi-partial correlation ($r = -0.300$, $F = 8.804$, $df = 1/92$) was significant at the .01 level of confidence (Table VI).

In step four the final independent variable, competition (self), entered the five multiple regression equations. The obtained semi-partial correlation for the multiple regression equation with math grades as the dependent variable was significant at the .05 level of confidence ($r = 0.245$, $F = 5.80$, $df = 1.91$). The obtained semi-partial correlations for the multiple regression equations using the

TABLE V
STEP I AND II: MULTIPLE REGRESSION EQUATIONS

	df	SS	MS	F
English				
Total		143.49		
Regression	2	15.98	7.99	5.87**
Control Variables (Sex and Total Locus of Control)				
Residual	93	127.51	1.36	
Math				
Total		129.96		
Regression	2	11.85	5.93	4.67*
Control Variables (Sex and Total Locus of Control)				
Residual	93	118.11	1.27	
Science				
Total		125.16		
Regression	2	4.22	2.11	1.62
Control Variables (Sex and Total Locus of Control)				
Residual	93	120.94	1.30	
Civics				
Total		145.63		
Regression	2	7.90	3.95	2.67
Control Variables (Sex and Total Locus of Control)				
Residual	93	137.73	1.48	
Grade Point Average				
Total		107.85		
Regression	2	9.21	4.61	4.34*
Control Variables (Sex and Total Locus of Control)				
Residual	93	98.64	1.06	

Significance

*.05

** .01

TABLE VI
STEP III: MULTIPLE REGRESSION EQUATIONS

	df	SS	Partial	F
English				
Total	95	143.49		
Regression				
Control-Sex,				
Total Locus of Control	2	15.98		
Competition-School	1	16.54	-.359	13.80**
Residual	92	110.97		
Math				
Total	95	129.96		
Regression				
Control-Sex,				
Total Locus of Control	2	11.85		
Competition-School	1	7.80	-.257	6.51*
Residual	92	110.31		
Science				
Total	95	125.16		
Regression				
Control-Sex,				
Total Locus of Control	2	4.22		
Competition-School	1	5.09	-.205	4.045*
Residual	92	115.85		
Civics				
Total	95	145.63		
Regression				
Control-Sex,				
Total Locus of Control	2	7.90		
Competition-School	1	6.55	-.218	4.593*
Residual	92	131.18		
Grade Point Average				
Total	95	107.85		
Regression				
Control-Sex,				
Total Locus of Control	2	9.21		
Competition-School	1	8.62	-.300	8.804**
Residual	92	90.02		

Significance

*.05

** .01

other four academic achievement measures as dependent variables were not significant (Table VII).

Reliability of Instruments

The reliability of the instruments was estimated using Cronbach's alpha. The instrument used to measure students' perception of competition as related to school work had a reliability coefficient 0.728. The reliability coefficient of the instrument that measured students' perception of competition as related to what I like to do best was 0.686. The reliability of the IAR, used to measure students' locus of control orientation, was 0.642.

Item Analysis and Descriptive Statistics

The response position for each item on each of the three questionnaires is presented in Tables XIII, IX, and X, Appendix F. Descriptive statistics for each item are also presented on the tables. This includes the mean, the median, the mode, and the standard deviation for each item.

More students selected the internal response than the external response on twenty-nine of the items on the IAR. On five items (#7, #8, #10, #27, #32) more students selected the external response than the internal response.

The response positions and the descriptive statistics for each item on the two competition questionnaires are presented in Tables IX and X in Appendix F. A response with a larger number indicates a higher competitive orientation.

Figures 1, 2, 3, 4 and 5 present the frequency of scores on the

TABLE VII
STEP IV: MULTIPLE REGRESSION EQUATIONS

	df	SS	Partial	F
English				
Total	95	143.49		
Regression				
Controls-Sex,				
Total Locus of Control,				
Competition-School	3	32.52		
Competition-Self	1	0.80	0.085	0.658
Residual	91	110.17		
Math				
Total	95	129.96		
Regression				
Controls-Sex,				
Total Locus of Control,				
Competition-School	3	19.65		
Competition-Self	1	6.61	0.245	5.80*
Residual	91	103.70		
Science				
Total	95	125.16		
Regression				
Controls-Sex,				
Total Locus of Control,				
Competition-School	3	9.31		
Competition-Self	1	0.91	0.088	0.72
Residual	91	114.94		
Civics				
Total	95	145.63		
Regression				
Controls-Sex,				
Total Locus of Control,				
Competition-School	3	14.45		
Competition-Self	1	1.59	0.110	1.12
Residual	91	129.59		
Grade Point Average				
Total	95	107.85		
Regression				
Controls-Sex,				
Total Locus of Control				
Competition-School	3	17.83		
Competition-Self	1	2.01	0.150	2.08
Residual	91	88.01		

Significance
*.05

three questionnaires. On the IAR, a higher score represents a more internal locus of control orientation. A higher score on each of the two competition questionnaires represents a more competitive orientation.

Table XI in Appendix F is an ANOVA Summary Table for each academic achievement measure for males and females. The level of significance for the difference between the grades of the males and females is shown on the table.

Table XII in Appendix F presents the means and standard deviations for the academic grades for females, for males, and for the entire population of eighth-grade students. A higher mean indicates a higher grade. For each of the five academic achievement measures, the females achieved higher grades than the males did.

CHAPTER V

DISCUSSION

Introduction

The primary purpose of this study was to provide information regarding how eighth-grade students of different achievement levels and different locus of control orientations perceive academic competition. The relationship of these three variables to each other was studied for both male and female students. The subjects for this study were ninety-six eighth-grade students. There were fifty-one male and forty-five female students in the sample. Each student was administered the Intellectual Achievement Responsibility (IAR) Questionnaire and the Competitive-Cooperative Attitudes Scale related to what I like to do best during his science class. Four weeks later each student was administered the Competitive-Cooperative Attitudes Scale related to school work.

To describe the relationship between each pair of variables, Pearson Product-Moment correlation coefficients were calculated. Then a t test was applied to determine if there is a significant difference. The following discussion of the findings of this study will begin with the first hypothesis and proceed through the remaining hypotheses.

Discussion of Conclusions

The first hypothesis stated that there was no relationship between students' perception of competition in the schools and students' locus of control orientations. This study found relationships between three pairs of these variables. The results of this study indicate that a student with a lower perception of competition (for both school work and self), will have a higher negative locus of control orientation (more internal) than will a student with a higher perception of competition about school work and about self. Thus it seems that a student who has a lower perception of competition about school and self is more apt to feel that he is in control of the reinforcements he receives for failures in academic situations, while a student with a higher perception of competition about school and about self will be more apt to feel that the reinforcements he receives for failures in academic situations can be attributed to others. These same relationships were also found for a students' perception of competition in regard to self and total locus of control orientation. Thus it seems, for this study, that the higher the perception of competition that a student has about self, the lower will be his total locus of control orientation (less internal). That is, the student will be less likely to attribute responsibility for his reinforcements in academic situations to himself when his perception of competition in regard to self is high. It was also seen that a student with a lower perception of competition about self had a higher total locus of control orientation (more internal). In other words, the student with a lower perception of competition regarding self is more likely to attribute responsibility for his

reinforcements in academic situations to himself rather than to others.

