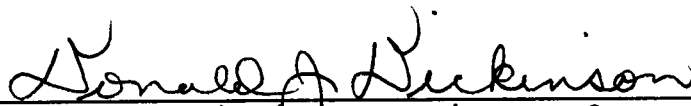
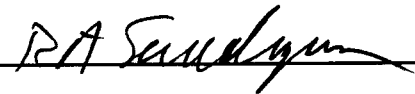


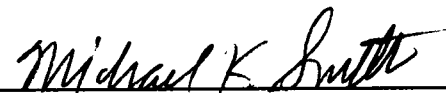
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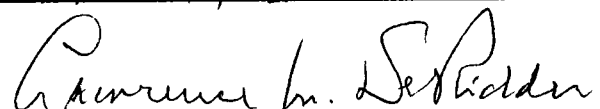
I am submitting herewith a dissertation written by Karla Jean Driesler entitled "Self-Concept, Locus of Control, and the Home Environment as Predictors of Reading Comprehension in Eighth-Grade Students." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.


Donald J. Dickinson, Major Professor

We have read this dissertation
and recommend its acceptance:







Accepted for the Council:



Associate Vice Chancellor and
Dean of The Graduate School

Self-Concept, Locus of Control, and the
Home Environment as Predictors of
Reading Comprehension in
Eighth-Grade Students

A Dissertation
Presented for the
Doctor of Philosophy Degree
The University of Tennessee, Knoxville

Karla Jean Driesler

December, 1993

DEDICATION

This dissertation is dedicated to my parents, Joe and Mary Jane Driesler, who have been my lifelong supporters in any endeavor I undertook. Through my life, they have provided a nurturing environment, full of love, patience, and understanding. Without them, none of my accomplishments would have been possible.

This dissertation is also dedicated to the memory of Samuel Griner, my swimming coach, who spent 17 years teaching me the values of discipline, dedication, and determination. Whenever things became difficult, or I had difficulty seeing the light at the end of the tunnel, the two words that he etched in my memory came to me: "Don't Quit!"

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ABSTRACT

The purpose of this study was twofold: to develop a valid and reliable measure of the home environment process variables and to determine the relative contribution of SES, self-concept, locus of control, and the home environment to the prediction of reading comprehension. From a secondary analysis of data from the National Educational Longitudinal Study (NELS:88), a parent survey of 13,932 eight grade students was used to determine potential measures of the home environment process variables. A student survey was used to assess the student's perception of self-concept and locus of control.

Factor analysis of the home environment questions yielded five scales for use in subsequent correlational and regression analysis. The five scales were: Parent Involvement in Cultural Activities, Family Rules; Parent-School Involvement, Parent-Teacher Involvement and Parent-Child Interaction.

Hierarchical regression analysis showed that SES accounts for 12% ($p < .0001$) of the variance in reading comprehension. The amount of variance predicted when self-concept and locus of control were added was 17% ($p < .0001$). When the measures of the home environment were added to the regression equation, the amount of variance predicted was 24% ($p < .0001$). There were no significant interaction effects between SES and the other independent variables with

reading comprehension. This suggests that regardless of the socioeconomic background, the relative influence of self-concept, locus of control, and the measures of the home environment are the same.

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CHAPTER I

INTRODUCTION

Purpose

The goal of educators has always been to teach students and promote academic achievement. Because of high drop-out rates, declining achievement test scores, and increasing accountability for student's success, educators are looking for potentially manipulatable variables that are proven to be related to academic achievement. Research has shown that a child's academic performance is determined by multiple variables including student characteristics, the instructional environment, home and family factors, socioeconomic levels, and relationships among these variables (Christenson, Abery, & Weinberg, 1986; Christenson & Ysseldyke, 1989). Which of these factors are of more importance in educational achievement is still debatable.

From the plethora of research on variables related to academic achievement, many models of educational achievement have been developed. One of the most researched models of academic achievement is Walberg's theory of educational productivity (Fraser et al., 1986; Uguroglu & Walberg, 1979; Walberg, 1981, 1983, 1984a,b; Walberg, Haertel, Pascarella, & Boulanger, 1981; Walberg, Schiller, & Haertel, 1979). In approximately 70 syntheses of several thousand intensive studies (Walberg, 1984a), data support the consistently positive correlation of the nine productivity

factors with cognitive, affective, and behavioral learning outcomes. These studies have substantiated Walberg's model for predicting achievement in math, science, social studies and reading. The nine factors fall into 3 groups:

Student aptitude

- 1) Ability or prior achievement, as measured by standardized tests.
- 2) Development, as indexed by chronological age or stage of maturation.
- 3) Motivation, or self concept as indicated by personality tests or willingness to persevere on learning tasks.

Instruction

- 4) Time or quantity of instruction.
- 5) Intensity or quality of the instructional experiences

Environmental

- 6) The educational stimulation by the parents in the home.
- 7) Social-psychological climate of the classroom or school environment.
- 8) The peer group outside the school.
- 9) Use of out-of school time (specifically, the amount of leisure-time television viewing).

The first five aspects of Walberg's theory of educational productivity of student aptitude and instruction are also prominent in the educational models of Benjamin Bloom, Jerome Bruner, John Carrol, Robert Claser, and others (Haertel, Walberg & Weinstein,

1983). Each of these first five factors is necessary for obtaining optimum educational productivity but not sufficient by itself. The essential factors may substitute, compensate, or trade off for one another in diminishing rates of return. According to Walberg (1984a), the first five factors are only partly alterable by educators since they are determined by diverse economic, political, and social forces. Ability and motivation are influenced by parents, prior learning, and the students themselves and are unlikely to be raised by educators efforts alone. The environmental factors influence learning in two ways: students learn from them directly, and these factors indirectly benefit learning by raising ability, motivation, and responsiveness to instruction. The direct and more alterable factors hold the best hope for increasing educational productivity (Walberg, 1981).

Walberg et al. (1979) found the following approximate amounts of overlapping variance for each of the following factors: Motivation, 11%; Ability, 60%; Time or quantity of instruction, 20%; Quality of instruction, 20%; Classroom climate, 60%; and Educational stimulation by the parents in the home, 50%.

However, since the relationship of school performance to gross global social status variables such as socioeconomic status has not been particularly useful for educational policy development (Benson, 1980), the trend in environmental research has moved toward more subtle intra-family and interpersonal process variables and more specific child outcomes. Studies from the educational,

psychological, and sociological literature suggest that ability and achievement are more closely linked to the socio-psychological environment and intellectual stimulation in the home than they are to parental socioeconomic status indicators (Iverson & Walberg, 1982).

The goal of this study is to determine the contribution of interpersonal variables (self-concept and locus of control) and the home environment process variables to the prediction of reading comprehension. The results of this study will help educators determine what areas to focus on in order to reduce the differences in achievement among students from differing socioeconomic backgrounds. This may be accomplished by targeting the deficient variables in early intervention programs or various parent training programs. By monitoring the effects of these programs, educators will be better able to develop effective interventions designed to increase achievement.

Conceptual Framework

From the beginning of the nature versus nurture controversy, there have been many theories developed to explain the development of personality and behavior. The psychology of individual differences began with Galton's (1869) work on the hereditary basis for intellectual superiority which was stimulated by Darwin's work on heredity. A brief discussion of the evolution of behavior and

learning theories will follow, culminating with the Social Learning Theory, the model for this study.

Psychoanalytic Theory

Psychoanalytic theory emphasizes the significance of childhood experience and the power of mental events to determine human behavior. The most influential theorist has been Sigmund Freud (1856-1939). He conceived the first formal theory of personality, and after nearly a century, his theory remains the most detailed and original. Neo-Freudians (such as Carl Jung), along with Freud, emphasized biological factors in the development of personality, stressing that personality is chiefly a product of physical and biological needs and genetic endowment. Both Jung and Freud asserted that environmental influences, even the family, are of secondary importance in the development of personality.

Just about the time Freud and Jung were proclaiming their theories, in the late nineteenth and early twentieth centuries, two new disciplines, sociology and anthropology, were revealing the enormous impact that social conditions can have on human behavior. Social scientists studying remote tribes and ancient civilizations discovered wide variations in behavior. They began to realize that environmental forces such as economic conditions, education, religious beliefs, political ideas, and most of all, other people, have great influence on individual behavior. A number of Freudian theorists (such as Alfred Adler, Karen Horney, and Erich Fromm)

responded to this paradigm shift by modifying psychoanalytic theories so that they acknowledged social as well as biological determinants of behavior.

The Law of Effect

At the beginning of the 20th century, American psychologists such as Edward Thorndike, John Watson, Edward Tolman, and B.F. Skinner were concerned with animal and human learning. B.F. Skinner's radical behaviorism theory had a great impact on personality theory. Skinner rejected such concepts as drive because they cannot be directly observed and thus do not lend themselves to scientific examination. Skinner focused on a functional analysis of behavior, an analysis of the relationships between the environmental events and a particular response. This exclusive focus on the environment makes no allowance for cognitive or symbolic processes. Although Skinner has been extremely influential, most behaviorists do not ignore internal events. From the radical behaviorist's view, there are two components, environment and behavior, with the latter being a relatively passive response to the former.

Social Learning Theory

Social learning theory hypothesizes that there are three components: environment, behavior, and person, each influencing and being influenced by the others. Although behavior is partly determined by events in the environment, it is also determined by

cognitive events. Social learning theorists maintain that most new behavior is acquired through observational learning, in which we watch the actions of models and vicariously experience their rewards and punishments. Although social-learning theory emphasizes the observation of models, it also acknowledges the role of direct experience in learning (Bandura, 1977, 1978).

The reciprocal determinism model, deduced from social learning theory, is a triadic model which conceptualizes human behavior as a continuous interaction among behavior (B), cognitions and other internal events that affect perceptions and actions (P), and external environment (E) (Bandura, 1977, 1978).

According to Bandura (1978):

mediation
Most external influences affect behavior through intermediary cognitive processes. Cognitive factors partly determine which external events will be observed, how they will be perceived... and how the information they convey will be organized for future use... By altering their immediate environment, and by arranging conditional incentives for themselves, people can exercise some influence over their own behavior. An act therefore includes among its determinants self-produced influences.

*environment
shaping a
social
setting*
It is true that behavior is influenced by the environment, but the environment is partly of a person's own making. By their actions, people play a role in creating the social milieu and other circumstances that arise in their daily transactions. Thus, from the social learning perspective, psychological functioning involves a continuous reciprocal interaction between behavioral, cognitive, and environmental influences. (p. 345).

The reciprocal determinism model extends the basic interactionist formula of behavioral and ecological models, (i.e., $B=f(P,E)$), whereby behavior is a function of the interaction between

the individual and environmental factors) and includes internal personal factors such as beliefs, values, and perceptions. Bandura (1978) emphasized the importance of the self as a primary motivational predictor of achievement while other social learning theorists suggest that children's behavior in achievement situations is influenced by their perceived locus of control (Stipek & Weisz, 1981). The reciprocal determinism model provides the most comprehensive system for understanding human behavior (Reynolds, Gutkin, Elliot, & Witt, 1984) and is the theoretical basis for this study.

As stated before, the home environment has long been recognized as a powerful force in children's lives. From birth to graduation, a child spends approximately 15,000 waking hours in the classroom and 85,000 waking hours outside of the classroom. It follows that if behavior is a function of the environment, the modeling behaviors of parents in the home environment should influence academic achievement. In addition, as the reciprocal determinism model states, behavior is a function of a person's perceptions. Therefore, internal perceptions of self and locus of control could additionally exert powerful effects on academic achievement. The purpose of this study is to determine the contributions of perceptual (self-concept and locus of control) and home environment process variables to the prediction of reading comprehension.

CHAPTER II

REVIEW OF THE LITERATURE

Research has shown that global social-status indicators such as parents' occupation, income, and education are inexpensive and relatively accessible factors in predicting achievement, but they have only low to moderate correlations with achievement (Bloom, 1981; Iverson & Walberg, 1982; Song, 1982; Walberg, 1979; White, 1982). These factors are also inadequate because of the mediating effects of parental beliefs, expectations, and behaviors (Bloom, 1964; Scott-Jones, 1984; Seginer, 1983). Family structure variables such as birth order, and number of children have extremely low relations to achievement (Cicciorelli, 1978; Coleman, et al., 1966; Dave, 1963; Marjoribanks, 1978; White, 1982). These variables do not have much utility because sociological indices and family structure variables are not easily modified, and they do not give specific information that would be helpful in developing interventions.

