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An investigation of the educational environment in the homes of third, fourth, and fifth-grade students and its relationship to pertinent variables

Caudle, Drusilla Charity, Ph.D.

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U·M·I
300 N. Zeeb Rd.
Ann Arbor, MI 48106

An investigation of the educational environment in the homes of third, fourth, and fifth grade students and its relationship to pertinent variables

by

Drusilla Charity Caudle

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CHAPTER I. INTRODUCTION

Background

There is much concern and debate over the status of American schools. The concern for public schooling has been highlighted by the report of the National Commission on Excellence in Education (1983) entitled "A Nation at Risk." According to the report, U.S. schools are in a dilemma: declining test scores, high drop out rates and illiterate youths. Other studies suggest that American students' achievement is far surpassed by foreign countries, especially Japan, in mathematics and science (Stevenson, 1983; Walberg, 1984). It seems that learning, at least as measured by traditional indicators of academic achievement, has suffered in American schools, a situation that seems more alarming considering that education may be America's largest enterprise (Walberg, 1984).

Walberg identified nine factors that influence school learning in the affective, behavioral and cognitive domains. The nine factors fall under three areas: (1) student aptitude - ability, development, and motivation; (2) instruction - amount and quality; and (3) environment - home, classroom, peers outside of the school, and television viewing.

Environmental factors influence learning in two ways: (1) students learn from them directly; and (2) indirect learning occurs which influences student ability, motivation, and responsiveness to instruction (Walberg, 1984).

The home environment is one of the first and most powerful influences in relation to students' academic ability, achievement and

motivation (Iverson and Walberg, 1982). Four approaches to home environmental studies as they relate to academic achievement are documented: (1) sociological surveys that include socioeconomic status (SES) measures such as parental education, income, and occupation (Bloom, 1986; Murphy, 1986; White, 1982); (2) family - constellation studies that analyze the number, birth order, and spacing of children in the family (Henderson, 1981; Schooler, 1972; Circirelli, 1978); (3) British school studies that emphasize parental experiences and aspirations for the child (Fraser, 1959; Plowden, 1967; Marjoribanks, 1976); and (4) Chicago school studies that emphasize specific behavioral processes thought conducive to learning (Dave, 1963; Wolf, 1964; Keeves, 1972).

Many studies show moderate and consistent amounts of variance in achievement associated with student background variables such as socioeconomic status and family size (McDermott, 1976). White (1982) concluded in his study that measures of the home environment, such as in the Chicago school studies, account for six times as much variance in achievement scores as traditional SES measures. The correlation between socioeconomic status and school achievement for elementary children is about .30 (Bloom, 1986).

Research on family constellation shows low predictability of learning. The typical correlation between family size and academic achievement is .25 (Circirelli, 1978; Schaefer, 1977).

Since little can be done to improve the SES of students or family constellation, various researchers have focused on the home environment as it relates to parent attitudes and parent behaviors. Researchers

found that academic ability and achievement are more closely linked to the measures of the sociopsychological environment and intellectual stimulation in the home than they are to parental socioeconomic status (Iverson and Walberg, 1982).

Statement of the Problem

According to Walberg (1984), both home conditions and the relationship of the home to the school have deteriorated in recent decades. School alone cannot bring about academic success (Mills, 1985). Parent involvement in mutual educational goals is crucial to academic success (Mills, 1985). Young people benefit from the collaborative effort of home and school. What parents do to help their child learn is more important to academic success than how well off the family is (U.S. Department of Education, 1986). Altering home conditions should produce large effects on learning (Walberg, 1984). Crow and Crow (1962, p. 84) emphasize that "the kind of home in which the child receives early training will determine in good part the kind of individual he will become."

Purpose

Five dimensions of the educational environment in the homes of third, fourth, and fifth grade students were included in this study: (1) Reading and discussion in the home to explore and discuss ideas and events in books, games, magazines, newspapers, and television programs; (2) academic guidance and support; (3) work habits of the children and parents in the home; (4) educational aspirations and expectations; and

(5) the use of the dictionary and encyclopedia in the home. The purpose of the present study was to investigate the five dimensions of the educational environment in the homes of third, fourth, and fifth grade students and their relationship to: (1) parents' level of education; (2) student gender; (3) time spent on homework; (4) the number of hours spent watching television; and (5) teacher perceptions of students' reading achievement levels.

Objectives

The objectives of the study are twofold:

1. To examine whether or not there is more than one underlying dimension to the educational environment in the home; and
2. To test hypotheses in which pertinent relationships among variables have been formulated.

Statement of the Research Hypotheses

To investigate the problem of the study, the following expectations were formulated:

1. For each dimension of the educational environment in the home, there will be a significant difference among homes when parents are grouped by their level of education. That is, for each dimension, a more favorable educational environment will exist in homes where parents have more education than in homes where parents have less education.
2. For each dimension of the educational environment in the home, there will be no significant interaction between student gender and level

of parents' education. That is, the differences in homes observed in hypothesis one will be the same in homes with male children as compared to female children.

3. For each dimension of the educational environment in the home, there will be a significant difference among homes which differ in the amount of time spent on homework. That is, a more favorable educational environment will exist in homes where students spend more time on homework than in homes where students spend less time on homework.

4. For each dimension of the educational environment in the home, there will be a significant difference between homes in which children watch over ten hours of television per school week and homes in which children watch ten hours or less of television per school week. That is, a more favorable educational environment will exist in homes where children watch less television than in homes where children watch more television.

5. For each dimension of the educational environment in the home, there will be a significant difference among grade level of children. That is, a less favorable educational environment will be found to exist as grade level increases.

6. For each dimension of the educational environment in the home, there will be significant differences among students grouped by teacher perception of reading achievement. That is, students who are perceived as high achievers in reading will have a more favorable

educational home environment than students who are perceived as being average to low achievers in reading.

7. For each dimension of the educational environment in the home, there will be no significant interaction between grade level and teacher perceptions of third, fourth, and fifth grade students' reading achievement level. That is, differences in the home environment observed for different reading achievement levels will not change with different grade levels.

Significance of the Study

Research indicates the beneficial impact the family has on the educational outcome of its children (Croft, 1979; Walberg, 1984; VanDevender, 1988). In his discussion of the curriculum of the home, William J. Bennett (1986) stated that there are specific things parents can do to provide intellectual stimulation at home. The "curriculum of the home" is twice as predictive of academic learning as family socioeconomic status (Walberg, 1984).

The home environment has changed in recent years. This study attempted to validate earlier exploratory research findings by Dave (1963) in relation to the variables: (1) work habits of children and parents in the home; (2) academic guidance and support; (3) activeness of the family; and (4) achievement press: as being important dimensions of the educational environment in the home.

Benjamin Bloom (1981, 1988) has alluded to the educational environment in the home that Dave (1963) postulated, that these variables

can influence school learning. Other studies have focused on the variables Dave postulated, separately. Dave's instrument has been used in a number of studies in the United States and abroad in relationship to cognitive performance and the affective domain. Since 1978, no study in the United States has validated Dave's variables as being important contributors to school learning. Moreover, family behavior varies across social-cultural groups and among families within a given demographic category. Unless findings are replicated, it is hazardous to generalize the results of any given study beyond the research group itself (Hess, 1981).