The correlation between negative locus of control and perception of competition (self) was strong enough to cause a significant relationship to exist between total locus of control and perception of competition (self). Although there was a significant relationship between negative locus of control and perception of competition (school), this correlation was not strong enough to have a significant relationship between total locus of control and perception of competition (school).

This study showed no significant relationships between students' perception of competition (school) and either total locus of control or positive locus of control. There was also no significant relationship between students' perception of competition (self) and positive locus of control.

Previous research has not dealt directly with these relationships between students' perception of competition and students' locus of control orientations. Johnson, Johnson, and Bryant (1973) stated that externalizers (less internal) prefer interpersonal support in their environment and thus may adapt and achieve at a higher level in a cooperative classroom better than they would in a competitive classroom. Internalizing pupils seem to be able to adapt to either a cooperative or a competitive classroom. They appear to have confidence in their ability to achieve and are not threatened by working alone. In this study it was found that students with a lower perception of competition for both school and self had a more internal negative locus of control orientation and a more internal total locus of control (self). Thus these students seem to more readily accept

responsibility for failures in academic situations and for reinforcements regarding self in academic situations. The more internal pupil works well in different kinds of classrooms and works well alone or in groups. Thus he may not feel a need to compete with others, but accepts the responsibility for his actions. The less internal pupil may feel a greater need to compete with others and when he fails, will blame others for this.

The second hypothesis stated that there was no relationship between the students' perception of competition in the schools and academic achievement. This study found significant and negative relationships between students' perception of competition in regard to school and grade point average, English grades, math grades, science grades, and civics grades. A student with a higher perception of competition regarding schoolwork achieved lower grades in academic courses than did a student with a lower perception of competition (school). There was also a significant and negative relationship found between students' perception of competition in regard to self and English grades. Thus it was seen in this study that a student with a higher perception of competition (self) achieved lower grades in English than did a student with a lower perception of competition (self). No significant relationships were found for students' perception of competition (self) and the academic achievement measures of grade point average, math grades, science grades, and civics grades.

The third hypothesis stated that there was no relationship between academic achievement and students' locus of control orientations. There were no significant relationships found between any of the five academic measures and total locus of control, positive locus of control,

or negative locus of control. The findings of this study regarding the relationship of students' locus of control orientation and academic achievement are not in agreement with the results of much of the previous research which is reported in the literature. Earlier studies have reported that usually internals achieve academically at higher levels than externals do.

There is a possibility that students in Perry, Oklahoma are reaching the point that they are unsure where their reinforcements come from or they no longer care where their reinforcements come from. It was stated by Lee (1967):

Students who have spent years doing what someone else has required of them, even though they viewed such assignments with little concern and less purpose, have built up a resistance to 'school' tasks. They may do the task -- even do them rather well -- and yet not throw themselves into the work as learners (p. 78).

Perhaps this attitude on the part of the student has pervaded other areas, and the students do their school work with little concern as to whether they receive their reinforcements from themselves or from others.

Studies have shown that no two people seem able to interpret a set of grades or even a single grade in the same fashion, and that different persons called upon to give marks to students under standardized conditions tend to vary widely in their judgments (Bebell, 1967). In this day of grade inflation are grades true reinforcers? Can anyone really be sure of what an "A" or a "C" really means (Kirschenbaum, Simon, and Napier, 1971)? If you don't put out much effort to obtain a grade, are grades a source of reinforcement?

Perry students do well academically in school subjects (Table XII) as indicated by the grade point averages for semester grades in academic

courses of English, math, science, and civics. This is a subjective measure of academic achievement, yet this author has noted that on standardized achievement tests, students in the Perry school system score at or slightly above national norms. Yet these students, even though they do achieve well academically, may perform their "school" tasks merely to satisfy someone else's requirements or to earn a material reward. There may be no personal sense of achievement or reinforcement for success in an academic situation or any acceptance of responsibility for failure. People do not behave in terms of the forces actually exerted upon them; rather, they tend to behave in terms of the way those forces seem to them (Combs, 1959). Thus students of today may have different reactions to school tasks than the students of yesterday, today's adults. Whether we like it or not the American adolescent is not the same as his counterpart of fifteen or twenty years ago. His values, attitudes, hopes, and ambitions have changed, and these changes are reflected in school behavior and performance (Rogers and Baron, 1976).

The fourth hypothesis stated that there was no relationship between the perception of competition in the schools and the sex of the students. This hypothesis was rejected for students' perception of competition as related to school work and sex of student. The alternative hypothesis which was accepted indicated that males have a higher perception of competition as related to school work than females.

The fourth hypothesis was also rejected for students' perception of competition as related to what I like to do best (self) and sex of student. The alternative hypothesis was accepted, and it indicated that males have a higher perception of competition as related to

self than females do.

There has been very little research involving sex and academic competition in the schools, and the results of the few available studies are in disagreement. It does seem that what sex differences there are become greater as the individual grows older and becomes more aware of society's expectations that males will be more competitive than females. Jaccoby and Jacklin (1974) report that parents and others praise boys for "boylike" behavior. The competitive skills of a young man in athletics are praised. This type of reinforcement may carry over the spirit of competition into the classroom. There is a possibility that the community in which this study was conducted reinforces competitive behavior in males. These differences appeared as early as second grade in one study (Senior and Brophy, 1973). These few studies have found males to become more competitive than females as they grow older in competitively structured situations.

Thus this study provides some evidence that males have a greater perception of academic competition than females do. Therefore, males may not only be more competitive in situations that are competitively structured, but they may also have a higher perception of academic competition.

Discussion: Multiple Regression

There were five multiple regression equations obtained in this study with the five measures of academic achievement as the dependent variables. The independent variables, sex of students and total locus of control orientation, were the controls. These two variables were entered into the equations and the resulting F's were tested for

significance. It was found that the variables sex of students and total locus of control together do contribute significantly to the students' English grades, math grades, and grade point average. This indicates that the combination of the variables, sex of student and students' total locus of control orientation score, will be significant in estimating the variance of the dependent variables, English grades and math grades, and for estimating the variance of the dependent variable, total grade point average. Sex and total locus of control do not contribute significantly to the grades that a student receives in science or civics. In this study it was found that females achieved higher academic grades than males in all five measures of academic achievement. Although females did achieve higher grades in science and civics than males, these differences were not as great as for the other academic achievement area.

In the third multiple regression equation the program selected students' perception of competition as related to school work as the next independent variable to enter the equation. The variables sex and total locus of control were controlled, and semi-partial correlations were obtained for students' perception of competition as related to school work in each of the five multiple regression equations. Each of the semi-partial correlations was significant. Thus the independent variable, the perception of competition that a student holds in relation to school work, makes a significant contribution to the variance of the dependent variable, grades that a student achieves in academic courses, after controlling for sex and total locus of control. Students with a higher perception of competition do not achieve as well academically as students with a lower perception of competition. This

seems to hold true for all four courses and for the grade point average.