The relationship between family process variables, as well as family psychological characteristics and achievement are much higher than sociological indices and family structure variables. The amount of variance contributed by process variables ranges from .50 to .80 (Bloom, 1964; Bradley & Caldwell, 1984; Clark (1987); Coleman et al., 1966; Dave, 1963; Dolan, 1980; Fraser, Welch & Walberg, 1986; Henderson, 1982; Iverson & Walberg, 1982; Laosa, 1982;

Marjoribanks, 1979a, 1979b, 1987; Onocha & Okpala, 1986; Reynolds & Lee, 1991; Seginer, 1983; Song, 1982; Song & Hattie, 1984; Thompson, 1985; Uguroglu, 1986; Wang, et al., 1990; Wolf, 1964). Process variables include parental attitudes as well as specific behaviors of the family. These process variables are more readily alterable and can form a basis for interventions to compensate for particular deficiencies.

The following section will first review the research pertaining to the external variables related to academic achievement, (socioeconomic status, family constellation, and home environment process variables) and will follow with a review of internal perceptual variables (self-concept and locus of control) that affect academic achievement.

External Variables Related to Academic Achievement

Socioeconomic Status Variables

There exists a plethora of research in the last 75 years on the relationship between academic achievement and socioeconomic status (SES) variables such as education of parents, occupational status of parents, and income level of the parents. Research has substantiated that SES is the most powerful family characteristic that predicts academic performance, regardless of the measure of status used. The early measures of the home environment focused on economic factors. One such instrument was the Chapman-Sims Scale

which included such items as occupation of the father, parents' education, items of material possessions, such as a piano, telephone and the number of books in the home. According to Fraser (1959), these items were found to give reasonable, consistent assessments of the home environment.

Even though much of the early research on family environment assessed learning environments based upon such global social-status indicators as occupation of the father, the income of the family and sibling variables such as size of family and birth order, these gross variables have only low to moderate concurrent validities in relation to cognitive performance (Walberg, 1979). According to Bloom (1981), the typical correlation between SES indices and children's school achievement was about $+ .30$, or 10% of the variation.

White (1982) conducted a meta-analysis of 101 empirical studies of the effects of SES on achievement and found higher achievement correlations with measures of home atmosphere ($r = .55$) than with SES. The median correlation across SES measures was modest ($r = .25$). White concluded that measures of family process variables of home environment account for six times as much variance in achievement as traditional SES measures. Additionally, in a meta-analysis of factors influencing learning, Walberg suggests that the "alterable curriculum of the home" is twice as predictive of academic learning as is family socioeconomic status (Walberg, 1984, p.25).

In a quantitative synthesis of 18 studies from the educational, psychological, and sociological literature, the analyses suggested that ability and achievement are more closely linked to the socio-psychological environment and intellectual stimulation in the home than they are to parental socioeconomic status indicators (Iverson & Walberg, 1982). Marjoribanks (1979b) examined the relationships between children's intellectual abilities and the social-psychological characteristics of the home environment, including press for achievement, activeness, intellectuality, independence and language stimulation. The conclusion was that family process variables are more highly related to children's mental ability scores than are gross, structural indicators such as family size, socioeconomic status, and birth order.

In 1982, using factor analysis, Song demonstrated that home environment could be divided into three major facets: family structure, social status and family psychological characteristics. Family structure involves two major variables: birth order and number of children in the home. Indicators of social status include father's occupation, parents' education, and the ability to afford further education. Family psychological characteristics include encouragement and expectation, educational activities in the home, educational interests, parental evaluation of intellectual qualities of the child, and reward and punishment. These family psychological

characteristics accounted for more variance in academic achievement than did family structure and social status indicators.

Conversely, other researchers have found that the effects of SES are greater on academic achievement than are measures of the home environment. Marjoribanks (1982) used hierarchical regression analyses and response surfaces to examine interrelationships among social status, family learning environment, and children's academic achievement in a sample of nine hundred and eighteen 11-year-old Australian children and their parents. Findings suggest that the unique contribution of family environment to variation in achievement scores was relatively small when compared to the contribution of social status. The results of the 1980 national study, *High School and Beyond*, showed the pervasive importance of parental education and family affluence. These factors were primary to students' postsecondary attainment, even when aspects of the home environment were taken into account. Home environment factors were less important overall, and many were found to have no independent influence on educational attainment.

Interaction Effects of SES

Research has documented that socioeconomic factors are related to reading achievement, although the literature on school achievement shows that SES variables have less overall effect on standard measures of academic achievement during later stages of

childhood. Socioeconomic differences are apparently less important during adolescence (Coleman et al., 1966).

The effects of SES differences on locus of control are consistent. Both higher income and higher education are clearly associated with higher internal locus of control scores. (Phares, 1976). Researchers have shown consistently that children in lower SES setting perform academically below those from middle-class settings (Battle & Rotter, 1963, Coleman et al., 1966; Crandall Katvosky, & Crandall, 1965; Nowicki & Strickland, 1973).

On the other hand, the effects of SES on self-concept indicate that there is no clear and definite pattern of relationships between social class and positive or negative attitudes toward the self (Coopersmith, 1967). Children in the upper middle class are more likely to have high self-concepts, and those in the lower class are more likely to have medium or low self-concepts, although the differences are minimal (Rosenberg, 1965).

Family Constellation Variables

The research on family constellation variables such as the number, birth order, and spacing of children is one of the most robust in social science research (Coleman et al., 1966). In a meta-analysis of the relationship of sibling structure to achievement, Cicirelli (1978) found that the typical correlation of the number of children in the family with academic achievement is .25. Birth order and spacing are significant correlates of

achievement in large samples, but their correlations with learning are considerably smaller than those involving SES and number of siblings. Marjoribanks (1978) used surface regression analysis to examine the confluence model proposed by Zajonc and Markus (1975) which proposes that the relations between birth order and intellectual ability are accounted for by the age spacing between adjacent siblings. The results did not support the model when the academic achievement and family environment scores were examined.

As discussed in the above paragraphs, SES and family constellation variables have low to moderate correlations with academic achievement. These variables can be considered "static" and are not easily modifiable. The following paragraphs discuss external variables which are more readily modifiable.

Process Variables Related to Academic Achievement

Much of the impetus for research on family social-psychological environments was provided by Benjamin Bloom (1964), who proposed that the environment may be regarded as providing a network of forces and factors which surround, engulf, and play on the individual. According to Bloom, it is estimated that at least one-third of the development at age 18 has taken place prior to the child's entrance into the first grade of school. The early environment is crucial because of three reasons. One, there is a very rapid growth of selected characteristics in the early years; Two, each characteristic is built on a base of that same

characteristic at an earlier time; and three, it is easier to learn something new than to replace a set of learned behaviors with a new set.

Bloom states that educational growth is clearly not limited to what takes place in the school in grades one to twelve. The schools build on a foundation which has been largely developed in the home in the early years of life. The majority of variation in children at the beginning of first grade can be attributed to the home environment. Bloom's research has shown that the following environmental factors are crucial in students' achievement or failure:

1. work habits and daily schedule of the family
2. available parental guidance, support, and assistance for the child's school and homework
3. intellectual stimulation
4. language development
5. parents' academic aspirations and expectations for their children (Bloom, 1984).

Other research has shown that parents appear to be the primary influence on a child's motivation to learn (Henderson, 1987), especially parental behaviors (Thompson, 1985). Parents' formative effect on their children's motivation to learn has an impact at every stage of development, lasting through the high school years and beyond (Wlodkowski & Jaynes, 1990).

British School Research

The British school studies attempted to develop measures of the home environment, but their research focused on parental experiences and attitudes, and material conditions in the home rather than on behavioral processes (Marjoribanks, 1979a). There were several home assessment measures used in the British studies such as the Survey of Parents of Primary-School Children (Plowden, 1967), the Parent Attitude Research Instrument and the Index of Educational Environment. Examples of the questions focusing on parent attitude and experiences are: "What do you feel about the ways teachers control the children," and "Has the head teacher, or any other teacher talked to you about the methods they use at (present school)?" (Iverson & Walberg, 1982).

Iverson and Walberg (1982) found in a quantitative synthesis employing multiple regression models that the Chicago school studies appeared to be better measures of educationally relevant home factors than British school studies, although it was noted that other methodological differences between studies in each category may account for the higher correlations.

Chicago School

In the 1960 s, two of Benjamin Bloom's doctoral students at the University of Chicago, Dave (1963) and Wolf (1964), did research designed to measure the process variables of family environment. Process variables are parental behaviors and parent-child

interactive behaviors that seem to foster intellectual growth. The focus is on what parents do in the home rather than what they are. From an extensive review of the literature, process variables were developed and sets of process variables were summed to provide indices of presses in the home environment. The six presses are listed below:

1. **Achievement press**-the parents' aspirations for the child and their interest in, knowledge of, and standards of reward for the child's educational achievement.
2. **Language models**-the quality of the parent's language and the standards they expect in the child's language.
3. **Academic guidance**-the availability and quality of academic guidance and help provided in the home.
4. **Activity in the home**-stimulation provided in the home to explore various aspects of the larger environment.
5. **Intellectuality**-the intellectual interests and activity in the home.
6. **Work habits**-the degree of routine in home management and the emphasis on regularity in the use of space and time.

These six presses made up an instrument called the Index of Educational Environment(IEE). These six presses were broken down into more specific process characteristics and ratings were made on interview and observational data which typically took 1 to 2 hours per home. A correlation of $+ .80$ was found when the overall index of the home environment was correlated with the results of a fourth-

grade battery of achievement tests. The highest correlations were with tests of word knowledge and reading, and lowest with spelling and arithmetic computations, suggesting that the home's greatest influence is on language development of the child and his/her general ability to learn, and the specific skills taught in school were influenced the least.

The focus of subsequent instruments based on the initial Chicago studies was on the presses that were most easily modified: academic guidance, achievement, and activeness of the family. Language models and intellectuality were not included because they are less closely related to achievement, they seem more associated with parent status than behavior, and they are not easily modifiable (Kifer, 1975; Marjoribanks, 1979b).

Other studies using Spanish-American (Weiss, 1974) and Australian children (Keeves, 1970) have documented the relationship between home process variables and academic achievement in different cultures.

Instruments Based on Chicago School Studies

Since Dave's (1963) and Wolf's (1964) pioneering research on process variables in the home environment, there have been a number of efforts directed at developing more sensitive measures of children's home environments assessing "processes" rather than structural and status indices such as parental occupation, parental education, size of family, etc. These "processes" include specific

transactions between parent and child, the types and quantity of objects available in the environment, specific events that occur in the home and specific features of the physical environment of the home. These environmental process variables have been assessed with a number of different methodologies, but they have consistently been found to be more strongly related to scholastic performance than are SES indices (Marjoribanks, 1974).

The Dave method has also been used in a brief self-report by one or both parents. A checklist of home environmental processes consisting of 14 items has been used by Bloom (1981). Questions are read by an interviewer or by the parents, and a 0 is assigned if it is something that is rarely done and a + is assigned if it is something that is frequently done, and a ++ is given if it is something that is especially emphasized in the home. The number of plus marks correlates about +.60 to +.70 with measures of school learning in grades 4-6 (Bloom, 1981).

Another instrument, the Henderson Learning Process Scale (HELPS), was also developed (Henderson, Bergan, & Hurt, 1972) using the environmental process variables from the work of Dave (1963) and Wolf (1964). It is a structured interview using a Likert-type response format, and requires only 20 minutes to administer. Although it does not provide as detailed information as the focused interview procedures used by Dave (1963) and Wolf (1964), it has the advantage of a short administration time and can be used by interviewers with only a small amount of training. The items focus

primarily on specific experiences provided for children and on patterns of interaction among the family members, but they also tap attitude and dispositional factors (Laosa, 1982a) such as aspirations and expectations.