It is also hoped that this study will provide realistic suggestions for educators responsible for the formulation of parent involvement programs in the elementary schools. Second, it should provide parents with specific educational practices that they can use to help their child achieve.

Definition of Key Terms

1. The Educational Environment in the Home: Conditions and processes in the home which affect the educational achievement of the child. For this study, the educational environment in the home will constitute variables such as: (1) Reading and discussion in the home to explore and discuss ideas and events in books, games, magazines, newspapers, and television programs; (2) academic guidance and support; (3) work habits of the children and parents in the home; (4) educational

aspirations and expectations; and (5) the use of the dictionary and encyclopedia in the home.

2. The Index of Educational Environment (IEE): The IEE was developed by Dave in 1963. One of the chief purposes for developing the IEE was to attempt to pinpoint characteristics of the home environment thought to influence the educational behavior of the child. Based on theoretical and empirical literature in learning, motivation, child development, and related areas, the process variables: (1) achievement press, (2) language models, (3) academic guidance, (4) activeness of the family, (5) intellectuality in the home, and (6) work habits in the family, provided the basis for the development of this technique. The IEE has been used in a number of other research studies.
3. Teacher perceptions of student's reading achievement level: Judgment made by the teacher based on the D. C. Heath basal reading series as to the overall reading achievement level of the student. The teacher rated each student as being a high, average or low achiever in reading.
4. Parent's level of education: The level of formal schooling completed by the parent.

Assumptions of the Study

1. The home environment influences academic achievement.
2. The Index of Educational Environment was valid and reliable.
3. The parent reports were accurate and honest.

Limitations of the Study

1. The study included only one school district.
2. Variables that relate to affective development were not a part of the study.
3. The results of the study are limited to the population being studied.
4. Possible teacher bias may have occurred when teachers rated each student's overall reading achievement level. According to Brophy (1983), various combinations of personal characteristics, attitudes, and beliefs interact to form teacher expectations. Teachers may hold high expectations for students or they may hold low expectations for students. Some factors that might influence teacher expectations are the sex of the student, the race of the student, the socioeconomic status of the student, and the physical features of the student (Brophy, 1983).

Organization of the Remainder of the Study

In Chapter II, a literature review is presented involving home environmental research as it relates to academic achievement. Chapter III is devoted to descriptions of the research design, subject selection, instrumentation, data collection, recording, and analysis of data. Findings regarding the research hypotheses are reported in Chapter IV. A discussion, conclusion, implications, and recommendations for further research are contained in Chapter V.

CHAPTER II. REVIEW OF THE LITERATURE

Introduction

This chapter reviews the literature related to the stated problem of this investigation. These sources were employed in conducting the literature review: books, journals, dissertations, and ERIC (Educational Resources Information Center). One of the main foci in the review of the literature is the Dave (1963) study, because of its important relationship with the dimensions of the educational environment in the home in the present study.

Parent involvement in any form (parent/child relationships, introducing parent involvement in the school or building a partnership between home and school), produces gains in achievement (Henderson, 1987). The more parental involvement, the higher student achievement (Henderson, 1987).

One type of parent involvement that influences academic achievement is the experiences/learning opportunities the parents provide for their children in the home. According to the U.S. Department of Education (1986, p. 18),

> when parents of disadvantaged children provide specific learning opportunities such as reading, talking and listening to their children; tell them stories, play games, share hobbies, discuss news, TV programs, and special events; provide books, supplies and a place to study, observe routines for meals, bedtime, and homework; monitor the amount of time spent watching TV and doing after school jobs, discuss school events, help children meet deadlines and talk with their children about school problems and successes, their children can do well at school as well as the children of more affluent families.

Historically and theoretically, four approaches to the study of the home environment have been identified: (1) sociological surveys that include SES measures such as parental education, income, and occupation (Bloom, 1986; Murphy, 1986; White, 1982); (2) family-constellation studies that analyze the number, birth order, and spacing of children in the family (Henderson, 1981; Schooler, 1972; Circirelli, 1978); (3) the British School Studies that emphasize parental experiences and aspirations for the child (Fraser, 1959; Plowden, 1967; Marjoribanks, 1976); and (4) the Chicago School Studies that focus on specific parent behaviors thought conducive to learning (Dave, 1963; Wolf, 1964; Keeves, 1972).

Socioeconomic Status (SES) and Academic Achievement

Many studies have described the home environment in terms of general sociological variables such as parent education/social status, income and occupation. Educators and social scientists have found them to be inadequate as measures of the home environment (Dave, 1963). Status characteristics have failed to explain a considerable proportion of variability in the educational achievement among children, are too general and all-inclusive, and possess very little functional value for the educator (Bloom, 1980).

Research has consistently shown that socioeconomic status accounts for somewhere between 6 and 25% of the variance in IQ and academic achievement measures (Lavin, 1965; Miner, 1957). Benjamin Bloom (1986) stated that the correlation between socioeconomic status and school

achievement for elementary children is about +.30. Other studies related to SES and academic achievement are unclear (Henderson, 1981; Murphy, 1986).

In research conducted by White (1982) using meta-analysis techniques, almost 200 studies that considered the relationship between SES and academic achievement were examined. Only 101 studies were actually included in the meta-analysis. White concluded that the differences between the magnitude of the correlation coefficients in the studies which range from .100 to .800 were due to the unit of analysis used to compute the correlation coefficient and the definition of SES. When the unit of analysis in any of the 101 studies was the student, and when SES as typically defined (income, education, and occupation) was used, the correlation coefficient between SES and academic achievement is only weakly correlated (r = .22).

Family-Constellation and Academic Achievement

The relation of family-constellation variables such as birth order, family size, and sibling spacing to intellectual performance has long been a topic of interest for some researchers.

As an independent variable, studies related to birth order and intellectual accomplishment have been inconsistent, inconclusive and not well-grounded in theory (Henderson, 1981).

Schooler (1972) reviewed studies related to birth order and intellectual accomplishments and found a number of methodological issues. Differences in intellectual attainment are due not to birth order

positions as some studies purport (Bradley, 1968; Murphy, Murphy and Newcomb, 1973), but to differences in socioeconomic status or other background factors.

Ernst and Augst (1983) found birth order and its relationship to intellectual performance to be almost entirely a statistical sampling artifact.

There is evidence that family size is inversely related to intellectual performance (Kellaghan and Macnamera, 1972; Henderson, 1966; Belmont and Marolla, 1973; Nisbet and Entwhistle, 1967). Kellaghan and Macnamera (1972) reported a simple r of -.218 between family size and verbal reasoning ability in a sample of 500 eleven-year-old Irish children. They reported a mean family size of 3.53 in Ireland. The dependent variable was the Drumcorda Verbal Reasoning Test, which has a mean of 100 and a sigma of 15.

The typical correlation of the number of children in the family ("sibsize") with academic achievement is .25 (Circirelli, 1978; Schaefer, 1977). Belmont and Marolla's (1973) analysis reveals that as family size increases, the level of ability declines. Most studies do show an inverse relationship between family size and intellectual performance (Henderson, 1981). Based on large-scale studies, achievement decreases as family size increases (Circirelli, 1978).