In the fourth multiple regression equation the final independent variable, students' perception of competition as related to what I like to do best (self), was entered into the equation by the program. In these equations sex, total locus of control, and competition (school) were the control variables. Semi-partial correlations were obtained for competition (self). The semi-partial correlation for competition (self) with sex, total locus of control, and competition (school work) controlled, was significant in the multiple regression equation with math as the dependent variable. The semi-partial correlations in the other four multiple regression equations were not significant. This result indicates that the perception of competition that a student holds in relation to self after controlling for sex, total locus of control, and competition (school work) makes a significant contribution to the variance of the dependent variable, academic grades in math, but it does not contribute significantly to the variance of the academic grades in the other school courses or to the grade point average.

Possibly math is an academic course in which students can feel a higher sense of competition with themselves than they can in other academic courses. It may be that the mathematics class is so structured that students compete with themselves more than they do in their other courses. It is also possible that in math class students are more aware of their successes and failures than in other courses and therefore have a higher perception of competition with themselves to do better the next time and to achieve a higher grade on the next assignment or test.

In Step III all the semi-partial correlations were significant and they were negative. These negative semi-partial correlations indicated that when sex and total locus of control are controlled, the higher the perception of competition that a student has in relation to school work the lower his grades are. The lower his perception of competition is in relation to school work, the higher his grades are. Yet in Step IV, all of the semi-partial correlations were positive although only the semi-partial correlation with math grades as the dependent variable was significant. These positive correlations indicate that the higher the perception of competition that a student has regarding self or what he likes to do best after controlling for sex, total locus of control, and competition (school work), the higher the student's math grades will be. Also if the student has a lower perception of competition regarding self his math grades are lower. These findings lend support to the idea that our schools are at present competitively structured and students perceive their school work as being competitive.

Implications

An implication of this study is that eighth-grade students who have a high perception of competition do not accept responsibility for their failures in academic situations, yet those students with a lower perception of competition do accept responsibility for their failures. Students with a lower perception of competition may work alone more than with others, and since they function well in a variety of classrooms, they do not feel or perceive them as competitive. Highly competitive students are not accepting responsibility for their failures in

school related situations or in situations related to self, and are possibly blaming others -- teachers, the school, their parents, their peers, the system. In competitive situations as related to self, these students with a high perception of competition may not be accepting responsibility for their successes and failures, but attributing this to others. It is the students who have a lower perception of competition in relation to self who are likely to be more accepting of the responsibility for their successes or failures in academic situations. If the schools want students to take responsibility for themselves, it may be necessary to find ways of directing highly competitive students toward this end. According to Combs (1959), behavior is the product of the perceptions existing for the individual at the moment of his behavior.

Another implication of this study is that students who view school work as competitive are not achieving as well in all academic areas measured as students who do not perceive school work as so competitive. The higher the student's perception of competition as related to self the lower his English grades were and the lower the perception of competition that the student has in relation to self, the higher his English grades. Future research may provide an indication as to why these relationships were found to exist.

A third implication suggests the possibility that students are becoming indifferent to the sources of their reinforcements or no longer care. They may do well academically and achieve high grades, but grades may not relate directly to their attitudes. If this should be the case, schools should consider how they are affecting their students in all aspects of growth and development. The question of the

importance and purpose of grades again looms as a problem for educators to deal with. Course grades must be replaced with something more informative, more diagnostic, and more harmonious with students' own motivations (Bebell, 1967). Too often motivation has been based on fear -- of failure, of humiliation, of loss of privilege -- and as a result students may be reaching the point of resistance.

The results of this research found that males have a higher perception of academic competition in relation to both school work and self than females do. This result may be a function of our society and its expectations. Girls are not supposed to be competitive, so they may respond to a questionnaire with answers that they consider more socially acceptable. Males were found to have a higher perception of academic competition, yet it is the females who are achieving higher grades in their academic courses (Table XII). Thus a fourth implication is that males have a higher perception of academic competition, yet they may not be competing with the females to achieve higher grades in their academic courses. This result about perception of competition may be another indication of differences between the two sexes. Grades are probably a more subjective measure of academic achievement and may even be a function of discipline, or such behaviors as lack of interest, inattention, or absenteeism (Bebell, 1967; and Kirschenbaum, Simon, and Napier, 1971).

The combination of the variables, sex of students and total locus of control orientation of students, contribute significantly to students' academic grades in English and in math and toward the students' grade point average. When these two variables were controlled, it was found that a students' perception of academic competition as related to

school work does contribute significantly to his academic achievement. Students with a higher perception of competition do not achieve as well academically as those with a lower perception of competition. Thus the implication is, the perception of academic competition that a student has about school work will influence the grades that he receives. When attempting to explain how humans learn, one must consider not only the learner's motivation, and values, but also the uniqueness of his perceptions (Clark and Beatty, 1967).

The sex of the student, the total locus of control of the student, and the perception of competition that a student has in relation to school work were controlled. It was then found that the perception of competition that a student has in relation to self contributes to the grades a student receives in his math class. Students with a higher perception of competition achieved higher grades in math than students who had a lower perception of competition. The implication is that the student's perception of competition about self will influence the grade he receives in math.

Recommendations for Future Research

The results of this study suggest the need for further research in several related areas. It was seen that there are sex differences in a students' perception of academic competition. This study should be replicated with a students' aptitude controlled. Then the students' perception of academic competition should be investigated to determine if these sex differences still exist. The question might be asked if students of higher aptitude are more competitive regardless of their sex and regardless of the grades that they receive in academic classes.

Another question that might be asked concerns whether or not students of lower ability compete with students of higher ability for grades in academic classes.

Future studies should also control for other variables in the school setting such as teacher variables, classroom structure variables, and peer pressure variables. Then after these variables are controlled, the perception that a student has about academic competition can be investigated to determine if it makes a significant contribution to the academic grades a student achieves.

Different school subject areas can also be investigated to determine if students perceive one subject to be more competitive than another. If there are differences, are they a function of the nature of the subject itself or of the teacher or of the classroom setting.

This study indicates that a student's perception of academic competition does influence the grades that he obtains. The student's perception of competition will also influence how responsible he is for his reinforcements in academic situations. School personnel need to consider the structure of the school/class and the individual student in planning and implementing educational interventions. Each student may not achieve equally well in an all competitive or in an all cooperative educational setting. The individual student must be considered. Future research should be conducted to determine how to structure the specific curriculum to meet the individual needs of each student efficiently and economically.

There should be future studies to determine if there is a developmental trend in the perception of academic competition that students have. Research should investigate whether or not male students always

have a higher perception of competition than females or do both sexes have similar perception of academic competition which change at some point in time as females become more aware of societal expectations.

Future research should also investigate the locus of control orientation/academic achievement relationship in another population similar to the one used in this study. It should be determined if population differences such as type of community and location in the country make a difference in the locus of control/academic achievement relationship or was this result unique to the sample used in this study.