A more detailed questionnaire, the Home Educational Environment Index (HEE) was developed by Dolan (1980). It consists of 39 questions that focus on four dimensions: (a) parent's knowledge and interest in school-related activities; (b) parent's support of academic activities; (c) opportunities for and quality of the interaction between parent and child on school-related activities; and (d) parent's belief in the use of schooling for the child's future. The questionnaire was filled out by the parents usually in group sessions. The method yields correlations of about +.50 with the children's school achievement in the elementary schools. The HEE has also been shown as a significant predictor of reading achievement (Dolan, 1983).

A face-to-face individually administered interview measuring the home process variables is the Family Environment Schedule (FES) developed by Marjoribanks (1978). The FES has six factor scales that have been substantiated by research. The scales are: (a) Parent's expectations for the child, (b) Parent's expectations for themselves, (c) Concern for the use of language within the family, (d) Knowledge of child's educational progress, (e) Reinforcement of educational expectations, and (f) Involvement in educational activities. A recent study by Onocha and Okpala (1986) investigated

the relative contribution of nine measures of the home and school environment to the prediction of Science achievement in a sample of 480 Nigerian students. The factors consisted of the six factor scales on the FES, two factors from a school environment scale (Intellectual Orientation of the school and the Punitive Nature of the school) and a measure of the family's social status. Family involvement in educational activities was found to be the best predictor of achievement, followed by parents' knowledge of child's educational progress. Also found to make significant contributions to the prediction of achievement were parents' reinforcement of educational expectations, intellectual orientation of the school, nonpunitive school environment, and parents' concern for the use of language within the family. The measure of the social status of the family made the least contribution of the nine variables.

Recent Studies on Process Variables (1981-1992)

In the last ten years, many researchers have investigated the relations between academic achievement and proximal sociopsychological measures of the home. Addressing the scarcity of research on the effects of more than one or two measures of the home environment, Reynolds and Lee (1991) employed exploratory and confirmatory factor analysis techniques to probe 35 demographic, attitudinal and behavioral indicators of the home environment. The results suggest the two major dimensions and subdimensions of the family listed below:

Family resource

Material resources (as measured directly by home resources such as owning a computer, and a place to do homework, and indirectly by occupational status)

Psychological resources (as measured by parental expectations for their children's educational attainment and parent's belief in the value of planning for events)

Behavioral resources (as measured by parents' involvement in school-related activities)

Communication-interaction (as measured by talking about homework, school success, etc.)

The authors concluded that future studies using comprehensive measures of the home environment are needed to test the predictive validity of the factors with educational and psychological outcomes.

The relative influences of the school, neighborhood, and home environment on educational performance were investigated by Thompson (1985) in a sample of 392 Irish seven and ten year olds. Factor analysis and regression analysis demonstrated minimal influences of the school and neighborhood environments, and exceedingly close associations between the home environment and variations in educational performance. The average percentage of variance for the environmental factors was as follows: School, 6%; Neighborhood, 9%; and Home Environment, 82%. Within the home environment, the parents' behaviors, not the parental attitudes or the material surroundings, were the important predictors of educational

performance. The best individual environmental predictors of educational performance were home literacy (parents' education, library membership, father's reading, and number of books in the home), educational ambition, and socioeconomic efficiency. These predictors had more effect on reading than on math.

Reginald Clark (1987) spent a decade studying families and the characteristics of "effective families." By studying 4th graders from varied ethnic backgrounds, he determined that the high achieving students came from families that had the following characteristics that exist regardless of family income, education, and ethnic background:

1. a feeling of control over their lives
2. frequent communication of high expectations to children
3. a family dream of success for the future
4. hard work seen as a key to success
5. an active, not a sedentary lifestyle
6. 25-35 home-centered learning hours per week
7. the family viewed as a mutual support system and problem-solving unit
8. clearly understood household rules, consistently enforced
9. frequent contact with teachers
10. emphasis on spiritual growth

An instrument currently under development by Dr. Sandra Christensen (1990), the Home Rating Scale (HRS), is based on a literature review of family factors correlated with successful

school performance. It is a semi-structured interview lasting approximately one hour conducted in the home. The HRS is comprised of 27 questions, which provides information about three broad areas: weekly routine and use of out of school time, homework practices and family attitude toward the child's education, and the nature and extent of stressful events or changes in the family. There are nine factors on the HRS: Routine, Organization, Lack of stress, Security, Responsibility, Expectations, Valuing education, Support academics, and Support school.

Internal Variables Related to Academic Achievement

Many researchers point out the importance of the self as a primary motivational predictor of achievement (Bandura, 1977; Bolles, 1978; Cattell, 1975; Coleman et al, 1966; Johnson, 1974; Maer 1978; and Smith, 1978; cited in Uguroglu & Walberg, 1986). In the national study, Equality of Educational Opportunity (Coleman et al., 1966), it was reported that a child's attitude related strongly to school achievement, and that self-concept and locus of control affected school achievement far more than family background or school characteristics.

In a research synthesis of 40 studies completed by Uguroglu and Walberg (1979), there was no significant difference found among the various constructs of achievement motivation, locus of control, academic self-concept, or general self-concept. A mean correlation

of .34 was found between the various constructs of motivation and academic achievement. Their research suggests that motivation measures are moderate correlates of achievement and that multiple or multi-factorial measures of motivation are likely to improve predictions of achievement.

Self-Concept

Self-concept is known as the collection of people's attitudes about themselves; their picture of the way they look and act; the impact they believe they have on others; and their perceived traits, abilities, foibles, and weaknesses (Morgan, King, Weisz, & Schopler, 1986).

A vast amount of research has been conducted on the relationship between self-concept and achievement. In a review of 80 studies, West, Fish, and Stevens (1980) state that "many educators and social scientists believe that self-concept is a very important if not the single most important personality variable for the prediction of academic achievement" (p.194). It is concluded in their review that correlational investigations yield ample evidence of significant correlations between general self-concept and achievement and that these correlations tend to range from .18 to .50. West et al. (1980) concluded that there was evidence to support the notion that high achievers tend to have high self-concepts and that low achievers tend to have low self-concepts. It

is also well-established that learning increases as self-concept increases (Klausmier & Goodwin, 1966).

Other studies have found that small to moderate positive relationships exist between ratings of self-concept and achievement (Bridgeman & Shipman, 1978; Kifer, 1975; MacDonald & Lyon, 1989, Prendergast & Binder, 1975; Purkey, 1970). Uguroglu and Walberg (1979) in a quantitative synthesis of the correlation between self-concept and educational achievement, found that an average correlation of .29 and .41 exists for general self-concept and academic self-concept respectively. More recently, Hansford and Hattie (1982), found similar results in an extensive meta-analysis of measures of self and performance/achievement. They found in an analysis of 1136 effect sizes based on 68,756 unique persons from 128 studies that the average correlation between achievement and general self-concept was .21; and when academic self-concept was considered, the correlation rose to .42. They concluded that a low positive correlation exists and that measures of self may be as strongly linked with performance/achievement as any other personological variable.

Locus of Control

Locus of control is a psychological term that first emerged from social learning theory in an attempt to explain components of human behavior (Phares, 1976). The term was coined by Heider in the 1940s and posits that average people follow specifiabile rules in

their analyses of the causes of everyday behavior. (Geen, Beatty, & Arkin, 1984). Specifically, Heider's main assertion was that people view the cause of an event as dependent on factors within the person or external/environmental factors. The individual makes the determination as to whether the cause of an event is internally controlled or externally controlled based on the result of many past experiences. People explain success and failure and predict future achievement according to causal attributions of luck, ability, task difficulty, and effort (Weiner, 1979). Those who believed that success is caused by outside forces of luck, task difficulty, or others with power were usually less motivated than those who believed that success depended on their own behavior and abilities (Rotter, 1966).

Developmentally, locus of control expectancies are formed early in life, and by the age of three they tend to be statistically stable in test-retest studies (Mischel, Zeiss, & Zeiss, 1974 cited in Bridge, Judd, & Moock, 1979)

Research for the past 20 years has linked internal locus of control with school achievement (Payne & Payne, 1989). An often replicated finding is a significant correlation between academic achievement and locus of control. In a major review of 35 studies on the relationship between locus of control and school achievement, Stipek and Weisz (1981) concluded that locus of control was significantly correlated with both achievement test performance and grades (correlations ranged from .09 to .51). It was also noted

that even after the effects of I.Q. were controlled, a positive relationship between internal locus of control and achievement existed.

Locus of control has been documented as a predictor of academic success and provides evidence for personality and learning differences between children (Creech & MacDonald, 1988 cited in Creech, 1991). In a quantitative synthesis of a calibration sample of 22 studies and a validation sample of 18 studies, Uguroglu and Walberg (1979) found that an average correlation of .32 exists between locus of control and academic achievement. In a literature review of the relationship between locus of control and achievement, Bar-Tal and Bar-Zohar (1977) found that 31 of 36 studies reviewed indicated a significant positive relationship between locus of control and academic achievement with internal having higher achievement than externals (correlations ranged from .27 to .51).

Environmental Variables Related to Academic Achievement

The contribution of the home differs in various subject matter areas. Research has substantiated that environmental forces have more influence on reading than on any other subject (Warburton, 1964). A robust research base substantiates that home variables (both gross and process) correlate more highly with measures of verbal than non-verbal intelligence (Eells, Davis, Havighurst, Merriok, & Tyler, 1951; Havighurst & Breese, 1947; MacArthur & Elley, 1963; Marjoribanks, 1974a, 1974b; Walberg & Marjoribanks,

1974; Whiteman, Brown, & Deutsch, 1967 cited in Kellaghan, 1977). In a factor analysis and regression analysis, Thompson (1985) found that the environment has more effect on reading than on mathematics. Dave's (1963) study found that larger amounts of variance were predicted by home variables in the case of word knowledge (63%) and reading (53%) than in the case of spelling (37%) and arithmetical computation (31%). Walberg and Marjoribanks (1976) and Marjoribanks (1979b), in a review of several studies, showed a correlation of up to .80 of regression-weighted composites of home interview measures of parental characteristics and behavior with verbal achievement.

Statement of the Problem

In summary, a review of the literature on variables related to academic achievement reveals small to moderate correlations between SES, perceptual variables such as self-concept and locus of control, and academic achievement. More recently, researchers have substantiated higher correlations between process variables in the home environment and academic achievement. There exists the following weaknesses in previous research:

1. Studies developing comprehensive measures of family process variables have frequently not been replicated more than once (Kalinowski & Sloan, 1981).
2. Most studies are weak in external validity because few prior intensive studies have used a large, nationally normed

data sample and they typically analyze only 1 or 2 factors (Fraser, Welch, & Walberg, 1986)

3. Research has not included attitudinal variables and has been restricted by limited home environment measures (Marjoribanks, 1987; Scott-Jones, 1984; Reynolds & Lee, 1991).

4. Research is needed on low-socio-economic-status children to determine the differences in variables thought to be associated with achievement (Scott-Jones, 1984).

The purpose of this study is to determine the relative importance of SES, self-concept, locus of control and home environment in predicting reading comprehension. By knowing which of the variables exerts the most influence on reading comprehension, external efforts can be made to change such conditions. The present study embodied several features which tended to overcome the weaknesses of past studies. To address the issues of external validity and replication, the National Education Longitudinal Study (NELS:88), a large national random sample of eighth grade students and their parents was used for data analysis. The second feature is the inclusion of the attitudinal variables self-concept and locus of control as well as as an extensive measure of the home environment. The third feature is the investigation of the differences among socioeconomic groups. The more immediate research hypotheses were:

1. It is predicted that there will be significant differences in reading comprehension due to socioeconomic status, in particular, with higher SES groups outperforming lower SES groups.
2. It is predicted that the internal variables of self-concept and locus of control will significantly predict reading comprehension, above that portion of reading ability accounted for by SES.
3. It is predicted that the home environment measures will significantly predict reading comprehension, above that portion of reading comprehension accounted for by SES, self-concept, and locus of control.
4. It is predicted that there will be a significant interaction between SES with self-concept, locus of control, and the measures of the home environment

CHAPTER III

METHOD

Subjects

The subjects for this study are from of the National Education Longitudinal Study of 1988 (NELS:88), collected by the U.S. Department of Education's National Center for Education Statistics (NCES), U.S. Department of Education. This study is a continuing long-term project whose general aim is to study the educational, vocational, and personal development of students at various grade levels, and the personal, familial, social, institutional, and cultural factors that may affect that development.