However, some studies fail to support the relationship between family size and intelligence (McCall and Johnson, 1972). The reported correlations were measures of IQ: -.08 for early IQ and -.11 for later

IQ. The 12,430 subjects were enrolled in grades 2 through 12 in Southwestern Illinois.

When the common variance associated with other social and demographic variables was removed, Henderson (1966, cited in Valencia, 1985) and Valencia (1981) found birth order and family size to be only weakly associated with children's intellectual performance.

Large-scale studies related to spacing of children in the family reveal that achievement decreases as spacing between siblings decreases (Circirelli, 1978). A study of the two-child family indicates that close spacings between siblings may be more detrimental for boys than for girls (and may be beneficial for girls). This study looked at American College Entrance Examination (ACE) scores in a sample of approximately 900 college entrance students. When this study was replicated with children in the fourth, fifth, and sixth grades, the results were essentially borne out (Rosenberg and Sutton-Smith, 1969).

Zajone and Markus (1976) attempted to develop a confluence model explaining the effects of birth order, spacing, and family size on intelligence. The basic assumption to the theory is that the intellectual environment of the family has a direct influence on the intellectual development of children born into the family. If two parents, both gifted with an absolute intellectual level of 100, are joined by a newborn whose absolute intellectual level is zero, the resulting average for the child's environment is 67: (100 + 100 + 0)/3. At the birth of another child--the first one has reached a level of 40--the environment becomes even less inspiring: (100 + 100 + 40 + 0)/4 =

60. The decrease of IQ with sibsize and with birth order is explained. If spacing between the sibs is so large that the first born is at a level of, for example, 80 at the birth of the second child, the latter's environment will be 70. Large gaps between children improve the environment so that younger sibs may surpass the older. The effect of spacing is independent of social class.

Several students have failed to confirm the predictions of the confluence model (Valencia, Henderson, and Rankin, 1981; Melican and Feldt, 1980; Page and Grandon, 1979). Other studies that support the confluence theory have been weak and inconsistent across studies (Breland, 1974; Rees and Palmer, 1970, cited in Melican and Feldt, 1980).

SES and family-constellation as they relate to academic achievement can be estimated more conveniently than other measures of the home environment such as with the British School Studies and the Chicago School Studies, but are less valid by standards of predictive validity and psychological theory. According to Iverson and Walberg (1982) and Marjoribanks (1979), achievement is more closely linked to the measures of the sociopsychological environment (the British School Studies) and intellectual stimulation in the home (the Chicago School Studies) than they are to parental socioeconomic status.

The British School Studies and Academic Achievement

The British School Studies have been identified as one approach to the study of the home environment as it relates to academic achievement. Studies in a British setting (Fraser, 1959; Wiseman, 1967; Plowden, 1967;

Marjoribanks, 1976) have shown that the home environment has moderate association with cognitive performance. The British School Studies mainly focus on parental attitudes and experiences and material conditions in the home rather than on specific behavior processes. Instruments to assess home environmental measures in the British School Studies include Parent Reading Habits, Parent Attitudes, Survey of Parents of Primary School Children (SPPSC) and Parent Attitude Research Instrument (PARI). Typical assessment items relate to reading habits of family, number of books in the home, parents' attitude toward education and future occupation of child, and attitude towards the teacher ("What do you feel about the way teachers control the children at school?" "Has the teacher talked to you about the methods they use at school?"). The magnitude of the correlations (multiple R) in the studies range from .27 to .75. Criterion measures used include Reading, English, Mathematics, and Vocabulary test.

Fraser (1959) investigated 408 children in Aberdeen at the lower secondary level (12-15 years old--28 boys, 32 girls). Fraser's home environmental measures fall under four main headings: cultural, material and economic, motivational, and emotional. In all, eleven items of the home environment were studied, namely parents' education, parents' reading habits (cultural); income, parents' occupation, family size, living space (material); parents' attitudes to the education and employment of the child, parental encouragement (motivational); abnormal home background, general impression of the home, mother out of work (emotional). Fraser found multiple correlations of .75 between the home

environmental measures and achievement. The three items mainly responsible for the higher correlation between characteristics of the home and achievement at school were income, abnormality of the home background, and the parents' attitudes to the education and future occupation of the child. Findings related to parents' level of education reveal that children with better educated parents reach higher standards in their school work. Parents who have had the advantage of more than the minimum of formal education are likely to have a favorable attitude toward the child's education, and to give him/her encouragement and help with his/her school work.

The Plowden (1967) report, which surveyed environmental measures (parental attitude) as they relate to academic achievement, made important contributions to the study of the relationship between the home environment and educational achievement. The environmental measures as they relate to academic achievement were examined for three age cohorts of English children. One hundred seventy-three schools were included with approximately 1,000 children in each cohort. The average age of the children in the senior cohort was 11, middle cohort 8, and junior cohort 7 years.

A structured interview schedule was used to gather information about the family environments of the children. Five environmental measures were assessed in each cohort: (1) Parent-teacher relations; (2) Parents' interests and support; (3) Parents' initiative; (4) Parents' aspirations; and (5) Literacy of the home. Social status (occupation, education, and income) and sibsize were also included. The criterion measure used was

Reading Achievement. Analysis reveals that the home measures stated above, except for parent-teacher relations, are influenced moderately by social status factors such as parents' level of education. In respect to each of the environmental measures, the home situation was likely to be more favorable the higher the social class of the family. What was termed literacy of the home, that is the extent to which the families had firm habits of reading, increased very markedly with social class. According to Marjoribanks (1979, 1984) and Baker (1986), the direct effects of social status on reading achievement are generally mediated by the home measures. In the junior and senior cohorts, sibsize has a direct effect on girls' reading performance. In the junior and middle cohorts, literacy in the home has direct effects on reading scores. In the senior cohort, parent-teacher relations affect the girls' scores. Literacy and aspirations affect reading for boys and girls.

Reading is affected primarily by the literacy of the home which is related to social status factors during the early elementary school years. Parents' aspirations are an important home measure which influence reading performance for both boys and girls by the end of elementary school.

Other British School Studies such as the Wiseman (1967) study surveyed parents of 186 seven- to ten-year-olds in Manchester, England. This study was entitled The Manchester Survey. The criterion measures used in the study included the results of 12 tests of intelligence (a sum of several tests), English, Arithmetic, and Vocabulary. The SPPSC which relates to parental attitude was the home measure used. The SPPSC had an

average correlation with the 12 tests of over .2. The highest correlation of all the home measures with the twelve tests was preferred age of leaving school. Four variables dealing with reading had average correlations with all tests ranging from .272 to .341 and an overall average of .312. Wiseman's findings suggest that economic level and social class are much less important than aspects of parental attitude, attitude toward education, and attitude toward books and reading. "A middle class home does not guarantee a favorable background for educational progress, and literate homes with good parental attitudes toward school may be found in the slums as well as in the suburbs" (Wiseman, 1967, p. 382). Another finding in the Wiseman study revealed that parents' education beyond the statutory leaving age seems, in this sample, to have little effect on attitude towards the education of their children, which was not the case in the Fraser study or Plowden report. As such, Wiseman concluded that the sample of parents is probably less than fully representative and only reflects the circumstances of a particular region which cannot be generalized to the country as a whole.