Another need for future research would be to replicate this study in a larger number of diverse communities to determine if the relationships that were found still exist. This research may verify the relationships between students' academic achievement, students' locus of control orientation, students' perception of academic competition, and sex of student.

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APPENDIXES

APPENDIX A

INSTRUCTIONS FOR ADMINISTRATION AND SCORING
INTELLECTUAL ACHIEVEMENT RESPONSIBILITY
QUESTIONNAIRE

Administration

For subjects sixth grade and older, the examiner reads the instructions to the subjects as they follow along on their own copies. These are headed General Instructions on the first page of the keyed questionnaire to follow. It is helpful for the examiner to add that some of the questions will seem to be worded in a rather "childish" manner and that this is because the same questionnaire is also used for younger children: they are worded simply so that younger children can understand them. It also helps to add that sometimes both answers will seem to describe what happens to them, or that neither one exactly describes it. In such a case, they should choose the one, and only one, answer which comes closest, for them.

Scoring

On the keyed questionnaire to follow, the internal response for each item is indicated with a circle around the A or B preceding the alternatives for that item. The scale is scored in the internal direction.

A+ or - precedes each item stem to denote positive outcome (+) or negative outcome (-) items.

The scale is regularly scored in the following ways:

I+ (Internality for positive events) is scored by summing the S's internal responses for items keyed with +.

I- (Internality for negative events) is scored by summing the S's internal responses for items keyed with -.

I total is the sum of the I+ and I- subscores.

APPENDIX B
INTELLECTUAL ACHIEVEMENT RESPONSIBILITY
QUESTIONNAIRE

GENERAL INSTRUCTIONS: This questionnaire describes a number of common experiences most of you have in your daily lives. These statements are presented one at a time, and following each are two possible answers. Read the description of the experience carefully, and then look at the two answers. Choose the one that most often describes what happens to you. Put a circle around the "A" or the "B" in front of that answer. Be sure to answer each question according to how you really feel.

If, at any time, you are uncertain about the meaning of a question, raise your hand and the teacher will come and explain it to you.

- +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?
- 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 forgot 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 feel 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?
- +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, it is 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?
- 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 more often
- (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 you 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?

APPENDIX C

INSTRUCTIONS FOR ADMINISTRATION AND SCORING
COMPETITIVE-COOPERATIVE ATTITUDES SCALE

Administration

After the CCAS is distributed to the students the teacher examiner will read aloud the directions that appear at the top of the scale. The CCAS form related to what I like to do best will be administered first and the form related to school work will be administered on a second day.

Scoring

Cooperative items on each form are numbers 3, 5, 14, 19, 23, 24, and 25. The other items are competitive. A high score on the scale reflects a cooperative orientation and a low score reflects a competitive orientation.

APPENDIX D

COMPETITIVE-COOPERATIVE ATTITUDES SCALE -

WHAT I LIKE TO DO BEST

AND SCHOOL WORK

Listed below are a number of statements. There are no right or wrong answers. You will probably agree with some items and disagree with others. Read each statement carefully. Then indicate whether you agree or disagree by circling the corresponding alternative to the left of each item. The number of alternatives and their meaning are:

If you agree strongly ----- Circle 1
 If you agree in part ----- Circle 2
 If you don't care ----- Circle 3
 If you disagree in part ----- Circle 4
 If you disagree strongly ----- Circle 5

If you find that the numbers to be used in answering do not adequately indicate your own opinion, use the one which is closest to the way you feel. Circle only one alternative for each item.

A D

- 1 2 3 4 5 1. People who try to stop me from doing as I please end up paying for it.
- 1 2 3 4 5 2. The best way to get someone to do something is to use force.
- 1 2 3 4 5 3. It is important to treat everyone with kindness.
- 1 2 3 4 5 4. It doesn't matter who I hurt if I succeed in what I do.
- 1 2 3 4 5 5. Getting along with your teammates is more important than winning.
- 1 2 3 4 5 6. I like to be the best at whatever I do, even if it means keeping someone else from doing well.
- 1 2 3 4 5 7. No one should be allowed to try a second time.
- 1 2 3 4 5 8. I play a game like my life depended on it.
- 1 2 3 4 5 9. I work harder than others at whatever I do.

- 1 2 3 4 5 10. If I succeed in whatever I'm doing, it doesn't matter if I break the rules.
- 1 2 3 4 5 11. Those who stick to the rules will never come out ahead.
- 1 2 3 4 5 12. People who don't succeed are just second rate.
- 1 2 3 4 5 13. I can go faster by myself at whatever I do than I can with a group.
- 1 2 3 4 5 14. I try to get along with others and treat them all the same.
- 1 2 3 4 5 15. My way of doing things is best.
- 1 2 3 4 5 16. I think it is best to do whatever I do alone without concern for others.
- 1 2 3 4 5 17. I will do anything to be the best at whatever I undertake.
- 1 2 3 4 5 18. Being successful at whatever I attempt is the most important part.
- 1 2 3 4 5 19. I like to help others with anything they are interested in.
- 1 2 3 4 5 20. If others lose or do poorly, I will be better off because of it.
- 1 2 3 4 5 21. The person who does well is admired.
- 1 2 3 4 5 22. The more times I succeed at what I'm doing the more powerful I feel.
- 1 2 3 4 5 23. I like to see everyone do well at whatever they attempt.
- 1 2 3 4 5 24. I try not to make fun of others.

1 2 3 4 5 25. I don't like to use pressure to get my way in any-
thing I do.

Listed below are a number of statements. There are no right or wrong answers. You will probably agree with some items and disagree with others. Read each statement carefully. Then indicate whether you agree or disagree by circling the corresponding alternative to the left of each item. The number of alternatives and their meaning are:

If you agree strongly ----- Circle 1
 If you agree in part ----- Circle 2
 If you don't care ----- Circle 3
 If you disagree in part ----- Circle 4
 If you disagree strongly ----- Circle 5

If you find that the numbers to be used in answering do not adequately indicate your own opinion, use the one which is closest to the way you feel. Circle only one alternative for each item.

A D

- 1 2 3 4 5 1. Students who keep me from doing well in school end up paying for it.
- 1 2 3 4 5 2. The best way to get students to do school work is to use force.
- 1 2 3 4 5 3. It is important to treat other students with kindness no matter how well or how poorly they do in school.
- 1 2 3 4 5 4. It doesn't matter who I hurt as long as I do well in school.
- 1 2 3 4 5 5. It is really more important that the class work together, than who in the class makes the best grades.
- 1 2 3 4 5 6. I want to be a success in school, even if I prevent other students from making high grades or receiving awards.