The coverage and response rates for students and parents were very high. For the student survey, 24,599 were selected and 93.4% responded (Ingels et al., 1989). The student population excluded 5.35% of the potential student sample. Those excluded were students with severe mental handicaps, students whose command of the English language was not sufficient for understanding the survey materials, and students with physical or emotional problems that would make it unduly difficult to participate in the survey. (Spencer, 1990). For the parents, 22,651 were selected, and 93.7% responded (Ingles et al., 1989). The breakdown of the approximately 20,000 participants by ethnicity was as follows: 68% White, 12% Black, 12% Hispanic, 6% Asian/Pacific Islanders, and 2% American Indian/Alaskan Native (Prindle & Rasinski, 1989).

Handwritten notes:
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The number of schools attended by American eighth graders is over 38,000. School enrollment ranges from 6 to 3,940 students. The sample included 1,201 schools from every state, including Alaska, Hawaii and the District of Columbia. Excluded from the sample were Bureau of Indian Affairs (BIA) schools, special education schools for the handicapped, area vocational schools that do not enroll students directly, and schools for dependents of U.S. personnel overseas (Spencer, 1990). The schools were 80% Public, 9% Catholic, 7% National Association of Independent Schools (NAIS) and 4% Other (Private). The NAIS schools are elite private schools which are primarily non-religious. The schools in the "other private" category are private schools that do not classify themselves as Catholic or independent. The majority of schools in this category are Lutheran, fundamentalist Christian academies, and Jewish schools. Overall, 73 percent of the students are enrolled in middle and junior high schools (grades 5-8, 6-8, 7-8 or 7-9). Fourteen percent are enrolled in K-12 schools, and 8 percent in 7-12 schools. The distribution was 25 percent urban schools, 44 percent suburban and 31 percent rural.

For this study, 13,932 parents and students answered all questions necessary for data analysis. The distribution across socioeconomic levels was divided into quartiles, with quartile 1 being the lowest, and quartile 4 being the highest. For the sample, 15% fell in quartile one; 22.3% in quartile two; 27.1% in quartile three; and 35.6% in quartile four.

Procedure for NELS data collection

The high levels of coverage and response rates were the result of several procedures that were built into the sampling and data collection stages. First, the school level sampling was designed to ensure that private schools, rural schools, and schools with high minority membership were adequately represented. A data base compiled by Quality Education Data, Inc. (QED) which included both public and private schools was used to design the sampling frame. The sampling frame was then sorted in such a way as to create groups of schools, called strata, that were ^{near, next - to each other} contiguous on the frame. Each stratum contained schools that were relatively similar in terms of certain variables deemed relevant to the survey's objectives (public/private, region, urbanicity, and percent minority) (Spencer, 1990).

The students were selected by a basic sampling procedure which resulted in up to 24 students per school being chosen. Oversamples of students with Hispanic and with Asian or Pacific Island heritage were drawn at the request of the Office of Bilingual Education and Minority Affairs (OBEMLA) to achieve a target of 2,200 additional students with these ethnic characteristics. First, three lists of eighth graders were obtained from each participating school, one of Asian students, one of Hispanic students, and one of all the other students. Second, random samples of Asian, Hispanics, and others were independently selected from each of the three lists (Spencer, 1990). Finally, to ensure high response rates, make-up survey days

were scheduled at school for students unable to be present at the original survey day.

For the parents, several procedures were used to collect surveys. Initially, each student was given a Parent Questionnaire to take home along with a letter requesting parent participation. The parent who was "best informed" about the child's educational activities was asked to complete the questionnaire. For the sample, the mother answered the questionnaire 78% of the time; the father, 17.5%; and 4% of the time, it was answered by someone other than the mother or father. The parents were instructed to send the completed questionnaire back to the school with their student or to mail it directly to NORC in the self-addressed stamped envelope.

Independent Variables

Socioeconomic Status

The socioeconomic status (SES) variable was constructed using the following parent questionnaire data: father's educational level, mother's educational level, father's occupation, mother's occupation, and family income. Student data were used to compute the SES for cases where all parent data components were missing (8.1% of the participants). SES was divided into quartiles, with one being the lowest and four being the highest (Hafner, 1990).

Self-Concept

The self-concept scale measures the student's general perceptions or sense of self (See Appendix A). The self-concept composite score is presented in tertiles and the percentage of students registering at a particular self-concept follow in parentheses: High self-concept (about 37%), medium self-concept (about 27%), and low self-concept (about 35%). The scale consists of seven items answered on a four point scale from strongly agree to strongly disagree. The scale was derived from the unidimensional Rosenberg self-esteem scale (Rosenberg, 1965) which consists of 10 items, designed specifically with brevity and ease of administration in mind. Research has shown a Guttman scale reproducibility coefficient of 0.92 and a test-retest correlation over two weeks of 0.95 (Silber & Tippet, 1965, cited in Robinson, 1973). Adequate convergent, discriminant and predictive validity have been established for the Rosenberg self-esteem scale. (Silber & Tippet, 1965; Tippet & Silver, 1965; Rosenberg, 1965; cited in Robinson, 1973). The seven item scale used in the NELS:88 study had a coefficient alpha of 0.74. Each of the items was standardized separately to a mean of zero and a standard deviation of one using the questionnaire completion weight.

Locus of Control

The locus of control scale was designed to be as comparable as possible with the two previous national studies done by the

Department of Education, the High School and Beyond (HS&B) and the National Longitudinal Study of 1972 (NLS-72). The six item locus of control scale measures the degree of control one feels over their life and the perception of what causes their success or failure (See Appendix A). The scale is unidimensional and dichotomized between internal and external control of reinforcement. Individuals characterized as having an internal perception are considered to view successes or failures as being a consequence of their own action and therefore under their control. Persons of the external perception are considered to view events as being unrelated to their own behavior, and consequently, beyond their control. Internally controlled individuals have been found to be more cognitively active in search and learning activities and children who perceive a lack of control eventually accept control by others as their fate and behave in such a manner as to cause external control to become a reality (Coleman et al., 1966) *in learning*

The scale is the average of the standardized scores of the questionnaire items of which it is composed. The three categories of locus of control with the approximate percentage of students in each are: high external (33%), neutral (neither high external nor high internal)(33%) and high internal (34%). The coefficient alpha for the locus of control scale was 0.58. Each of the items was standardized separately to a mean of zero and a standard deviation of one using the questionnaire completion weight.

Home Environment

A home environment measure was developed from a principal component factor analysis of the following questions selected from the parent questionnaire. The parent questionnaire consisted of 138 questions on the family background, child's school life, child's family life, opinions about child's school, eighth grader's future, and financial information and educational costs. Identification of the 41 questions utilized for analysis was considered from reviews of the literature on family factors, specifically parental behaviors, correlated with academic achievement. (Christenson, 1990; Dave, 1963; Marjoribanks, 1979a, 1979b; Scott-Jones, 1984; Seginer, 1983; White, 1982). Questions were answered by checking yes/no, or completing a Likert scale in one of the following 3 formats: (1) Not at all, Rarely, Occasionally, Regularly; (2) Usually, Sometimes, Rarely, Never; or (3) None, Once or Twice, Three or four times, More than four times. The questions from the NELS:88 parent questionnaire are described below:

Do you have a computer in your home that your child uses for educational purposes?

How often do you or your spouse/partner help your eighth grader with his or her homework?

Do you expect that your eighth grader will go on to additional education beyond high school?

How far in school do you expect your eighth grader to go?

Have you or your spouse/partner done anything specific in order to have some money for your eighth grader's education after high school?

Do you take part in any of the following activities?

Borrow books from the public library?

Attend concerts or other musical events?

Go to art museums?

Go to science museums?

Go to history museums?

Are there family rules for your eighth grader about any of the following television-related activities?

What programs he/she may watch?

How early or late he/she may watch

television?

How many hours he/she may watch television

overall?

How many hours he/she may watch television

on school days?

Have you or your spouse contacted the school about the following:

Fund raising activities?

Volunteer work?

Your child's academic performance?

Your child's academic program?

Your child's behavior?

Do you or your spouse do any of the following:

Belong to PTO?

Attend meetings of PTO?

Take part in activities of PTO?

Act as a volunteer at the school?

Parents differ in how much they talk to their children about what they do in school. How often do you or your spouse/partner talk with your eighth grader about his or her experiences in school?

Parents differ in how much they talk to their children about their plans for high school. How often do you or your spouse/partner talk with your eighth grader about his or her plans for high school?

How often do you or your spouse/partner talk with your eighth grader about his or her educational plans for after high school?

Are there family rules that are enforced for your eighth grader about any of the following activities?

Maintaining a certain grade average?

Doing homework?

Doing household chores?

Are any of the following people at home when your eighth grader returns home from school?

The mother?

The father?

Younger brother or sister?

No one is home.

Adult relative?

Sitter?

Adult neighbor?

Dependent Variable

Reading Comprehension

The reading achievement test consisted of five reading passages, ranging in length from a single paragraph to a half-page. Three to five multiple choice questions followed each passage, addressing the students' ability to reproduce details of the text, translate verbal statements into concepts (comprehension), or draw conclusions based on the material presented (inference/evaluation).

Twenty one minutes were allowed to answer 21 questions. Internal consistency was 0.84 based on coefficient alpha. Test reliabilities were consistent across race/ethnicity and sex. Standard scores were used for data analyses. (For more specific information about the content and format for the Reading Comprehension test, see Rock & Pollack, 1991. A confidential copy of the reading comprehension test is available for viewing by committee members and others with special permission.)

Data Analyses

A measure of the student's home environment was developed by initially selecting questions about parental behaviors that research had shown to be correlated to academic achievement. Cronbach alpha's were computed to establish reliability. The composite scores from the self-concept and locus of control scales, as well as the measures of the home environment were used as predictor variables, and the standard score for reading comprehension was used as the criterion variable. Hierarchical Linear Regression Analysis was utilized in addressing the research hypotheses stated below:

1. It is predicted that there will be significant differences in reading comprehension due to socioeconomic status, in particular, with higher SES groups outperforming lower SES groups.

2. It is predicted that the internal variables, self-concept and locus of control will significantly predict reading comprehension, above that portion of reading ability accounted for by SES.

3. It is predicted that the home environment measures will significantly predict reading comprehension, above that portion of reading comprehension accounted for by SES, self-concept, and locus of control.

4. It is predicted that there will be a significant interaction between SES with self-concept, locus of control, and the measures of the home environment

Descriptive statistics were computed for all variables. All statistical analyses were computed using the Statistical Analysis System (SAS; SAS Institute Inc., 1985).

CHAPTER IV

RESULTS

The organizational sequence for reporting the results of this investigation include: (1) descriptive statistics for the self-concept scale, locus of control scale, the home environment scales, and the reading comprehension achievement test; (2) the construction of the home environment scales including the frequency distribution of the initial questions, the factor analysis, and the Cronbach alpha coefficient of reliability; (3) correlational analysis of the home environment questions with reading comprehension scores; and (4) the hierarchical regression analysis addressing each of the research hypotheses.

Descriptive Statistics

Means and standard deviations were computed for the self-concept scale, the locus of control scale, the home environment scales, and the reading comprehension achievement subtest (See Table 1). The home environment scales produced mean values ranging from 6.66 to 10.48 with the standard deviations ranging from 1.40 to 2.41. The mean for the self-concept scale was .03 with a standard deviation of .66. The locus of control scale mean was .07 and the standard deviation was .60. For the reading comprehension test, the mean score was 52.62 with a standard deviation of 9.66.

Table 1

Means & Standard Deviations for Independent & Dependent Variables

Variable	Mean	Standard Deviation
Reading Comprehension	52.62	9.66
Locus of Control	.07	.60
Self-Concept	.03	.66
Parent Involvement in Cultural Activities	7.14	1.73
Family Rules	8.90	1.73
Parent-School Involvement	7.27	2.41
Parent-Teacher Involvement	6.66	1.40
Parent-Child Interaction	10.48	1.46

Zero-Order correlations among the variables are presented in Table 2. The correlations coefficients ranged from .01 to .54. Self-concept and locus of control had a moderate correlation of .54. None of the other correlations were large enough among the independent variables to present a problem with multicollinearity.