Before the British School Studies were generated, a group of studies entitled the Chicago School Studies of family environmental research were initiated. The Chicago School Studies focused on what experiences are provided or not provided in the home that account for differences in intellectual performance.

The Chicago School Studies and Academic Achievement

During the 1960s and 1970s, a number of investigators from the University of Chicago sought to investigate possible home influences on the intellectual performance of children. Rather than focus on social status measures or family-constellation measures as they relate to academic achievement, the investigators sought to study in detail "what parents do" to facilitate children's cognitive and affective growth.

The interest concerned with parent behaviors in the home were twofold. First, status characteristics accounted for a small proportion of variance in children's educational achievement. A great deal of variation in the educational achievement of children was present within each status level (Kalinowski, 1981). Secondly, status characteristics or sociological characteristics as measures of the home environment are too general and inclusive and do not give specific and direct clues as to what parents and schools can do to improve the situation for any child (Bloom, 1964; 1980).

The investigators in the Chicago School Studies had the idea that there was a curriculum and teaching style in each home which accounted for differences in a child's preparation for and guidance through the learning task of the school (Bloom, 1980).

The Chicago School Studies were initiated by Dave (1963) and Wolf (1964) under the direction of Benjamin Bloom. Dave and Wolf developed lists of parental behaviors and parent-child interactive behaviors that seemed likely to foster intellectual growth. Dave (1963) examined relations between the parent behaviors and academic achievement, while

Wolf (1964) examined relations between the parent behaviors and intelligence.

In Dave's (1963) investigation, his primary purpose was to study a specific component of the home environment, specifically the educational environment in the home. His study attempted to unravel the influence of environmental factors on the development of behavior differences.

Dave (1963) believed that both the environment and heredity are responsible for producing variability in the academic behavior of children. Dave also believed that the individual's basic potential to achieve academically is a variable within wide limits, and its effectiveness is largely governed by the nature and quality of the educational environment interacting with the organism. Dave (1963) stated that academic achievement is an acquired human characteristic and hence, the differential environments seem to be contributing substantially to the variability in achievement among children.

Dave's educational environment in the home, which was based on research from learning, motivation, child development, and related areas, included six environmental process variables with specific process characteristics. The process variables are as follow: achievement press, language models, academic guidance, activeness of the family, work habits in the family, and intellectuality in the home.

Achievement press

According to Bloom (1981), the home is the place where motivation to learn well is secured by the child. Bloom also stated that the home is

the place where the child aspires to an educational level and lifestyle that will serve him/her in the future.

Variations in achievement among children relate to such factors as parental aspirations for the child. The parental aspirations for the education of the child are generally reflected in long-term goals, and in the selection of activities which have long-term rewards. Variables such as academic achievement standards and standards of reward for educational achievement are stipulated by parents.

Thus, achievement press refers to the goals and aspirations parents hold for their children. It includes achievement standards for the child and their standards of reward for educational achievement (Dave, 1963).

When parents provide academic goals for the child, provide support and encouragement for school work, hold high expectations for school success, and provide daily activities to achieve educational goals, they are promoting attitudes that are critical to achievement (Bailey, 1983; Anderson, 1980; Baker, 1987; Henderson, 1988; Safran, 1986; Silvern, 1985; Boocock, 1972; Seginer, 1983; Treiman, 1974; Entwisle, 1983).

Language models

Bruner (1956) and others have shown the significance of language facility in educational development. Language is not merely a subject of learning but is a medium of learning all subjects, because it is a medium of thought processes (Dave, 1963).

The home environment plays a very important role in the development of the child's verbal facility as a part of the socialization process

much before he/she enters school. The quality of language usage depends upon the kind of language models available to the child in the home at the initial stages of language development (Dave, 1963).

Most of the important developments in verbal skill take place almost entirely before the child begins school. The language models to which the child is exposed in the home produce a lasting effect on the verbal development of the child, which in turn influences his/her accomplishments in practically all the areas of academic learning (Dave, 1963).

Academic guidance

Academic guidance refers to the amount and quality of guidance provided by parents on matters related to schoolwork. Dave (1963) postulated process characteristics of this variable as: helping the child with homework assignments, tutoring him/her in school subjects, parental knowledge of the child's strengths and weaknesses in each subject area, parents helping the child to appraise his/her own strengths and weaknesses, parental knowledge of textbooks used, parental knowledge of grades the child receives, parental discussion of grades with the child, parental discussion of the child's progress in school, and developing in the child a sense of accomplishment.

Developing in the child a sense of accomplishment is similar to the development of industry, which is the fourth stage of Erikson's classification of human development and which normally spans the period from the age of six to eleven years (Erikson, 1950). According to

Erikson, the lack of adequate development of the stage of industry (or accomplishment) results in the development of inferiority. According to Dave (1963), the home can play a significant role in the development of the sense of accomplishment in the child, which is a prerequisite to his/her educational progress.

Involving parents in their children's formal education improves the children's achievement (Henderson, 1988; Bloom, 1988; VanDevender, 1988; Bristor, 1987; Safran, 1986; Walberg, 1984; Graue, 1983; Slaughter, 1987; Epstein, 1982; U.S. Department of Education, 1986).

Activeness of the family

According to Dave (1963), exposure to a variety of experiences at an early age promotes the expansion of a child's experiential world. The greater the variety of experiences within the home, the more likely the child will gain general information and profit from learning. According to Piaget (1952), experience is not reception but progressive action and construction. Activeness of the family includes such process characteristics as reading activities, discussion of ideas, television programs, news, and daily events; trips to the library, museum, and other cultural activities; and the use of educational games.

Parents who promote such practices as: (1) reading to the child (Becher, 1983; Brezinski, 1964; Dix, 1976; Durkin, 1966; Green, 1981; Hansen, 1969; Mccormick, 1981; McKay, 1981; Teal, 1978); (2) talking and asking questions about the story read during the reading process and after the reading process (Flood, 1977; Snow, 1983; Teal, 1978); (3)

providing a wide range of reading materials within the home (Teal, 1978; Siders and Sledjeski, 1978); (4) promoting expectation that their child will learn to read, rewarding reading achievement through praise, etc. (Wells, 1978); and (5) instructing their children in the mechanics of reading (Hewison and Tizard, 1980), have children who produce greater gains in reading achievement than parents who do not promote such practices.

The U.S. Department of Education (1986) and Clark (1983) stated that when parents of disadvantaged children provide learning opportunities such as reading, talking and listening to their children, tell them stories, play games, discuss news, TV programs, and special events, etc., their children can do well at school as well as the children of more affluent families.

Work habits in the family

Habits such as industriousness, perseverance, minuteness, and punctuality have their origin in the home. These habits are most likely related to more general work habits in the home such as a well-established structure and routine in-home management. The variety of roles that the child has to play in a well-managed home appear to be crucial in developing flexibility and quickness in work which are prerequisites of successful learning. The values and priorities attached to different routines are likely to influence the study habits of the child and, hence, his/her academic achievement (Dave, 1963; U.S. Department of Education, 1986).