- 1 2 3 4 5 7. I do not think students should be given a second chance on their assignments or on tests.
- 1 2 3 4 5 8. I work hard at school as if my life depended on making good grades.
- 1 2 3 4 5 9. I work harder at school than others in my class do.
- 1 2 3 4 5 10. If I make good grades, it doesn't matter if I get them fairly or not.
- 1 2 3 4 5 11. Students who don't cheat on tests won't do as well as those who do cheat.
- 1 2 3 4 5 12. Students who fail in school work are also failures in every other way.
- 1 2 3 4 5 13. I like to be in a class that moves fast in school work better than in a class that goes slow.
- 1 2 3 4 5 14. Regardless of what grades a student makes, I feel that I can get along with everyone and treat them all the same.
- 1 2 3 4 5 15. My way of doing my school work is better than the way my classmates do theirs.
- 1 2 3 4 5 16. Every student should look out for his own grades without concern for those of another person.
- 1 2 3 4 5 17. I will do anything to make good grades in school.
- 1 2 3 4 5 18. Getting high grades is the most important part of a class.
- 1 2 3 4 5 19. I like to help others with their class assignments.
- 1 2 3 4 5 20. If other students in my class do badly on a test, I come out ahead.

- 1 2 3 4 5 21. The student who makes the highest grades in school is looked up to by his classmates.
- 1 2 3 4 5 22. The more times I make high grades, the more powerful I feel.
- 1 2 3 4 5 23. I like to see the whole class do well on a test.
- 1 2 3 4 5 24. I try not to make fun of students who don't do well in school.
- 1 2 3 4 5 25. I don't like to use pressure to get my way in school.

APPENDIX E

PARENTAL PERMISSION LETTER

Perry Public Schools

Erwin Abraham, Junior High School Principal

Perry, Oklahoma

Dear Parents of Eighth Grade Students:

Our school psychologist, who is working on her doctor's degree at Oklahoma State University, has obtained the superintendents and my permission to conduct important research in the eighth grade at Perry Junior High School. The research will consist of three short questionnaires about student's perceptions concerning academic competition and the sources of their rewards. The time required for the research will take two class periods approximately three weeks apart. The student's semester grades in academic subjects will also be used in the research study. The names of the students will remain confidential. Results of the study will be made available to the parents and staff of the school when the research has been completed.

Please indicate below if you will permit your child to participate in this study and return the letter to the principal's office.

_____ (may, may not)
(name of student)

participate in the research study.

(signature of parent)

Erwin B. Abraham
Principal

Frances Lowden
Researcher

APPENDIX F

TABLES

TABLE VIII
INTELLECTUAL ACHIEVEMENT RESPONSIBILITY
(IAR) QUESTIONNAIRE

Item	Response Position		Descriptive Statistics			
	A	B	\bar{X}	Med	Mode	S.D.
1	2	94	0.979	0.989	1.000	0.144
2	74	22	0.229	0.149	0.0	0.423
3	40	56	0.583	0.643	1.000	0.496
4	16	80	0.833	0.900	1.000	0.375
5	81	15	0.156	0.093	0.0	0.365
6	84	12	0.125	0.071	0.0	0.332
7	61	35	0.365	0.287	0.0	0.484
8	40	56	0.583	0.643	1.000	0.496
9	39	57	0.594	0.658	1.000	0.494
10	62	34	0.354	0.274	0.0	0.481
11	66	30	0.313	0.227	0.0	0.048
12	52	44	0.458	0.423	0.0	0.501
13	21	75	0.781	0.860	1.000	0.416
14	61	35	0.365	0.287	0.0	0.484
15	21	75	0.781	0.860	1.000	0.416
16	16	80	0.833	0.900	1.000	0.375
17	85	11	0.115	0.065	0.0	0.320
18	71	25	0.260	0.176	0.0	0.441
19	18	78	0.813	0.885	1.000	0.392
20	59	37	0.385	0.314	0.0	0.489
21	41	55	0.573	0.627	1.000	0.497
22	18	78	0.813	0.885	1.000	0.392
23	55	41	0.427	0.373	0.0	0.497
24	50	46	0.479	0.460	0.0	0.502
25	25	71	0.740	0.824	1.000	0.441
26	84	12	0.125	0.071	0.0	0.332
27	49	47	0.490	0.480	0.0	0.503
28	29	67	0.698	0.784	1.000	0.462
29	49	47	0.490	0.480	0.0	0.503
30	64	32	0.333	0.250	0.0	0.474
31	9	87	0.906	0.948	1.000	0.293
32	37	59	0.615	0.686	1.000	0.489
33	24	72	0.750	0.833	1.000	0.435
34	26	70	0.729	0.814	1.000	0.447

Note: The A response was scored as 0 and the B response was scored as 1.

TABLE IX
 COMPETITIVE-COOPERATIVE ATTITUDES SCALE
 WHAT I LIKE TO DO BEST

Item	Response Position					Descriptive Statistics			
	1	2	3	4	5	\bar{X}	Med	Mode	S.D.
1	6	25	14	22	29	3.448	3.636	5.000	0.136
2	3	11	2	22	58	4.260	4.672	5.000	1.145
3	63	22	2	6	3	1.583	1.262	1.000	0.104
4	2	3	5	23	63	4.479	4.738	5.000	0.894
5	66	17	5	5	3	1.563	1.227	1.000	1.024
6	9	20	5	27	35	3.615	4.019	5.000	1.402
7	3	9	5	13	66	4.354	4.773	5.000	1.133
8	13	21	20	20	22	3.177	3.200	5.000	1.369
9	9	42	11	27	7	2.802	2.429	2.000	1.166
10	2	5	6	20	63	4.427	4.738	5.000	0.971
11	4	7	6	22	57	4.260	4.658	5.000	1.126
12	4	9	8	18	57	4.198	4.658	5.000	1.184
13	19	17	7	39	14	3.125	3.628	4.000	1.401
14	45	33	7	10	1	1.844	1.591	1.000	1.019
15	5	17	17	30	27	3.594	3.800	4.000	1.219
16	5	8	10	21	52	4.115	4.577	5.000	1.204
17	14	20	12	34	16	3.188	3.559	4.000	1.340
18	35	22	11	14	14	2.479	2.091	1.000	1.472
19	30	39	11	14	2	2.156	1.962	2.000	1.089
20	2	12	10	27	45	4.052	4.389	5.000	1.127
21	37	28	8	17	6	2.240	1.893	1.000	1.304
22	42	28	10	14	2	2.021	1.714	1.000	1.151
23	56	21	9	6	4	1.760	1.357	1.000	1.122
24	43	36	8	7	2	1.844	1.639	1.000	0.998
25	38	25	9	18	6	2.260	1.900	1.000	1.324