Home Environment Scale Construction

The initial analysis of the data was the construction of a valid and reliable measure of the home environment since the NELS:88 questions had no scales assessing the student's home environment. From the 108 questions measuring the home environment, 41 questions were utilized for analysis based on the review of the literature on family factors correlating with academic achievement, specifically parental behaviors.

Factor Analysis

Construct validity was established by subjecting the 41 selected home environment questions to a principal component factor analysis with varimax rotation to determine existing dimensions. Criteria for specifying acceptable factor structure included factors with minimum eigenvalues (>1.0). The analysis revealed 13 factors; however Factors 10, 11, and 12 were uninterpretable (See Table 3). Variables with factor loadings under .3 were deleted. Two items (Take part in parent-teacher organization activities, and Act as a

Table 3 (Continued) Principal Component Factor Analysis of the Home Environment Questions

	Factors												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Computer In Home Used for Educational Purposes									.64				
Child Comes Home Directly After School													.87
Mother Home When Child Returns from School								.70					
Father Home When Child Returns From School								.49					
Adult Relative Home When Child Returns From School									.64				
Sitter Home When Child Returns from School									.53				
Adult Neighbor Home When Child Returns From School									.65				
Older Sibling Home When Child Returns From School												.78	
Younger Sibling Home When Child Returns From School								.37				-.66	
No One is Home When Child Returns From School													

Table 3 (Continued) Principal Component Factor Analysis of the Home Environment Questions

	Factors												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Family Rule About How Early/Late Child may Watch TV		.61											
Family Rule About How Many Hours Child May Watch TV		.80											
Family Rule About How Many Hours Child May Watch TV on School Days		.83											
Family Rule About Maintaining Grade Average							.68						
Family Rule About Doing Homework							.76						
Family Rule About Doing Household Chores							.67						
How Often Does Parent Talk to Child About School Experiences						.61							
How Often Does Parent Talk to Child About High School Plans						.81							
How often Does Parent Help Child with Homework													-.32

Table 3 (Continued) Principal Component Factor Analysis of the Home Environment Questions

	Factors												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Take Part in Parent-Teacher Organization Activities			-.33		.70								
Act as a Volunteer at the School			-.59		.34								
Belong to Any Other Organization											-.44		
Parent Borrow Books from Public Library	.48												
Parent Attends Concerts/Other Musical Events	.50												
Parent Goes to Art Museums	.77												
Parent Goes to Science Museums	.82												
Parent Goes to History Museums	.83												
Parent Knows Parent(s) of Child's First Friend											.68		
Family Rule About Programs Child May Watch		.57											

Table 3

Principal Component Factor Analysis of the Home Environment Questions

	Factors*												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Contacted School About Academic Performance				.81									
Contacted School About Academic Program				.72									
Contact School About Behavior				.73									
Contacted School About Fund Raising			.76										
Contacted School About Information for School Records													
Contacted School About Doing Volunteer Work			.79										
Belong to Parent-Teacher Organization					.73								
Attend Parent-Teacher Organization Meetings					.80								

Table 2 (Continued) Zero Order Correlation Coefficients for All Variables

Variable	SES	LC	SC	PI	FR	P-S	P-T	P-C	Home	Comp	Exp	RC
	1	2	3	4	5	6	7	8	9	10	11	12
11. Parental Expectations for the Future	.36+	.20+	.14+	-.24+	.01+	.05+	-.19+	.17+	.02+	-.19+	1.00	.34+
12. Reading Comprehension	.35+	.27+	.11+	-.25	.10+	-.03+	-.14+	.05+	.06+	-.18+	.34+	1.00

+ P<.01

Table 2

Zero Order Correlation Coefficients for All Variables

Variable	SES	LC	SC	PI	FR	P-S	P-T	P-C	Home	Comp	Exp	RC
	1	2	3	4	5	6	7	8	9	10	11	12
1. SES	1.00	.17+	.08+	-.43+	.01	.15+	-.28+	.14+	.07+	-.29+	.36+	.35+
2. Locus of Control	.17+	1.00	.54+	-.14+	.01	-.01	-.10+	.10+	.01	-.09+	.20+	.27+
3. Self-Concept	.08+	.54+	1.00	-.08+	-.02+	.01	-.09+	.09+	-.03+	-.07+	.14+	.11+
4. Parent-Involvement Cultural Activities	-.43+	-.14+	-.08+	1.00	.12+	-.22+	.30+	-.24+	-.03+	.23+	-.24+	-.25+
5. Family Rules	.01	.01	-.02+	.12+	1.00	-.17+	.12+	-.24+	.09+	.02+	.01	.10+
6. Parent-School Involvement	.15+	-.01	.01	-.22+	-.17+	1.00	-.36+	.18+	-.03+	-.08+	.05+	-.03+
7. Parent-Teacher Involvement	-.28+	-.10+	-.09+	.30+	.12+	-.36+	1.00	-.18+	.07+	.17+	-.19+	-.14+
8. Parent-Child Interaction	.14+	.10+	.09+	-.24+	-.24+	.18+	-.18+	1.00	-.04+	-.09+	-.17+	.05+
9. Someone Home When Child Returns from School	.07+	.01	-.03+	-.03+	.08+	-.03+	.08+	-.04+	1.00	.01	.02+	.06+
10. Computer in Home	-.29+	-.09+	-.07+	.23+	.02+	-.08+	.17+	-.09+	.01	1.00	-.19+	-.18+

Table 3 (Continued) Principal Component Factor Analysis of the Home Environment Questions

	Factors												
	1	2	3	4	5	6	7	8	9	10	11	12	13
How Satisfied is the Parent With Education the Child Has Received													
Saved Any Money for Child's Education After High School									.60				
How Far In School Does Parent Expect Child to Go									-.57				

*Factor 1: Parent Involvement in Cultural Activities

Factor 2: Family T.V. Rules

Factor 3: Parent-School Involvement

Factor 4: Parent Concern with Child's School Performance

Factor 5: Parent-Teacher Involvement

Factor 6: Parent-Child Interaction

Factor 7: Family Rules

Factor 8: Parent/Sibling Home When Child Returns from School

Factor 9: Expectations/Provisions for Future Education

Factor 10: Relative/Neighbor/Sitter Home When Child Returns from School

Factor 11: Uninterpretable

Factor 12: Uninterpretable

Factor 13: Uninterpretable

volunteer at the school) loaded at .30 or higher on Factor 3 and on Factor 5. Logically, these questions were a better fit with Factor 5 and thus were deleted from Factor 3. The resulting structure revealed the following dimensions and the subset of questions. (Frequencies are discussed in general for each subset of questions. For more specific information, see Table 4).

Factor 1. Parent Involvement in Cultural Activities

Do you take part in any of the following activities?

Borrow books from the public library?

Attend concerts or other musical events?

Go to art museum?

Go to science museum?

Go to history museums?

A majority of the parents borrowed books from the public library (70%) and attended concerts or other musical events (68%); attendance at art, science and history museums was split nearly in half (43%, 51%, and 52%).

Factor 2. Family Television Rules

Are there family rules for your eighth grader about any of the following television-related activities?

What programs he/she may watch?

How early or late he/she may watch television?

Table 4

Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
Contacted School About Academic Performance	1-None	6306	45.3
	2-Once or Twice	5216	37.4
	3-Three or Four Times	1565	11.2
	4-More than Four Times	845	6.1
Contacted School About Academic Program	1-None	8870	63.7
	2-Once or Twice	4236	30.4
	3-Three or Four Times	545	3.9
	4-More than Four Times	281	2.0
Contacted School About Behavior	1-None	10183	73.1
	2-Once or Twice	2770	19.9
	3-Three or Four Times	548	3.9
	4-More than Four Times	431	3.1
Contacted School About Fund Raising	1-None	10553	75.7
	2-Once or Twice	2525	18.1
	3-Three or Four Times	467	3.4
	4-More than Four Times	387	2.8

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
Contacted School About Information for School Records	1-None	8189	58.8
	2-Once or Twice	5469	39.3
	3-Three or Four Times	192	1.4
	4-More than Four Times	82	0.6
Contacted School About Doing Volunteer Work	1-None	10577	75.9
	2-Once or Twice	2386	17.1
	3-Three or Four Times	432	3.1
	4-More than Four Times	537	3.9
Belong to Parent-Teacher Organization	1-Yes	5406	38.8
	2-No	8526	61.2
Attend Parent-Teacher Organization Meetings	1-Yes	5623	40.4
	2-No	8309	59.6
Take Part in Parent-Teacher Organizational Activities	1-Yes	4338	31.1
	2-No	9594	68.9
Act as a Volunteer at the School	1-Yes	3314	23.8
	2-No	10618	76.2
Belong to Any Other Organization	1-Yes	4025	28.9
	2-No	9907	71.1

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
Borrows Books From Public Library	1-Yes 2-No	9771 4161	70.1 29.9
Attends Concerts/Other Musical Events	1-Yes 2-No	9516 4416	68.3 31.7
Parent Goes to Art Museums	1-Yes 2-No	6013 7919	43.2 56.8
Parent Goes to Science Museums	1-Yes 2-No	7146 6786	51.3 48.7
Parent Goes to History Museums	1-Yes 2-No	7330 6602	52.6 47.4
Parent Knows Parent(s) of Child's First Friend	1-Yes 2-No	11854 2078	85.1 14.9
Family Rule About Programs Child May Watch	1-Yes 2-No	9703 4229	69.6 30.4
Family Rule About How Early/Late Child May Watch TV	1-Yes 2-No	11832 2100	84.9 15.1

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
Family Rule About How Many Hours Child May Watch TV	1-Yes	5979	42.9
	2-No	7953	57.1
Family Rule About How Many Hours Child May Watch TV on School Days	1-Yes	8602	61.7
	2-No	5330	38.3
Family Rule About Maintaining Grade Average	1-Yes	9835	70.6
	2-No	4097	29.4
Family Rule About Doing Homework	1-Yes	12710	91.2
	2-No	1222	8.8
Family Rule About Doing Household Chores	1-Yes	12342	88.6
	2-No	1590	11.4
How Often Does Parent Talk to Child About School Experiences	1-Not at all	49	0.4
	2-Rarely	206	1.5
	3-Occasionally	2073	14.9
	4-Regularly	11604	83.3
How Often Does Parent Talk to Child About High School Plans	1-Not at all	177	1.3
	2-Rarely	884	6.3
	3-Occasionally	5973	42.9
	4-Regularly	6898	49.5

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
How Often Does Parent Talk to Child About Post High School Plans	1-Not at all	277	2.0
	2-Rarely	1260	9.0
	3-Occasionally	6877	49.4
	4-Regularly	5518	39.6
How often Does Parent Help Child with Homework	1-Not at all	3919	28.1
	2-Rarely	4079	29.3
	3-Occasionally	4571	32.8
	4-Regularly	1363	9.8
Computer in Home Used for Educational Purposes	1-Yes	4318	31.0
	2-No	9614	69.0
Child Comes Home Directly After School	1-Yes	12179	87.4
	2-No	1753	12.6
Mother Home When Child Returns from School	1-Usually	8007	57.5
	2-Sometimes	2089	15.0
	3-Rarely	1919	13.8
	4-Never	1917	13.8
Father Home When Child Returns from School	1-Usually	2114	15.2
	2-Sometimes	3180	22.8
	3-Rarely	3875	27.8
	4-Never	4763	34.2

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
Adult Relative Home When Child Returns From School	1-Usually	1169	8.4
	2-Sometimes	1073	7.7
	3-Rarely	1784	12.8
	4-Never	9906	71.1
Sitter Home When Child Returns from School	1-Usually	233	1.7
	2-Sometimes	168	1.2
	3-Rarely	346	2.5
	4-Never	13185	94.6
Adult Neighbor Home When Child Returns from School	1-Usually	585	4.2
	2-Sometimes	469	3.4
	3-Rarely	732	5.3
	4-Never	12146	87.2
Older Sibling Home When Child Returns from School	1-Usually	3040	21.8
	2-Sometimes	2230	16.0
	3-Rarely	868	6.2
	4-Never	7794	55.9
Younger Sibling Home When Child Returns from School	1-Usually	5315	38.1
	2-Sometimes	713	5.1
	3-Rarely	418	3.0
	4-Never	7486	53.7

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

		Frequency	Percent
No One is Home When Child Returns from School	1-Usually	5682	40.8
	2-Sometimes	4902	35.2
	3-Rarely	1938	13.9
	4-Never	1410	10.1
How Satisfied Are You With the Education Your Child has Received	1-Very Satisfied	7347	52.7
	2-Somewhat Satisfied	13364	43.2
	3-Not Satisfied at All	13932	4.1
How Far in School Does Parent Expect Child to Go	1-< than H.S. Diploma	7	0.1
	2-GED	7	0.1
	3-H.S. Graduation	706	5.1
	4-Vocational, trade, business School	71	0.5
	(<1 yr.)		
	5-Vocational, trade, business school	502	3.6
	(1-2 yrs)		
	6-Vocational, trade, business school	446	3.2
	(>2 yrs.)		
	7-College Program	478	3.4
	(<2 yrs)		
	8-College Program	1255	9.0
	(>2 yrs)		
9-Finish 2 yr Program		652	4.7
	10-Finish 4 or 5 yr Program	6183	44.4

Table 4 (Continued) Frequencies and Percentages of Parent's Responses to the Home Environment Questions

	Frequency Percent	
Saved any Money for Child's Education After H.S.	11-Master's Degree or Equivalent	1855 13.3
	12-Ph.D., M.D., or other Advanced Degree	1770 12.7
	1-Yes	7122 51.1
	2-No	6488 46.6
	3-Don't Know	322 2.3

How many hours he/she may watch television
overall?