Intellectuality in the home

It has been shown by Piaget (1952) and others that conceptual thinking and simple problem solving skills begin to develop during the early preschool period. The intellectuality in the home, the kind of complex and challenging environment provided to the child in the home, contributes to the development of higher cognitive processes and mental skills. Thus, the thought-provoking situations presented to the child by the home environment through toys, games, hobbies, etc. are likely to contribute to the development of the higher mental processes and skills.

Dave (1963) found the correlation between the six process variables and the total set of achievement scores (the Metropolitan Achievement Battery) for fourth and fifth graders to be .799. Correlations of the six process variables were highest with tests of word knowledge and reading, and lowest with tests of arithmetic computation and spelling. McGuirk (1973) replicated Dave's study and came up with equally strong findings despite problems in scaling and analysis.

Dyer (1967) and Kellaghan (1977) used the family environment measures devised by Dave in other cultural settings. Dyer's (1967) sample consisted of 15 girls and 15 boys, age 11, in Port of Spain, Trinidad. The criterion used was the Iowa Test of Basic Skills and the Language Thorndike I.Q. Test. The process variable devised by Dave accounted for a large percentage of the variance in academic achievement scores, and had moderate relations to intelligence. The multiple correlations in the Dyer (1967) study ranged from .32 to .78.

Kellaghan's (1977) study of 30 eight-year-old girls and 30 eight-year-old boys from a socially disadvantaged area of Dublin, Ireland, used the process variables devised by Dave (1963). Kellaghan correlated the process variables with the Stanford-Binet Arithmetic Quotient and the Reading Quotient. Kellaghan (1977) found moderate to large percentages of the variance in arithmetic, Irish reading, and English reading test scores. The correlations in the Kellaghan (1977) study range from .47 to .53.

Keeves (1972), for his family environment measures, used as a guide measures devised by Dave and Wolf (1964) and the Plowden National Survey (1967). The general aim of his investigation was to study relationships between various measures of the educational environment: the home, the classroom, and the peer group and the performance of the child at school. The criterion used for the Keeves study was math achievement, science achievement and academic self-concepts. Keeves' sample, drawn from the Australian Capital Territory, consisted of 215 children, ages 11-12. The home environment was examined from three aspects: (1) the background characteristics or structural dimension (family size, residential mobility, religious affiliation, linguistic background, housing, parents' occupation, parents' education, position of child in family, income, hours per day, mother employed outside the home, and abnormality of home; (2) the attitudinal dimension (attitudes toward the child's present education, ambitions for the child's future education and occupation, and parents' hopes and aspirations for themselves); and (3) the process dimensions (parents report favorable relations between home and school,

use of books and library facilities, provision of help with formal school work, and arrangements made for tackling home assignments).

Results indicated that the three dimensions of the home environment, the structural, attitudinal and process dimensions, were strongly interrelated. Canonical analysis allowed the relationships to be examined. To simplify the analyses, five variables associated with the structural dimension of the home were chosen as being the most important in accounting for variations in achievement test scores.

From the canonical analysis of the structural variables in relationship to the attitudes of the home, canonical factors were strongly weighted on the parents' aspirations and the mothers' attitudes and ambitions for the attitudinal component, and the father's education, the father's occupation and the number of children in the family for the structural component.

Also, the canonical analysis of the structural variables in relationship to home practices or process dimensions, canonical factors were strongly weighted on the use of books and library facilities and a high level of arrangement for homework for the process dimensions, and the level of education of the father, family size, and religious affiliation for the structural component. Correlations in the Keeves study between the modified version of the IEE and the criterion range from .24 to .58.

A longitudinal study done by Shea (1977) used a modified version of the IEE called the HER (Home Environment Review). A sample of 153 children, ages 5-8 from two communities in the Florida Parent Education

Follow Through Model, were involved in the study. Standardized tests were administered to children at the end of the school term in three grade levels: (1) kindergarten and first grade - The Metropolitan Achievement Test, Total Reading scores; and (2) second grade - The California Achievement Test - Vocabulary and Comprehension scores. Total reading scores were not available for this grade level. Each child's parents were interviewed in their home by a trained para-professional who observed the home environment. The interviewer rated the home on nine dimensions: (1) expectations for the child's schooling; (2) awareness of the child's development; (3) rewards for intellectual attainment; (4) press for language development; (5) availability and use of supplies for language development; (6) outside learning opportunities; (7) materials for learning in the home; (8) reading press; and (9) trust in school. Results indicated that, when variables are considered as clusters, it appears that reading press, press for language, and opportunities for learning are most commonly the best predictors of achievement across the two communities and grade levels.

Other analyses revealed that of the nine HER variables, the best predictors of achievement across sites appear to be: material for learning in the home, learning opportunities outside the home, and reading press and expectations for child's schooling at kindergarten and first grade; and press for language development, materials for learning and awareness of child's development at the second grade level.

Other Chicago School Studies of family environmental research investigated relations between the family environment and sets of ability

measures. Mosychuk (1969) examined the WISC scores of 100 eleven-year-old boys from Edmonton, Canada. Ten aspects of the family environment were used in interviews with mothers. Factor analysis of the scores on the ten measures produced four factors labeled: (1) aspirations-planfulness-harmony; (2) authoritarian-overprotective; (3) activity-environmental interaction; and (4) female-language. The first factor had moderate concurrent validities with the WISC verbal, performance, and full intelligence scores, while the other press variables had low to negligible associations with the WISC scores. The multiple correlations in the Mosychuk (1967) study ranged from .32 to .42.

Marjoribanks (1972) examined the relations between family environment measures and scores on tests of verbal, number, spatial, and reasoning ability. Marjoribanks' sample included 185 boys, eleven years of age, from Southern Ontario. The criterion measure used was the SRA Primary Abilities Test. The family environment measures have moderate to high concurrent validity for reasoning abilities, and low to negligible relations to spatial ability. The correlations between the process variables and SRA Primary Abilities Test range from .04 to .69. The multiple correlations between the process variables and SRA Primary Abilities Test range from .33 to .72.

The Chicago School Studies have measured family environments with greater precision than most prior investigations of the relations between family environments and children's cognitive performance (Marjoribanks, 1979). The results of the Chicago School Studies generally find that the process variables or environment measures have

moderate to high relations to verbal performance scores, moderate associations with mathematics achievement, and lower relations to nonverbal intelligence scores.

The Dave (1963) study proposed six process variables that influence academic achievement. Four of the process variables that Dave proposed are part of this study: (a) work habits in the family; (b) academic guidance; (c) activeness of the family; and (d) achievement press. The other two process variables in the Dave study (language model and intellectuality) were not included in the present study because they involve parent status more than parent behavior and seem less closely associated with achievement (Iverson and Walberg, 1982). Homework and TV viewing was included in this study because research indicates its important effect on academic achievement.