TABLE X
 COMPETITIVE-COOPERATIVE ATTITUDES SCALE
 SCHOOL WORK

Item	Response Position					Descriptive Statistics			
	1	2	3	4	5	\bar{X}	Med	Mode	S.D.
1	7	24	8	27	30	3.510	3.833	5.000	1.353
2	9	16	1	22	48	3.875	4.500	5.000	1.423
3	77	10	3	3	3	1.385	1.123	1.000	0.933
4	2	6	6	14	68	4.458	4.794	5.000	1.004
5	29	30	12	13	12	2.469	2.133	2.000	1.376
6	6	15	11	23	41	3.813	4.196	5.000	1.308
7	10	16	9	27	34	3.615	3.981	5.000	1.387
8	12	37	11	22	14	2.885	2.473	2.000	1.305
9	7	31	7	29	22	3.292	3.603	2.000	1.329
10	1	5	10	17	63	4.417	4.738	5.000	0.948
11	9	9	3	18	57	4.094	4.658	5.000	1.362
12	3	3	3	19	68	4.521	4.794	5.000	0.940
13	24	23	16	13	20	2.813	2.563	1.000	1.482
14	47	30	3	13	3	1.906	1.533	1.000	1.161
15	5	16	20	33	22	3.531	3.712	4.000	1.169
16	36	18	12	23	7	2.448	2.167	1.000	1.391
17	13	13	13	20	37	3.573	3.950	5.000	1.456
18	13	17	5	33	28	3.479	3.894	4.000	1.421
19	23	38	14	13	8	2.427	2.158	2.000	1.229
20	3	16	15	41	21	3.635	3.841	4.000	1.097
21	20	20	12	25	19	3.031	3.167	4.000	1.454
22	26	33	10	16	11	2.510	2.167	2.000	1.353
23	59	21	9	4	3	1.656	1.314	1.000	1.024
24	63	19	8	3	3	1.583	1.262	1.000	0.991
25	50	19	5	15	7	2.063	1.460	1.000	1.367

TABLE XI
ANOVA SUMMARY TABLE - MEASURES OF ACADEMIC
ACHIEVEMENT FOR MALES AND FEMALES

	Source	Sum of Squares	df	Mean Square	F	Significance Level
English	Between Groups	15.450	1	15.450	11.343	.001
	Within Groups	128.039	94	1.362		
Math	Between Groups	11.475	1	11.475	9.104	.003
	Within Groups	118.484	94	1.260		
Science	Between Groups	3.951	1	3.951	3.064	.083
	Within Groups	121.205	94	1.289		
Civics	Between Groups	7.837	1	7.837	5.346	.023
	Within Groups	137.788	94	1.466		
Grade Point Average	Between Groups	9.159	1	9.159	8.723	.004
	Within Groups	98.693	94	1.050		

TABLE XII
ACADEMIC GRADES - EIGHTH GRADE STUDENTS

Academic Achievement Measure	Females			Males			Entire Population		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	N	Mean	Std. Dev.
English	45	3.00	1.22	51	2.20	1.11	96	2.57	1.23
Math	45	2.89	1.01	51	2.20	1.22	96	2.52	1.17
Science	45	2.62	1.05	51	2.22	1.21	96	2.40	1.15
Civics	45	2.87	1.22	51	2.29	1.20	96	2.56	1.24
Grade Point Average	45	2.84	1.00	51	2.23	1.05	96	2.52	1.07

Note: 4 = A, 3 = B, 2 = C, 1 = D, 0 = F for this study

APPENDIX G

FIGURES

N	Mean	Mode	Median	Standard Deviation
96	23.16	26.00	23.36	4.16

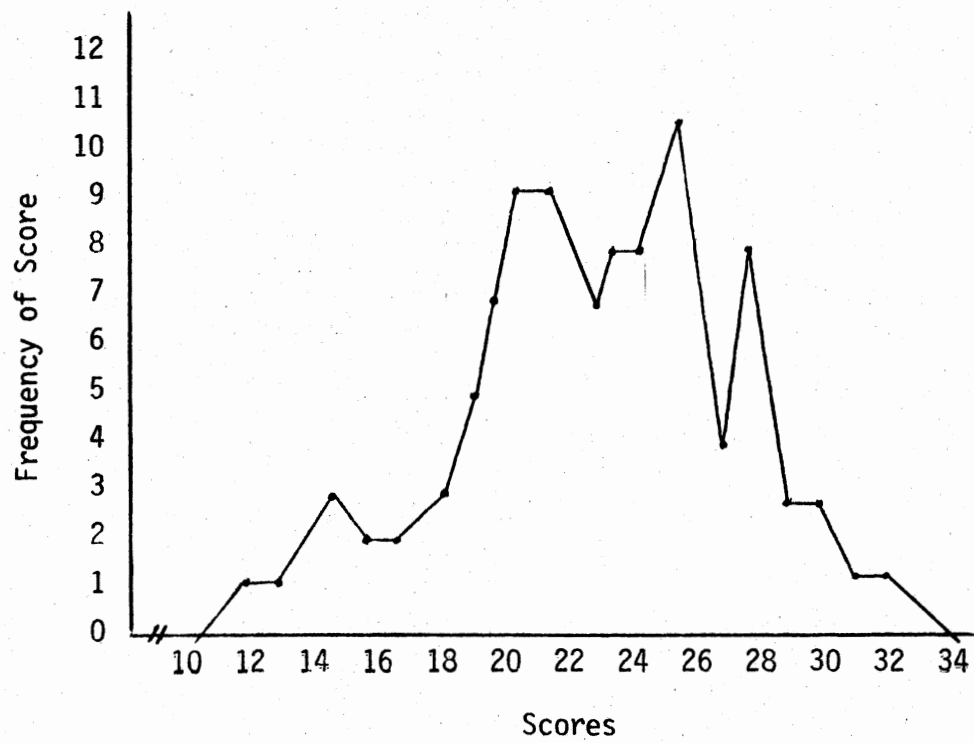


Figure 1. Intellectual Achievement Responsibility (IAR) Questionnaire - Total Locus of Control