How many hours he/she may watch television
on school days?

On this factor, the majority of parents have rules about the programs the child may watch (70%), and rules about how early/late the child may watch TV (85%); however parents appear less stringent about the number of hours the child may watch TV on school days (61%), as well as a general rule about how many hours the child may watch TV (43%)

Factor 3. Parent-School Involvement

Have you or your spouse contacted the school about the following:

Fund-raising activities?

School records?

Volunteer work?

The majority of parents have never contacted the school about fund-raising activities (76%), about information for school records (59%), or about doing volunteer work (76%).

Factor 4. Parent Concern with Child's School Performance

Have you or your spouse contacted the school about the following:

Your child's academic performance?

Your child's academic program?

Your child's behavior?

A majority of parents have contacted the school about their child's academic performance at least once (55%), only 36% have contacted the school about their child's academic program, and even fewer have contacted the school about their child's behavior (27%).

Factor 5. Parent-Teacher Involvement

Do you or your spouse do any of the following:

Belong to PTO?

Attend meetings of PTO?

Take part in activities of PTO?

Act as a volunteer at the school?

The majority of parents have never been involved in their child's Parent-Teacher Organization (PTO); that is, they have not joined the PTO (61%), attended PTO meetings (60%), or participated in PTO activities (69%). Seventy-six percent have never volunteered at their child's school.

Factor 6. Parent-Child Interaction

Parents differ in how much they talk to their children about what they do in school. How often do you or your spouse/partner talk with your eighth grader about his or her experiences in school?

Parents differ in how much they talk to their children about their plans for high school. How often do you or your spouse/partner talk with your eighth grader about his or her plans for high school?

How often do you or your spouse/partner talk with your eighth grader about his or her educational plans for after high school?

The majority of parents regularly talk to their child about their school experiences (83%), as well as their High School plans (50%). Less frequently, however, do parents talk about their child's post High School plans (40%).

Factor 7. Family Rules

Are there family rules that are enforced for your eighth grader about any of the following activities?

Maintaining a certain grade average?

Doing homework?

Doing household chores?

Most parents have family rules about grade average (71%), doing homework (91%), and household chores (89%).

Factor 8. Parent/Sibling Home When Child Returns From School

Are any of the following people at home when your eighth grader returns home from school?

The mother?

The father?

Younger brother or sister?

No one is home.

Forty-one percent of the children in this sample usually come home to an empty house. If someone is home, 58% of the time it is the mother. Only 15% of fathers and 38% of younger siblings are home when the child returns from school.

Factor 9. Expectation/Provisions for Child's Future Education

How far in school do you expect your eighth grader to go?

Less than high school diploma

GED

High school graduation

Vocational, trade, or business school after high school

Less than one year

One to two years

Two years or more

College Program

Less than two years of college

Two or more years of college

Finish a two-year program

Finish a four or five-year program

Master's degree or equivalent

Ph.D., M.D., or other advanced degree

The majority of parents expected their children to finish a four or five year program (41.3%) and approximately 39% expected their child to either graduate from high school, get a Master's degree or other advanced degree(Ph.D. or M.D.).

Factor 10. Relative/Neighbor/Sitter Home When Child Returns From School

Are any of the following people at home when your eighth grader returns home from school?

Adult relative?

Sitter?

Adult neighbor?

Very seldom is an adult relative (8%), sitter (2%), or adult neighbor (4%) home when the child returns from school.

Scale Reliabilities

To establish internal consistency for the factors as scales, Cronbach alpha's were computed on all questions comprising the 10 dimensions of the home environment with the exception of Factor 9 (Expectations/Provisions for Future Education). This factor was not

analyzed because of the mix of answers in dichotomous and Likert scale formats (See Table 5). The .60 level of minimum acceptability for experimental research was adopted as suggested by Salvia and Ysseldyke (1988). Alphas for the scales were .76 (Factor 1: Parent Involvement in Cultural Activities), .71 (Factor 2: Family T.V. Rules), .61 (Factor 3: Parent-School Involvement), .71 (Factor 4: Parent-School Contact), .74 (Factor 5: Parent-Teacher Interaction), .70 (Factor 6: Parent-Child Interaction), .52 (Factor 7: Family Rules), .45 (Factor 8: Parent/Sibling Home When Child Returns From School), and .23 (Factor 10: Relative/Neighbor/Sitter Home When Child Returns From School). The correlational analysis provided positive evidence of reliability for the first six factors.

Cronbach alpha's were also computed on the following logical combinations of factors; reliability coefficients are in parentheses: Factors 2 and 7 (.69); Factors 8 and 10 (.40); and Factors 3 and 4 (.69). The combination of Factors 3 and 4 as well as Factors 2 and 7 resulted in factor loadings high enough to justify a change in the original dimensions. Consequently, Factors 3 and 4 were combined to make up Scale 3 and was renamed Parent-School Involvement. Scale 2 was changed to Family Rules and was comprised of Factors 2 and 7. Thus following, only 5 scales were used in subsequent analysis:

Scale 1: Parent Involvement in Cultural Activities

Scale 2: Family Rules

Table 5

Cronbach Alpha's for the Factors of the Home Environment

Scales	Cronbach's Alpha
Parent Involvement in Cultural Activities	.76
Family T.V. Rules	.71
Parent/School Involvement	.61
Parent Concern with Child's School	.71
Parent Involvement with School-Related Activities	.74
Parent-Child Interaction	.70
Family Rules	.52
Parent/Sibling Home When Child Returns	.45
Expectations/Provisions for Future	*
Relative/Neighbor/Sitter Home When Child Returns From School	.23

* Was not computed due to mix of dichotomous & Likert scale formats

- Scale 3: Parent-School Involvement
Scale 4: Parent-Teacher Involvement
Scale 5: Parent-Child Interaction

Correlation of Home Environment Questions with Reading Comprehension

The individual questions from the five home environment scales were correlated with the child's standard score in reading comprehension (See Table 6). In addition, individual questions from Factors 9 through 13 were correlated with reading comprehension scores to determine if their correlation was high enough to substantiate their inclusion in the regression analysis as individual questions. The majority of the questions yielded low but statistically significant correlations with reading comprehension. The question "How far in school do you expect your child to go?" yielded the highest correlation of all of the home environment questions ($r=.34$). Also having one of the highest correlations with reading comprehension was "Do you have a computer in the home for educational purposes?" ($r=-.18$). These questions were included as representative of Factor 9: Parental Expectations for the Future. Although statistically significant, a low correlation was found for the question "How often is no one home when your child returns from school?" The rationale for including this question in spite of its low correlation was it was representative of Factors 8 and 10 which both dealt with who was home when the child returned from school.

Table 6

Pearson Correlation Coefficients of the Home Environment Questions with Reading Comprehension

Home Environment Questions	Reading Comprehension
Parent Involvement in Cultural Activities	
Parent Borrows Books from Public Library	-.16**
Parent Attends Concerts/Other Musical Events	-.17**
Parent Goes to Art Museums	-.17**
Parent Goes to Science Museums	-.20**
Parent Goes to History Museums	-.18**
Family Rules	
Family Rule About Programs Child May Watch	.01
Family Rule About How Early/Late Child May Watch TV	.01
Family Rule About How Many Hours Child May Watch TV	.02*
Family Rule About How Many Hours Child May Watch TV on School Days	.08*
Family Rule About Maintaining Grade Average	.14*
Family Rule About Doing Homework	.11*
Family Rule About Doing Household Chores	.08*
Parent-School Involvement	
Contacted School About Academic Performance	-.08**
Contacted School About Academic Program	-.03**
Contact School About Behavior	-.17**
Contacted School About Fund Raising	.07*
Contacted School About Doing Volunteer Work	.12*

Table 6 (Continued) Pearson Correlation Coefficients of the Home Environment Questions with Reading Comprehension

Home Environment Questions	Reading Comprehension
Parent-Teacher Involvement	
Belong to Parent-Teacher Organization	-.15**
Attend Parent-Teacher Organization Meetings	-.04**
Take Part in Parent-Teacher Organization Activities	-.11**
Act as a Volunteer at the School	-.11**
Parent-Child Interaction	
How Often Does Parent Talk to Child About School Experiences	.07*
How Often Does Parent talk to Child About High School Plans	.02*
How Often Does Parent Talk to Child About Post High School Plans	.03*
Additional Questions	
Mother Home When Child Returns from School	-.01+
Father Home When Child Returns from School	.03*
Adult Relative Home when Child Returns From School	.08*
Sitter Home when Child Returns from School	-.01+
Adult Neighbor Home when Child Returns from School	.08*
Younger Sibling Home When Child Returns From School	-.01+
No One is Home When Child Returns From School	.06*
Computer In Home Used for Educational Purposes	-.18**

Table 6 (Continued) Pearson Correlation Coefficients of the Home Environment Questions with Reading Comprehension

Home Environment Questions	Reading Comprehension
Additional Questions (Continued)	
Saved Any Money for Child's Education After High School	-.14+
How Far in School Does Parent Expect Child to Go	.34*

+ all correlations representing a positive relationship between the home environment questions and reading comprehension

* $p < .01$

Parent involvement in cultural activities was significantly negatively correlated with the child's reading comprehension score. That is, parent's participation in cultural events such as borrowing books from the library, attending concerts/other musical events, and going to art, science, or history museums tended to be associated with higher reading comprehension scores for the child.

There existed a statistically significant positive correlation between the following rules and the child's reading comprehension score: how many hours the child may watch TV, how many hours the child may watch TV on school days, maintaining a certain grade average, doing homework, and doing household chores. There existed no correlation between a family rule about programs child may watch, and a family rule about how early/late child may watch TV and the child's reading comprehension score.

There were both positive and negative correlations among the questions on concerning parent contact with the school. Higher reading comprehension scores were correlated with parent contact with school about fund-raising or volunteer work. On the other hand, lower reading comprehension were correlated with parent contact with school about child's academic performance, academic program, or behavior.

How often the parent talks to the child about school experiences, high school plans, and post high school plans as well as parent's belonging, attending, and participating in the Parent-

Teacher-Organization tends to be associated with higher reading comprehension scores.