Homework and Academic Achievement

Historically, the popular press became concerned with homework as early as 1913 with the publication of an article in Ladies Home Journal. Between 1904 and 1984, 84 homework experiments were located (Foyle and Bailey, 1984). Most studies prior to 1960 found that homework benefited student achievement, or at least did not harm student achievement (Goldstein, 1960; Strang, 1968). Later studies suggest that homework has a positive effect on student achievement (Walberg, Paschal, and Weinstein, 1984; 1985; Keith and Page, 1985; Keith, Reimere, Fehrmann, Pottebaum, and Aubrey, 1986; Walberg, 1984; Wolf, 1979).

Homework experiments have been conducted at each level of the education process: elementary, high school, and college (Foyle and Bailey, 1988), and on a variety of subjects: mathematics, social studies, and English (Foyle and Bailey, 1988). Research indicates that homework improves achievement for college (Polachek, Kniesner, and Harwood, 1978), high school (Foyle, 1984; Keith, 1982; 1987; Keith and Page, 1985), and elementary school students (Paschal, Weinstein, and Walberg, 1984; Wolf, 1979).

Walberg's educational productivity model postulated nine factors in three categories: student aptitude, instruction, and environment that are linked to student achievement. Environmental factors, such as supervised homework in the home, have three times the effect of SES when the homework is graded and commented upon by the teacher (Walberg, 1984).

A study was done to provide evidence of the general validity of Walberg's model (Welch, Walberg, and Fraser, 1986). The study made use of data collected during 1981-1982 from a random sample of 1960 nine-year-old students from 124 elementary schools by the National Assessment of Educational Progress in Science sponsored by the National Science Foundation. Results of the study indicate that when other variables are controlled, ability, motivation, class environment, home environment, amount of television viewing, gender, and race were all significantly related to science achievement. Variations in student science achievement at this age level appear less a function of schooling effects than of students' aptitudes, experiences, and interests (Welch et al., 1986).

To quantify the effect of homework on achievement and motivation, effect sizes were calculated from data of 15 studies (Paschal et al., 1984). Information concerning the characteristics of the independent variable (homework quality, emphasis, duration, etc.) and dependent variables (instrument type, discipline, cognitive outcome) as well as subjects, settings, study quality, and design was coded into 54 factors. Results indicate that larger effects on achievement were found for homework that bears teachers' comments and grades, assigned homework produced more learning than no homework; and traditional homework was superior to nontraditional. The curriculum and standardized instrument types showed the largest effects. With respect to discipline, reading and social science showed the greatest effect sizes. Effect size was highest when students were given daily homework assignments. The homework treatment effects were greatest for fourth and fifth grade students (the synthesis compared fourth through tenth grade students).

According to Paschal (1984), additional randomized experiments are needed to estimate the effect more accurately, although it can be said that homework appears to benefit learning, especially if graded and commented upon.

Walberg says (1985), "The amount, quality, and usefulness of homework are jointly determined by teachers, parents, and students. If one of the three legs of the homework stool is unsupportive, little may be accomplished academically in the large amount of time students spend outside schools" (p. 79).

Data indicate that neither American parents nor teachers of elementary school children tend to believe that homework is of much value (Berliner, 1987; Stevenson, Lew, and Stigler, 1986). American children spend much less time on homework than do Japanese children, and both groups spend vastly less time on homework than do Chinese children. American mothers estimated that on weekdays their first-graders spent an average of 14 minutes a day on homework, for fifth graders 46 minutes a day. On weekends, American children spend an estimated 7 minutes on Saturday and 11 minutes on Sunday doing homework assignments (Stevenson, 1986). Research clearly indicates that greater amounts and higher standards of homework would benefit our students' learning (Walberg, 1985).

Parental involvement that relates to homework includes providing a time and place to do homework, providing a desk for students to work, supervising homework activities and providing help when needed. According to Berliner (1987), attitude about homework also appeared to influence achievement. Parents must learn to value homework as a component of school success. Families must see homework as a way of extending knowledge and providing practice in newly learned skills, not as busy work (Casanova, 1987).

Television Viewing and Academic Achievement

Another variable which may influence achievement is leisure television viewing. Some researchers have speculated that homework may improve achievement, in part by displacing leisure television viewing

(Paschal, 1984; Hornik, 1981). However, there have been no studies which involved experimental increases in homework to find out whether TV would be spontaneously reduced or displaced (Anderson, 1988).

Research suggests that up to ten weekly hours of television viewing may have a slight positive effect on learning; beyond ten hours, the effects are increasingly negative (William, Haertel, and Walberg, 1982). According to Walberg (1984), more than ten hours of viewing per week displaces homework and other educational activities. Anderson (1988) found no consistent or strong evidence to support that television viewing displaces valuable cognitive activities.

A synthesis of 23 studies spanning 26 years between 1954 and 1980 (William et al., 1982) indicate that there was no significant difference in leisure time television viewing to achievement in different content areas and for different age or grade levels (this study compared students K-12). There was a significant difference found between males (correlation for males -.04) and females (correlation for females -.13), indicating greater impact of televiewing upon achievement for girls than for boys. Another significant difference was found between low and medium IQ (-.05) and higher IQ (-.14) students, indicating a greater impact of television viewing on achievement for higher IQ ranges.

A significant impact of television viewing on achievement according to some research depends on the amount of television viewed. As stated earlier, up to ten hours of television viewing has a slight positive effect; beyond ten hours, the effects are negative (William et al., 1982).

Keith (1986) and Fehrmann (1987) found no curvilinear effects for television on achievement and no significant interaction between television viewing and gender (high school seniors) in their effect on achievement. Consistent with previous research, interaction was found, however, between television viewing and intellectual ability, suggesting differential effect of television viewing on high and low ability students.

Parental involvement that relates to leisure time television viewing involves monitoring the amount of time the child spends viewing television.

Summary

Parent involvement in any form produces gains in achievement. The more parental involvement, the higher the student achievement (Henderson, 1987).

Historically, there have been four approaches to home environmental studies as they relate to academic achievement: (1) sociological surveys that include socioeconomic (SES) measures, such as parent education, income, and occupation; (2) family-constellation studies that analyze the number, birth order, and spacing of children in the family; (3) British School Studies that emphasize parental experiences and aspiration for the child; and (4) Chicago School Studies that emphasize specific behavioral processes thought conducive to learning.

Since little can be done about SES and family constellation as they relate to academic achievement, researchers such as Dave and Bloom (1963)

have focused on the home environment in terms of what parents "do" to stimulate and encourage learning in the home. Dave found process variables in the home to be correlated with academic achievement (.799).

CHAPTER III. METHODOLOGY

Introduction

The purpose of this study was to investigate several dimensions of the educational environment in the homes of third, fourth, and fifth grade students and their relationship to: (1) parents' level of education; (2) student gender; (3) time spent on homework; (4) the number of hours spent watching television; and (5) teacher perceptions of students' reading achievement level. This chapter describes the research procedures involved in the study: (1) the research design, (b) the subject selection, (c) instrumentation, (d) data collection, recording, and analysis of data.

Research Design

This study used the correlational research design. Borg and Gall (1983) state that correlational studies include all research projects in which an attempt is made to discover or clarify relationships between any two variables or combinations of three or more variables.