N	Mean	Mode	Median	Standard Deviation
96	12.05	11.00	12.10	2.34

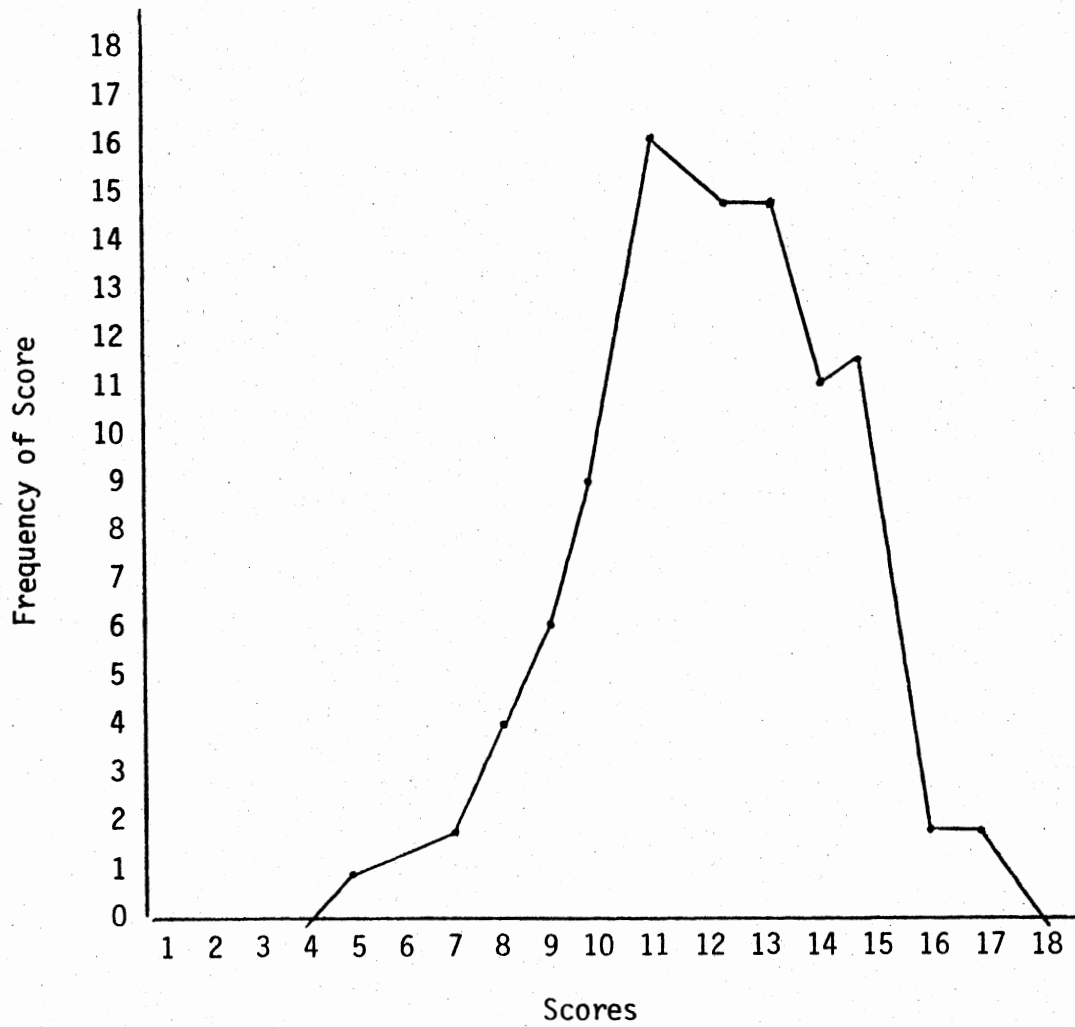


Figure 2. Intellectual Achievement Responsibility (IAR) Questionnaire - Positive Locus of Control

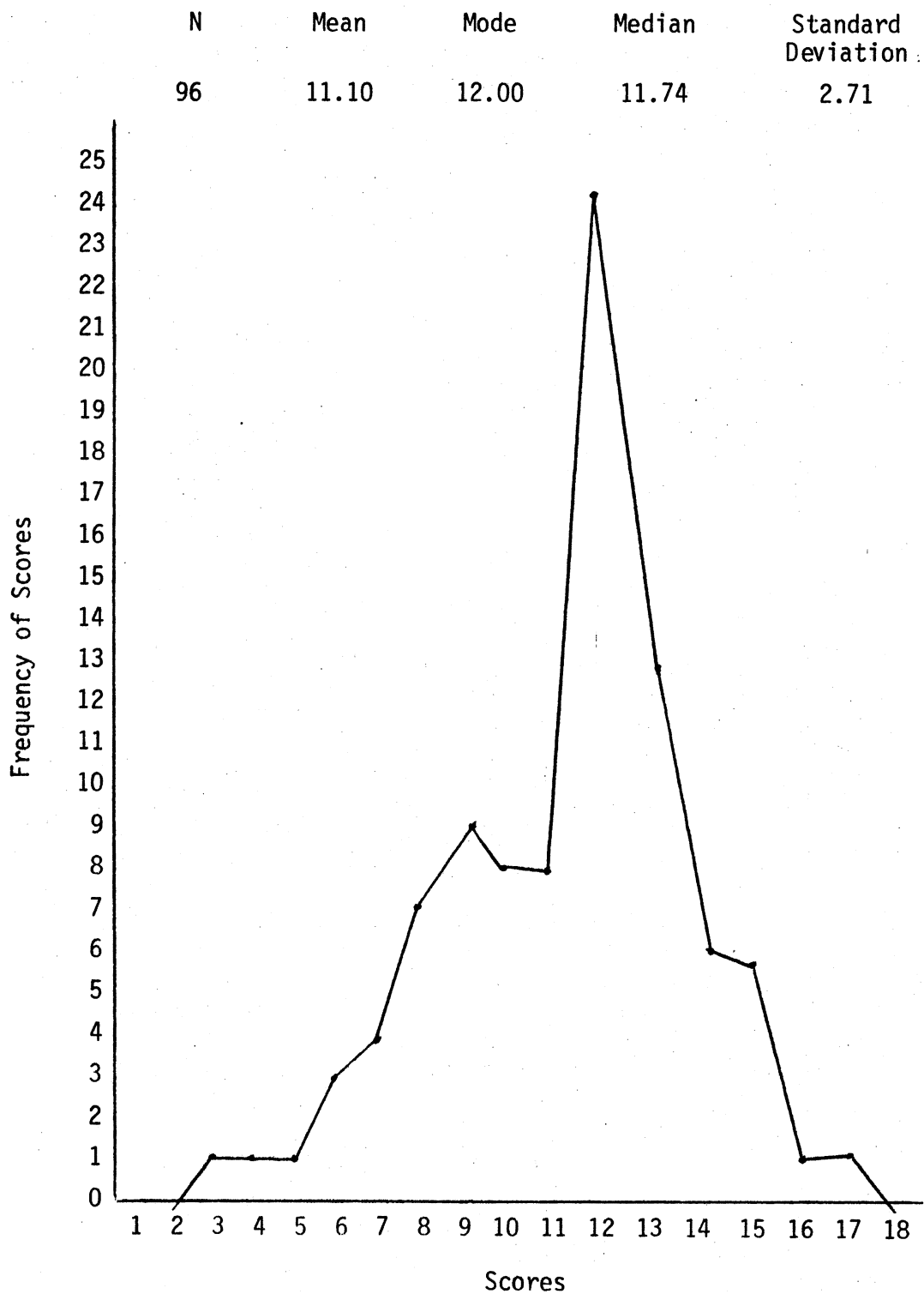


Figure 3. Intellectual Achievement Responsibility (IAR) Questionnaire - Negative Locus of Control