Correlation of Independent Variables to Reading Comprehension

A Pearson Product Moment Correlation Coefficient was calculated between the independent variables (SES, self-concept, locus of control, and the home environment measures) and the dependent variable, reading comprehension. Correlations ranged from $-.03$ to $.35$; all correlations were statistically significant at $p < .01$ (See Table 7). The percentage of overlapping variance uniquely explained by each variable was as follows: SES, 12.60%; locus of control, 7.53%; self-concept, 1.21%; parent involvement in outside activities, 6.06%; family rules, 1.05%; parent-school involvement 0.10%; parent-teacher involvement, 1.90%; parent-child involvement, 0.25%; child home alone, 0.31%; computer in home, 3.35%; parental expectations, 11.66% (See Table 7). SES, locus of control, and the individual question regarding parental expectations accounted for the most variance in reading comprehension, while the parent-school involvement scale, the parent-child interaction scale, and the individual question concerning whether or not someone was home when the child returned from school contributed minimal variance.

Table 7

Correlations of Independent Variables with Reading Comprehension

Variable	Correlation With Reading Comprehension	Unique R ²
SES	.35	12.60%
Locus of Control	.27	7.53%
Self-Concept	.11	1.21%
Parent Involvement Cultural Activities	-.25	6.06%
Family Rules	.10	1.05%
Parent-School Interaction	-.03	.10%
Parent-Teacher Interaction	-.14	1.90%
Parent-Child Interaction	.05	.25%
Someone Home When Child Returns	.06	.31%
Computer in the Home	-.18	3.35%
Parental Expectations	.34	11.66%

Note: $p < .01$ on all Variables

Regression Analysis

To address the research hypotheses for this study, a hierarchical regression analysis was used to compute the coefficient of determination for each equation. Predictor variables included SES, self-concept, locus of control, and the measures of the home environment. The research hypotheses were as follows:

1. It is predicted that there will be significant differences in reading comprehension due to socioeconomic status, in particular, with higher SES groups outperforming lower SES groups.
2. It is predicted that the internal variables of self-concept and locus of control will significantly predict reading comprehension, above that portion of reading comprehension accounted for by SES.
3. It is predicted that the home environment measures will significantly predict reading comprehension, above that portion of reading comprehension accounted for by SES, self-concept, and locus of control.

4. It is predicted that there will be a significant interaction between SES with self-concept, locus of control, and the measures of the home environment.

Research Hypothesis 1

The first predictor variable entered into the regression equation was SES. The analysis of the data showed $R^2 = .126$, $p < .0001$. That is, the portion of the variance in reading achievement that is associated with SES was approximately 13%. The regression equation for predicting reading comprehension scores from SES is:

$$Y = 43.52 + 3.21(X_1).$$

Y = Reading Comprehension

X_1 = SES Quartile (one-lowest; four-highest)

As shown in Table 8, the mean reading comprehension score for students in quartile one was 46.95; quartile two, 50.22; quartile three, 52.32; and quartile four, 56.70. The results of Sheffe's post-hoc test showed that the differences among SES groups were significant at $p < .0001$. That is, students from quartile 4 have significantly higher reading comprehension scores than quartile 3 and quartile 2; quartile 3 has significantly higher reading comprehension scores than quartile 2 and quartile 1; and quartile 2 has significantly higher reading comprehension scores than quartile 1.

Table 8

Means for SES Quartiles

Variable	Mean
Quartile 1 (low)	45.95
Quartile 2	50.22
Quartile 3	52.32
Quartile 4 (high)	56.70

Note: $p < .0001$

Research Hypothesis 2

The second research hypothesis predicted that the addition of the internal variables of self-concept and locus of control would contribute a greater amount of variance in reading comprehension than did SES alone. When these predictor variables were entered into the regression equation, the equation became more efficient, with an R^2 of 0.174, $p < .0001$, or approximately 17% of the variance in reading achievement (See Table 9). Thus, the addition of the internal variables of self-concept and locus of control explained an additional 5% of the variance in reading comprehension. Of these two variables, locus of control contributed a greater portion of the squared partial variance in reading comprehension than did self-concept (4.9% versus 0.22%).

Research Hypothesis 3

The third hypothesis predicted that by adding the eight measures of the home environment, a greater portion of the variance in reading comprehension would be accounted for than in research hypothesis 2. Analysis of results show that the regression equation became more efficient ($R^2 = 0.24$, $p < .0001$) predicting approximately 24% of the variance in reading comprehension (See Table 10). The addition of the home environment measures accounted for a 7% increase in reading comprehension over that of SES,

Table 9

Standardized Beta Weights, T-Values, Probabilities, and Squared Partial for Research Question 2

Variable	Standardized Beta Weight	T	Probability	Squared Partial
SES	.36	39.75	.001	10.51%
Locus of Control	.25	26.42	.001	4.94%
Self-Concept	-.05	- 5.415	.001	.22%

$R^2 = .174$

Table 10

Standardized Beta Weights, T-values, Probabilities, and Squared Partial for Research Question 3.

Variable	Standardized Beta Weight	T	Probability	Squared Partial
SES	.20	21.66	.0001	3.37%
Locus of Control	.21	22.85	.0001	3.74%
Self-Concept	-.06	- 6.30	.0001	.29%
Parent Involvement Cultural Activities	-.10	-11.61	.0001	.10%
Family Rules	.09	11.64	.0001	.10%
Parent-School Involvement	-.09	-10.61	.0001	.83%
Parent-Teacher Involvement	-.04	- 4.46	.0001	.15%
Parent-Child Involvement	-.03	- 3.37	.0008	.08%
Someone Home When Child Returns from School	.02	2.75	.0060	.06%
Computer in the Home	-.05	- 6.87	.0001	.35%

Table 10 (Continued) Standardized Beta Weights, T-values, Probabilities, and Squared Partial for Research Question 3.

Variable	Standardized Beta Weight	T	Probability	Squared Partial
Parental Expectations for the Future	.20	24.28	.0001	4.20%
$R^2 = .241$				

self-concept, and locus of control. Thus, the external home environment measures appear to contribute slightly more to the variance in reading comprehension than do the internal variables of self-concept and locus of control. Of the home environment measures, the individual question "How far in school do you expect your child to go?" and the Parent-School Involvement scale contributed the most squared partial variance to reading comprehension. The question "How often is no one home when your child returns from school?" and the Parent-Child Interaction scale contributed the least squared partial variance.

Research Hypothesis 4

The third equation predicted that there would be significant interaction effects of SES among the independent variables. When the interaction effects of all of the variables were entered into the regression equation, the coefficient of determination, (R^2), was .246, and was not statistically significant (See Table 11). This suggests that the amount of variance predicted by self-concept, locus of control, and the home environment measures does not differ among socioeconomic levels.

Table 11

Standardized Beta Weights, T-Values, & Probabilities for
Research Question 4.

Variable	Standardized Beta Weight	T	Probability
SES	.05	.48	.6348
Locus of Control	.27	10.94	.0001
Self-Concept	-.08	-3.35	.0008
Parent-Involvement Cultural Activities	-.10	-4.11	.0001
Family Rules	.11	4.82	.0001
Parent-School Involvement	-.08	-3.14	.0007
Parent-Teacher Involvement	.00	.10	.9239
Parent-Child Interaction	-.01	-.41	.6833
Someone Home When Child Returns from School	.05	2.08	.0372
Computer in the Home	-.06	-2.43	.0153
Parental Expectations for the Future	.04	1.95	.0511
SES x Locus of Control	-.07	-2.82	.0048
SES x Self-Concept	.03	1.17	.2425
SES x Parent Involvement Cultural Activities	.00	-.03	.9745
SES X Family Rules	-.04	-.83	.4053
SES x Parent-School Involvement	-.02	-.43	.6702

Table 11 (Continued) Standardized Beta Weights, T-Values, & Probabilities for Research Question 4.

Variable	Standardized Beta Weight	T	Probability
SES x Parent-Teacher Involvement	-.07	-1.43	.1539
SES x Parent-Child Involvement	-.06	-.94	.3497
SES x Someone Home	-.03	-1.18	.2391
SES x Computer in Home	.02	.55	.5838
SES x Parental Expectations	.40	8.77	.0001

CHAPTER V

DISCUSSION

The purpose of this study was twofold: to develop a reliable and valid measure of the home process variables using the NELS:88 data and to determine the contribution of SES, interpersonal variables (self-concept and locus-of-control) and the home environment measures in predicting reading achievement. The discussion will focus on the findings from each research hypothesis and how these findings relate to previous research, limitations of this study, implications for educators and parents, and recommendations for future research.

Relationship to Previous Research

SES and Academic Achievement

Research Hypothesis 1 found the correlation of SES to timed reading comprehension to be moderate ($r=.35$), and that higher SES groups outperform lower SES groups on reading comprehension. Like other studies (Bloom, 1981; Iverson & Walberg, 1982; Song, 1982; Walberg, 1979; White, 1982), SES was found to have a moderate correlation to academic achievement. Previous studies found a typical correlation between SES indices and children's school achievement to range from .25 to .30 which was consistent with the results from this study. Research has substantiated that

socioeconomic status (SES) is the most powerful family characteristic that predicts academic performance, regardless of the measure of status used. Contrary to the finding by Coleman et al. (1966) that socioeconomic differences have less overall effect on standard measures of achievement during adolescence, the results of this study suggest that SES continues to be an important factor in reading comprehension during adolescence. The results are also consistent with previous research that has shown children in lower SES settings perform academically below those from middle-class settings (Battle & Rotter, 1963; Coleman et al., 1966; Crandall, Katvosky, & Crandall, 1965; Nowicki & Strickland, 1973).

Internal Variables and Academic Achievement

Results from research hypothesis 2 supported the prediction that the addition of self-concept and locus of control would significantly increase the portion of variance accounted for in reading comprehension than was accounted for by SES. Self-concept has been substantiated as a primary motivational predictor of achievement (Bandura, 1977; Bolles, 1978; Cattell, 1975; Coleman et al., 1966; Johnson, 1974; Maer 1978; and Smith, 1978; cited in Uguroglu & Walberg, 1986). Previous quantitative syntheses and meta-analyses have found correlations ranging from .18 to .50, with academic self-concept having higher correlations than general self-concept. The results from this study found a low correlation of .11 between general self-concept and reading comprehension which is

somewhat lower than previous research on general self-concept. A possible explanation for this difference may result from the moderate correlation between the self-concept and locus of control scales ($r=.54$). This suggests that these scales may be measuring similar constructs.

Consistent results with previous research were found between locus of control and timed reading comprehension ($r=.27$). Previous research has substantiated an average correlation of approximately .32 between locus of control and achievement (Bar-Tal & Bar-Zohar, 1977; Bridgeman & Shipman, 1978; Coleman et al., 1966; Crandall et al., 1962; Kifer, 1975; Stipek & Weisz 1981; Uguroglu & Walberg 1979). Although locus of control as an individual predictor was found to account for the most variance in reading comprehension with the exception of SES, the results from this study are not as definitive as Coleman's et al. (1966) strong conclusions stated below about self-concept and locus of control:

1. A person's sense of control over the environment is more strongly related to academic achievement than any other variable.
2. Self-concept and locus of control affect school achievement far more than family background or school characteristics (p. 66).

The findings from this study suggested that each of the predictor variables, SES, self-concept, locus of control, and the measures of home environment contributed moderately to the variance in reading comprehension.

Home Environment and Academic Achievement

The initial step in analyzing the home environment was to design a valid and reliable measure of the home environment using the NELS:88 data. Factor analyses of the questions from the parent questionnaire yielded five factors in the home environment that were similar to the previously reported dimensions documented to be related to academic achievement.

The first scale, Parent Involvement in Cultural Activities, found that parent attendance at concerts, art, science, and history museums as well as borrowing books from the library was associated with higher reading comprehension scores for their child. Previous research (Bloom, 1984; Clark 1987; Christenson, 1990; Dave, 1963; Dolan, 1983; Henderson, 1972; Onocha & Okpala, 1986; Marjoribanks, 1978; Thompson 1985; Walberg 1984; and Wolf, 1964) has found similar results between parental activities and the child's academic achievement.

Family Rules, Scale 2, measured whether or not the parents had rules concerning television, grade point average, homework and household chores. This is consistent with previous research documenting the positive effects of clearly understood and

consistently enforced household rules, work and homework practices, the degree of routine in home management, and the emphasis on regularity in the daily schedule (Bloom, 1984; Clark 1987; Christenson, 1990; Dave, 1963; Henderson, 1972; Walberg, 1984; and Wolf, 1964).