Variables of the Study

Variables investigated in this study included several dimensions of the educational environment in the home, parents' level of education, student gender, time spent on homework, the number of hours spent watching television, and teacher perceptions of students' reading achievement level. These variables were measured by a modified version

of the IEE. A teacher rating scale was used to measure the reading achievement level of students.

Statement of the Null Hypotheses

1. For each dimension of the educational environment in the home, there will be no significant difference among homes when parents are grouped by their level of education.
2. For each dimension of the educational environment in the home, there will be no significant interaction between student gender and level of parents' education.
3. For each dimension of the educational environment in the home, there will be no significant difference among homes which differ in the amount of time spent on homework.
4. For each dimension of the educational environment in the home, there will be no significant difference between homes in which children watch over ten hours of television per school week and between homes in which children watch ten hours or less of television per school week.
5. For each dimension of the educational environment in the home, there will be no significant difference among grade levels of children.
6. For each dimension of the educational environment in the home, there will be no significant difference among students grouped by teacher perception of reading achievement.
7. For each dimension of the educational environment in the home, there will be no significant interaction between grade level and teacher

perceptions of third, fourth, and fifth grade students' reading achievement level.

Subject Selection

The sample for this study was taken from a school district in north central Iowa. According to a Chamber of Commerce report done in March 1991, the population in the community exceeds 25,000. According to the report, half of the population had received formal education beyond high school, and over half were employed on a full-time basis. Beyond secondary education, there is a vocational technical school and a community college in the community. Approval to conduct the research was secured from the school district. Approval from the Iowa State University Human Subjects Review Committee was also secured.

Elementary students and their parents were selected for this study because of the importance of the home environment during the early years in relationship to school learning (Bloom, 1988). The sample was selected from third, fourth, and fifth grade students because, according to Bloom (1964), by grade three at least 50 percent of the general achievement pattern for age eighteen has been developed. By the end of the fourth grade, children are likely to have developed over 50 percent of their hypothesized general achievement pattern for age eighteen.

There are nine elementary schools located in the school district, with a total enrollment of approximately 2,331 students. The ethnic breakdown of students attending elementary schools consists of 132 African-American students, 29 Spanish-American students, 17 Oriental

students, 5 Native American students, 2 others, and 2,146 Caucasian students. The total third, fourth, and fifth grade student enrollment is 1,089. Of the total number of third, fourth, and fifth grade students, 8 percent are minorities. There are 356 third graders, 335 fifth graders, and 398 fourth graders attending elementary schools in the school district.

Characteristics of the Sample

The school district suggested that all of their third, fourth, and fifth grade students be included in the study. Of the 963 questionnaires dispersed, 459 or 47.7% were returned. The respondents were asked to provide demographic information on the first page of the questionnaire (Appendix B, Tables B.1-B.7). They were asked: (1) to identify the person filling out the questionnaire; (2) to give their ethnic background; and (3) to give their educational level (mother and father). They were also asked to give their child's sex, age, and grade level.

A profile of the respondents based on data obtained from the demographic information indicated that the majority of adults filling out the questionnaire were mothers (92.2%) and Caucasian (97.8%). Only a small number were from other ethnic groups. The data also indicated that 3.5% of mothers had an advanced degree (master's degree or above), 28.9% had a college degree, 30.7% had some college, 31.1% had a high school diploma, and 5.7% of mothers had completed eleventh grade or less. Three respondents did not respond to this question. Data indicated also that

9.8% of fathers had an advanced degree (master's degree or above), 27% had a college degree, 27.2% had some college, 28.8% had a high school diploma, and 7.2% of fathers had completed eleventh grade or less. Seventy respondents did not respond to this question.

Data obtained from the parents who filled out the questionnaire indicated that 52.7% of the children in the study were female and 47.3% were male. Over half (63.2%) of the children in the study were between the ages of 10 and 11; 36.8% between the ages of 8 and 9. Data also indicated that 39% of the children in the study were fifth grade students, 31.6% were fourth grade students, and 29.4% were third grade students.

Instrumentation

Two instruments were administered: (1) a measure of the reading achievement level of the student, and (2) an instrument to measure the educational environment in the home.

Teacher rating scale

The school system decided that teacher judgment based on the D. C. Heath basal reading series would be used to indicate the overall reading achievement level of the student. The teachers rated each student's level of reading achievement using the following rating scale: 1 = high achieving student; 2 = average achieving student; and 3 = low achieving student. There were no restrictions placed on teachers in reference to criteria used to determine the overall reading achievement level of the students.

Index of Educational Environment (IEE)

The Index of Educational Environment, developed by Dave under the direction of Benjamin Bloom in 1963, was devised to measure the relationship between the educational environment in the home and other relevant variables. According to Dave, the process variables--achievement press, language models, academic guidance, activeness of the family, intellectuality in the home, and work habits in the family--provided the basis for the development of a technique for measuring the educational environment in the home. The IEE has been widely used in a number of other research studies (Dyer, 1967; Mosychuk, 1967; Weiss, 1974; Keeves, 1972; Marjoribanks, 1972; Kellaghan, 1977; Marjoribanks, 1978; Dolan, 1978).

Validity and reliability of instrument The construct validity of the instrument was established by Dave by testing the first hypothesis in his study. This hypothesis stated that the relationship between educational achievement and the IEE in the home is greater than that between educational achievement and the sociological status characteristics such as social class, occupation of the father, and education of the parents. Dave found the correlation between the IEE and the total set of achievement scores to be .799. The correlation between parents' education and the achievement scores was .273. The correlations between the achievement scores and other status characteristics were lower than .273. Thus, the acceptance of the first hypothesis established the construct validity of the instrument. The correlation

between the IEE and the total achievement scores indicates the predictive validity of the instrument.

The reliability of the instrument was established by using the Hoyt's method of estimating reliability by two-way analysis of variance. An estimate of internal consistency of the instrument developed in the Dave study for the environmental measurement was .95.

Modified Version of the Index of Educational Environment (IEE)

A modified version of Dave's (1963) instrument was used in this study. Some of the items on the questionnaire (see Appendix A: Family Activities in the Home) were extracted from Dave's interview schedule. Items extracted were rephrased or reworded, and most were written as statements. Dave's schedule was written as questions. Questionnaire items 7-12 were extracted from Dave's process variable, Work Habits in the Family; questionnaire items 13-20c were extracted from Dave's process variable, Academic Guidance; questionnaire items 21 to 30 were extracted from Dave's process variable, Activeness of the Family; and questionnaire items 31 to 38 were extracted from Dave's process variable, Achievement Press. Dave also developed interview items related to homework and television viewing. Questionnaire items 39-43 were related to homework, and questionnaire items 44-46 were related to television viewing but were added to the questionnaire based on research other than Dave's.

Data Collection, Recording, and Statistical Analysis

Data collection

Approval from the school district was obtained to use the modified IEE and to conduct the study in their elementary schools. Approval from the Iowa State University Human Subjects Review Committee was also obtained for the study (see Appendix A). A pilot study with a select number of parents was conducted to determine clarity of questions on the survey instrument.