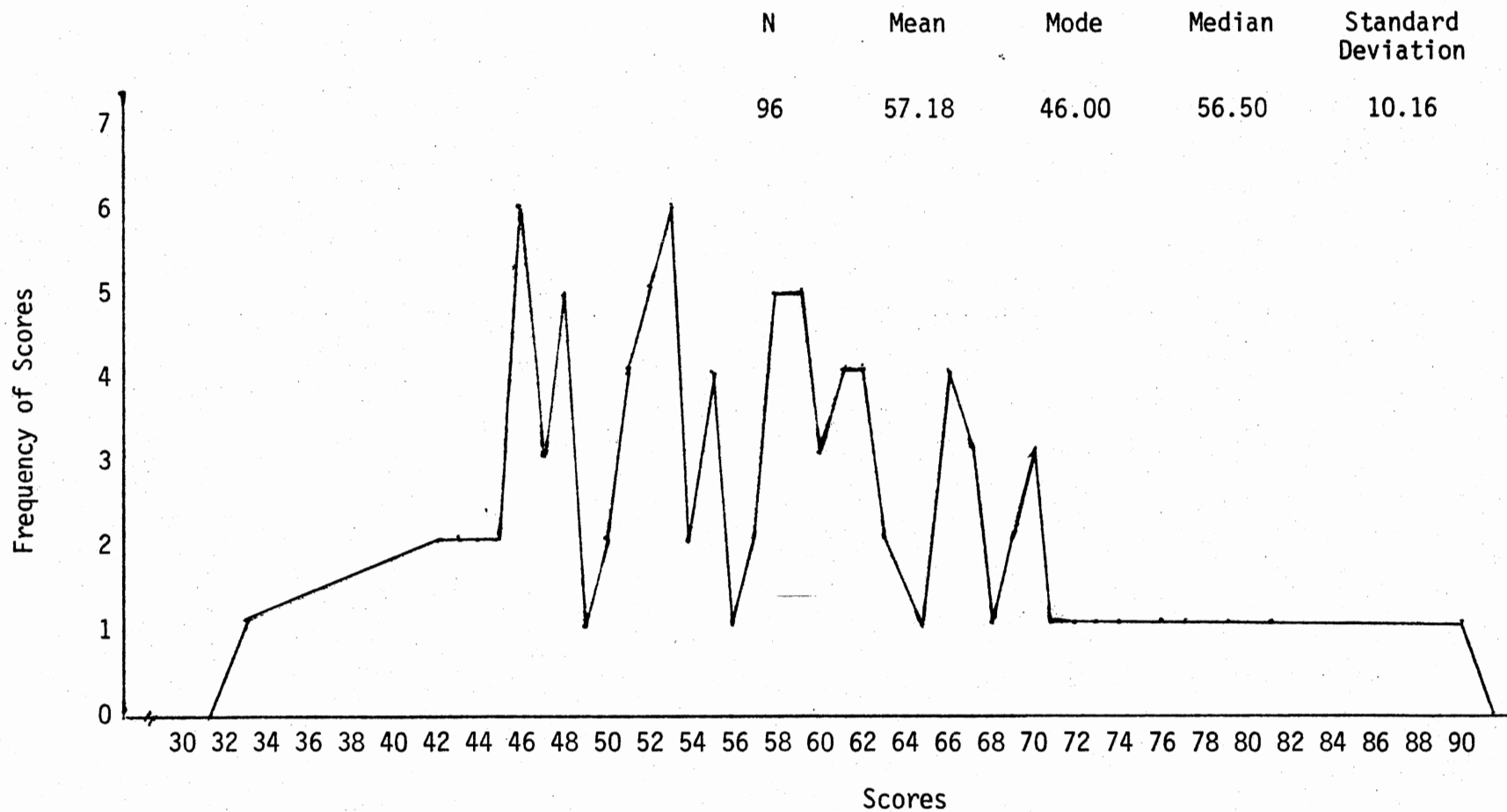


Figure 4. Competitive-Cooperative Attitudes Scale --Competition
What I Like to do Best

N	Mean	Mode	Median	Standard Deviation
96	57.99	47.00	57.25	11.50

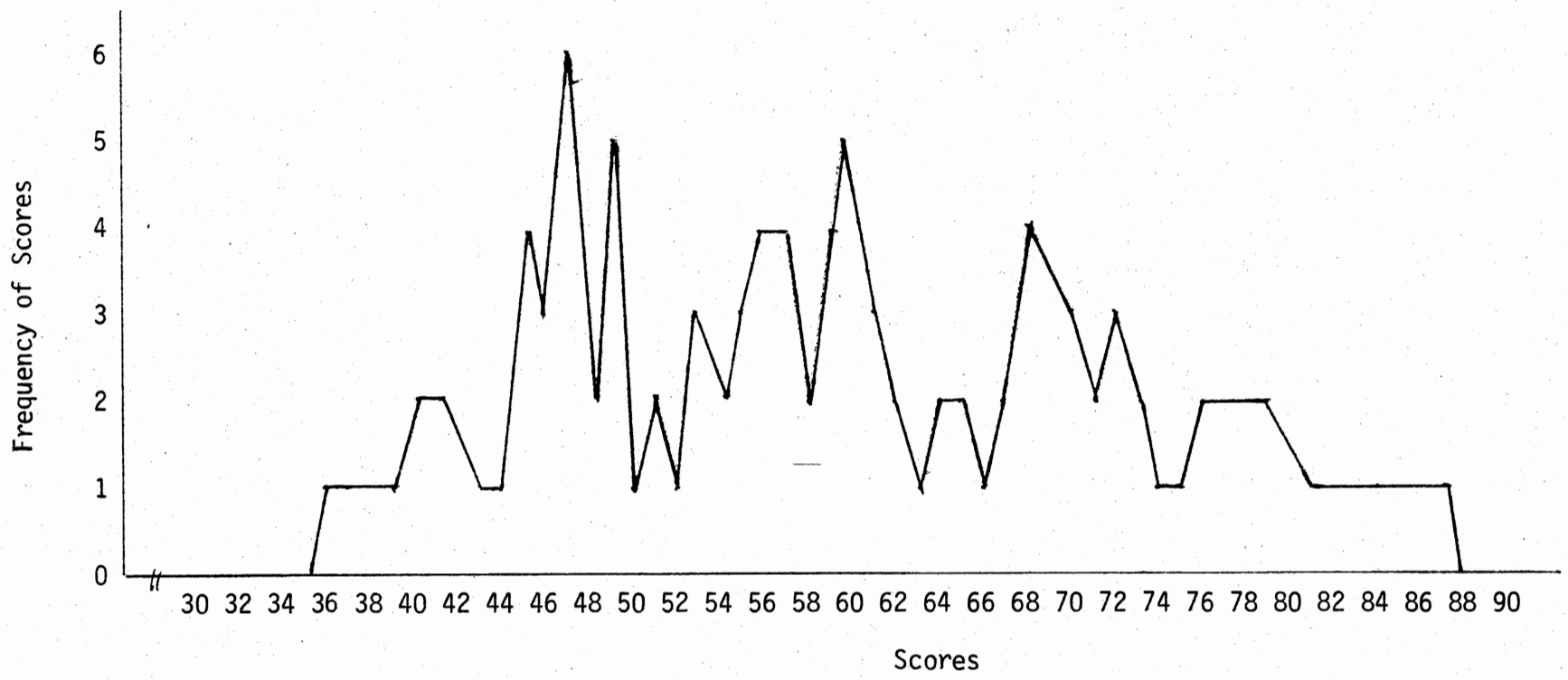


Figure 5. Competitive-Cooperative Attitudes Scale -- Competition School Work

VITA ²

Frances Louise Lowden

Candidate for the Degree of

Doctor of Education

Thesis: THE RELATIONSHIP OF ACADEMIC ACHIEVEMENT TO STUDENT PERCEPTION OF COMPETITION IN THE SCHOOLS, TO STUDENT LOCUS OF CONTROL ORIENTATION, AND TO SEX DIFFERENCES IN EIGHTH GRADE STUDENTS

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