Scale 3 and Scale 4 reflect parent involvement with the school and with the teacher. Research on the parental behaviors in the home environment related to children's achievement has substantiated the various aspects of parental involvement in educational activities (Bloom, 1984; Clark 1987; Christenson, 1990; Dave, 1963; Dolan, 1983; Henderson, 1972; Onocha & Okpala, 1986; Marjoribanks, 1978; Thompson 1985; Walberg 1984; and Wolf, 1964). For example, the "Chicago school" of research found the Achievement press (the parents' aspirations for the child and their interest in, knowledge of, and standards of the child's educational achievement) was one of six presses that fostered intellectual growth. Subsequent assessment instruments based on the "Chicago school" research included factors and dimensions such as Knowledge of Child's Educational Progress (Marjoribanks, 1978); Behavioral Resources (as measured by parents' involvement in school-related activities) (Reynolds & Lee, 1991); and Valuing Education, Support Academics, and Support School (Christenson, 1991).

As Henderson (1987) states in the report of the National Committee for Citizens in Education:

The evidence is in. Programs designed with strong parent involvement produce students who perform better than others in identical programs that do not involve parents as thoroughly. Children whose parents help them at home and stay in touch with the school score higher than children of similar aptitudes and family background whose parents are not involved. Schools where children are failing improve dramatically when parents are called in to help.

Parent-Child Interaction, Soale 5, is consistent with previous literature documenting the positive effects of parent-child interaction on academic achievement. For example, opportunities for and quality of the interaction between parent and child was one of four dimensions on the Home Educational Environment Index (HEE) developed by Dolan (1980). This method yielded correlations of .50 with the children's school achievement. Another study by Reynolds and Lee (1991) found that Communication-Interaction was one of two major dimensions of the family. This dimension measured parent's communication with their child about homework, school success, etc.

In addition to the five Soales used to measure home environment, three individual questions were used as additional measures of the home environment. The first question was "How far in school do you expect your child to go?" Parental expectations for the future has been found by researchers to be a significant predictor of academic achievement (Bloom, 1984; Clark 1987; Christenson, 1990; Dave, 1963; Dolan, 1983; Henderson, 1972; Onooha & Okpala, 1986; Marjoribanks, 1978; Thompson 1985; Walberg 1984; and Wolf, 1964). The second question concerned the availability of a computer in the home. This is also consistent with previous research (Dave, 1963; Dolan, 1980; Marjoribanks, 1978; Reynolds &

Lee, 1991; Wolf, 1964) documenting the positive effects of the availability of academic guidance, resources, and parental support of academic activities.

After the factor analysis identified the 8 dimensions of the home environment, they were entered into the regression equation for research hypothesis 3. Analysis of the results substantiated that the measures of the home environment predicted a greater portion of the variance in reading comprehension than did SES and the internal variables of self-concept and locus of control.

There exists a plethora of research substantiating that the relationship between family process variables and achievement are much higher than sociological indices (Bradley & Caldwell, 1984; Bloom, 1964; Coleman et al., 1966; Dave, 1963; Dolan, 1980; Fraser, Welch & Walberg, 1986; Henderson, 1981; Iverson & Walberg, 1982; Laosa, 1982; Marjoribanks, 1979a, 1979b, 1987; Onocha & Okpala, 1986; Reynolds & Lee, 1991; Seginer, 1983; Song, 1982; Song & Hattie, 1984; Thompson, 1985; Uguroglu, 1986; Wang, et al., 1990; Wolf, 1964). In the present study, the measures of the home environment were important contributors to the variance in reading comprehension, but the results are more consistent with the literature by Eagle (1989) and Marjoribanks (1982) which suggests that the effects of SES are greater on academic achievement than are measures of the home environment. The differences in the findings may be attributed to the measurement of the home environment process variables. A self-report questionnaire was used in this study

versus the direct observation technique used in many previous studies. Those studies that utilized direct observation techniques tended to have higher correlations between the home environment process variables and academic achievement. Another possibility is that the effect of socioeconomic status on educational experience can not be thought of as a factor from which parental behaviors are independent.

Interaction Effects of SES

Research Hypothesis 4 addressed the interaction effects of SES with self-concept, locus of control, and the measures of the home environment. The results did not support the hypothesis that there would be significant interaction effects among SES and the independent variables. When the literature on variables related to academic achievement was reviewed, one of the weaknesses noted was that more research was needed on low socioeconomic status children to determine the differences in variables thought to be associated with achievement (Scott-Jones, 1984). The analysis of the results of this study have suggested that the relative importance of self-concept, locus of control, and the measures of the home environment in predicting the amount of variance in reading achievement does not differ among socioeconomic levels.

In summary, using hierarchical regression analysis, it was found that self-concept, locus of control, and the measures of the home environment were found to be important predictors in reading

comprehension. The best predictors of reading comprehension were found to be SES, the locus of control scale, and the individual question "How far in school do you expect your child to go?" The theoretical model for this study was the reciprocal determinism model, deduced from social learning theory. It is a triadic model which conceptualized human behavior as a continuous interaction among behavior, cognitions and other internal events that affect perceptions and actions, and external environment (Bandura, 1977, 1978). The data generated in this study support this theoretical model by demonstrating that no one factor was a panacea; it was the reciprocal interaction between behavioral, cognitive, and environmental influences that contributed the most variance in reading comprehension.

Limitations of the Study

An obvious limitation of this study is that the results can not be generalized to populations other than eighth graders. Other limitations result from the measurement of the variables in the study. Although reliability and validity were established on the self-concept, locus of control, and home environment scales, the scales were designed with brevity of administration in mind. The self-concept and locus of control scales were unidimensional and measured only general self-concept and locus of control orientation (internal or external), while it is a well researched fact that both constructs are multidimensional and also situational.

The measurement of the home environment was multidimensional, made up of several subscales and corroborated previous research on process variables in the home related to academic achievement. However, due to the secondary nature of the data, only the parental behaviors included in the questionnaire were available for investigation. On some questions, parents were only asked if they participated in a given behavior, not how frequently they engaged in the behavior. There may also be differences in perceptions of what constitutes "Regularly" or "Sometimes." Some of the questions were inadequate at measuring specific constructs such as the importance of quality time on parent-child interaction.

A related weakness which may limit the validity of the results of the study is the self-report nature of the instruments used. Higher correlations of the home environment have been found when the assessment of the home environment was done by interview and observation techniques, rather than by questionnaire format. It is possible that when answering, both the parent and student tended to give a socially desirable response rather than an accurate response. For example, when asked "Do you have a family rule about doing homework?" 91% of the parents responded "yes." Another related issue is that the format of the questionnaires was rather long and had similar formats for most of the questions; therefore, it is possible that some of the students or parents may have developed a response set that did not accurately represent their true beliefs.

The possibility exists that there may be, between the parents in two-parent homes, systematic gender or role differences in perceptions of family and school issues. Such difference may have influenced responses to the less objective items in the parent survey. For example, a given child's parents may differ significantly in their responses to questions measuring their aspirations for the child.

Implications for Parents and Educators

It has been claimed by Bloom (1981) that "if we are convinced that a good education is necessary for all who live in modern society, then we must search for the alterable variables which can make a difference in the learning of children (p. 16)." The results of this research study have shown that reading comprehension is determined by multiple factors; no one factor is a panacea. By determining the relative importance of potentially manipulable variables, educators and parents can focus their efforts on the factors that they can control when interacting with their child. Educators can consider the importance of these variables when creating educationally supportive learning environments for children. Educators may also be able to justify the allocation of time and energy across a broader spectrum of learning objectives within the school program. This may be accomplished by targeting the deficient variables in early intervention programs, or various parent training programs. Finally, both the schools and the parents

should realize that their joint efforts will only further enhance their child's educational experience.

Recommendations for Future Research

Using secondary analysis of data from large-scale assessments such as the NELS:88 is important due to the reduction in response burden on students and schools, the low cost of the data, the generalizability of the results, and the possibility of replications. In the future, research should address the following issues:

1. Researchers should study longitudinal changes in the stability of self-concept, locus of control, and the home environment. This may provide valuable information about developmental changes as well as the changes in the effects of these variables on academic achievement. The NELS:88 will do follow-up studies on the 8th graders in the 10th and 12th grade.
2. Path analysis should be done to determine the causal sequencing of the constructs such as SES, self-concept, locus of control, and the measures of the home environment.
3. Experimental research designs should be employed to manipulate the independent variables.
4. Researchers need to replicate studies on the effects of the home environment because of the rapid changes in the structure of the family.

Conclusions

This study found that the effects of SES can not be ignored in the prediction of reading comprehension. In this study, SES was comprised of parent's education, occupation, and family income. Some of the variables related to academic achievement such as owning a computer and attending cultural events are unaccessible to some parents as a result of society's financial limitations on its uneducated members.

On the other hand, it must also be considered that even though SES predicted the most variance in reading comprehension, the inclusion of such manipulatable variables as self-concept, locus of control, and the home environment almost doubled the amount of variance predicted. The finding that no interaction effects existed among SES and the independent variables was puzzling. This suggests the need for educators to change their focus from looking at the differences in SES groups to approaches that are for children of all SES levels. To increase self-concept and locus of control, educators could utilize techniques such as curriculum based assessment and mastery learning. Across the total curriculum, strategies could be implemented to emphasize attributions to an internal locus of control orientation.

The results from the analysis of the process variables in the home environment show educators the importance of working with parents on behaviors in the home environment related to academic achievement. Traditionally, the schools counted on parents to

initiate interaction between the home and school. While this may have worked for some parents, this strategy may be ineffective for many parents. Educators must now realize that they must take the initiative to increase parent involvement in such ways as making home visits, providing learning experiences through community centers, and having schools open after hours.

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APPENDIX
SELF-CONCEPT AND LOCUS OF CONTROL SCALE

Appendix (Continued)

	Strongly Agree	Agree	Disagree	Strongly Disagree
+ At times I think I am no good at all.....	_____	_____	_____	_____
* When I make plans, I am almost certain I can make them work.....	_____	_____	_____	_____
+ I feel I do not have much to be proud of.....	_____	_____	_____	_____
* Chance and luck are very important for what happens in my life.....	_____	_____	_____	_____

+ Self-Concept Scale

* Locus of Control Scale

Appendix

Your Opinions About Yourself

How do you feel about each of the following statements?

	(MARK ONE ON EACH LINE)			
	Strongly Agree	Agree	Disagree	Strongly Disagree
+ I feel good about myself.....	_____	_____	_____	_____
* I don't have enough control over the direction my life is taking....	_____	_____	_____	_____
* In my life, good luck is more important than hard work for success.....	_____	_____	_____	_____
+ I feel I am a person of worth, the equal of other people.....	_____	_____	_____	_____
+ I am able to do things as well as most other people.....	_____	_____	_____	_____
* Every time I try to get ahead, something or somebody stops me.....	_____	_____	_____	_____
* My plans hardly ever work out, so planning only makes me unhappy.....	_____	_____	_____	_____
+ On the whole, I am satisfied with myself.....	_____	_____	_____	_____
+ I certainly feel useless at times..	_____	_____	_____	_____

VITA

Karla Jean Driesler was born in Bartow, Florida where she attended public elementary and high schools. An accomplished swimmer, Ms. Driesler was an All-American for the University of Tennessee 1984-1987 and competed in the 1980, 1984 and 1988 Olympic Trials. Her degrees include the Bachelor of Science (with honors) with a major in Marketing and certification in secondary education, the Master of Science with a major in Educational Psychology, and the Doctor of Philosophy with a major in School Psychology, all from the University of Tennessee, Knoxville.

Upon completion of her Bachelor's degree, Ms. Driesler taught Marketing Education in Knox County Schools. While enrolled in graduate school, Ms. Driesler worked as a graduate assistant in the psychoeducational assessment center, a graduate research assistant, and a classroom coordinator for Children's Psychological Services.

Ms. Driesler completed her internship in Loudon County Schools where she is currently employed as a licensed school psychologist. She is a member of the Tennessee Association for School Psychologists, the National Association for School Psychologist, and the National Education Association.