Upon completion of the pilot study, the modified version of the IEE (see Appendix A: Family Activities in the Home) was distributed by teachers to 963 parents of third, fourth, and fifth grade students in the school district at a parent-teacher conference. After completion of the survey instrument, the parent returned it to the researcher. After three weeks, the school district sent a reminder to parents in a parent newsletter to complete the survey and return it as indicated.

To investigate the relationship between the educational environment in the home and the reading achievement level of third, fourth, and fifth grade students, each student's teacher rated the child's level of reading achievement before the IEE was administered to the parents. The rating scale was as follows: 1 = high achieving student; 2 = average achieving student; and 3 = low achieving student.

The following data about each subject were gathered from the survey instrument:

1. Adult filling out the survey instrument;
2. Grade level of student;

3. Age of student;
4. Sex of student;
5. Level of parents' education;
6. IEE response; and
7. Achievement level of student.

Data from returned surveys were collected from RISE (Research Institute for Studies in Education), coded, and entered into the computer.

Recording

The following information was completed and retained for analysis:

1. Sex of student: female-male;
2. Grade level of student: third grade, fourth grade, fifth grade;
3. Level of parents' education: eleventh grade or less, high school only, some college, college degree, advanced degree;
4. Survey items from the modified version of the IEE questions: 9-11, 13-15, 17, 18, 19b, 19c, 20b, 20c, 21-24, 26 27, 33-35, 42, 44 (see Appendix A: Family Activities in the Home); and
5. Achievement level of student in reading: 1 = high achieving student; 2 = average achieving student; 3 = low achieving student.

Analysis of data

The data were analyzed using the Statistical Package for the Social Sciences (SPSS-X) (Norusis, 1988). Initially, descriptive statistics, including frequency counts, percentages, means and variance measures for each response item on the questionnaire were calculated.

Demographic information included adult filling out the survey, sex of student, age of student, grade level of student, education of mother, education of father, and ethnic background of parent filling out the survey.

One of the objectives of the study was to determine whether or not there was more than one underlying dimension to the educational environment in the home. Factor analysis was the statistical tool used to determine whether or not there was more than one underlying dimension to the educational environment in the home. One-way analysis of variance (ANOVA), 2x3 ANOVA, 3x3 ANOVA, and t-test were used to test the null hypotheses in the study at the .05 level of significance.

Summary

This chapter discussed the procedures used to conduct the study. Subject selection, demographic information and the survey instrument were described. The final section of the chapter described the statistical design used in the study. Results were compiled and displayed in appropriate tables in Chapter IV of the study. Chapter IV is concerned with the statistical analyses and interpretation of the data.

CHAPTER IV. RESULTS

The purpose of this study was to investigate several dimensions of the educational environment in the homes of third, fourth, and fifth grade students and their relationship to pertinent variables.

Factor Analysis

One of the objectives of the study was to examine whether or not there is more than one underlying dimension to the educational environment in the home. It was, therefore, considered important to study further four of Dave's process variables in terms of individual items, to give more insight into their groupings. In the present study, survey items from the modified version of the IEE: 7 to 18, 19b, 19c, 20b, 20c, 21 to 31, 33, 34, 35, 39, 40, 41, 45 were used in a factor analysis (see Appendix A: Family Activities in the Home). In the initial analysis, all factors with eigenvalues greater than one were selected, resulting in nine factors. For four of these factors, only two items loaded significantly, which was considered too few to represent a reliable measure of a dimension (Kim, 1978). Therefore, the analysis was rerun, specifying the selection of factors with eigenvalues greater than 1.5. Five factors were extracted. The groupings of the items that emerged from the rotated factor matrix are illustrated in Table 1. Items having loadings .4 or above were retained in each factor. When items had double loadings, the item was retained for the factor with the highest loading (Table 1).

Factor One was labeled Reading and Discussion in the Home. Items which loaded on this factor (13, 21, 22, 23, 24, 26, 27) refer to providing opportunities for children to explore ideas and events in books, magazines, newspapers, and through television programs. According to Dave (1963), exposure to a variety of experiences at an early age promotes the expansion of a child's experiential world. The greater the variety of experiences within the home, the more likely the child will gain general information and profit from learning.

Factor Two was labeled Academic Guidance and Support. Items which loaded on this factor (14, 15, 17, 18) refer to the amount and quality of guidance provided by parents on matters related to school work.

Factor Three was labeled Work Habits of Children and Parents in the Home. Items which loaded on this factor (9, 10, 11) relate to general work habits in the home such as a well-established structure and routine in home management. The variety of roles that the child has to play in a well-managed home appear to be crucial in developing flexibility and quickness in work which are prerequisites of successful learning.

Factor Four was labeled Educational Aspirations and Expectations. Items which loaded on this factor (33, 34, 35) refer to the goals and aspirations parents hold for their children.

Factor Five was labeled Use of the Dictionary and Encyclopedia in the Home. Items which loaded on this factor (19b, 19c, 20b, 20c) refer to reference materials used for studying.

Table 1. Rotated factor matrix

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
24 Discuss stories	.71720				
22 Read books	.57407				
27 Discuss newspapers/magazines	.55326				
21 Bring home books	.54842				
26 Discuss t.v.	.49440				
13 Learning materials	.49312				
23 Read books	.48119				
28 Cultural places	.38694				
25 Read books	.38023				
29 Cultural places	.33678				
14 Discuss school		.73057			
15 Discuss grades		.67241			
17 Discuss school		.52530			
18 Praise schoolwork		.50325			
39 Help with homework		.39966			
16 Know child's subjects		.39421			
40 Help with homework		.32019			
45 Check t.v. programs					
30 Recreational activities					
10 Household chores			.76967		
11 Household chores			.73944		
9 Household chores			.49837		
8 Routine homework		.30439	.36183		
12 Schedule time/eat, sleep			.33315		
7 Schedule time/homework					
41 Place to study					
33 Schooling expectations				.78024	
34 Education/want child				.71911	
35 Min. education expectation				.64696	
31 Importance of education					
20b Use encyclopedias/child					.80759
20c Use encyclopedias/together					.75925
19b Use dictionary/child					.51792
19c Use dictionary/together	.32617				.48924
Eigenvalue	7.23	2.54	2.07	1.68	1.58

For each of the five factors, a reliability coefficient was estimated (Table 2). As seen in Table 2, all but one factor produced coefficients higher than .70.

For purposes of hypothesis testing later in this chapter, factor scores were formed for each subject by averaging scores from the items selected for the factor. Factor means and standard deviations were computed for each of the five factors (Table 3).

Table 2. Reliability analysis/reliability coefficients

Factor	Number of cases	Alpha	Standardized item alpha
1. Reading and discussion in the home	267	.8175	.8200
2. Academic guidance and support	267	.7282	.7776
3. Work habits of children and parents in the home	267	.6658	.6826
4. Educational aspirations and expectations	267	.7509	.7582
5. Use of the dictionary and encyclopedia in the home	267	.8111	.8108

Table 3. Factor means and standard deviations

Factor	Number of cases	Mean	Standard deviation
1. Reading and discussion in the home	459	2.9002	.4826
2. Academic guidance and support	458	3.6336	.3963
3. Work habits of children and parents in the home	457	3.0193	.5265
4. Educational aspirations and expectations	459	3.4851	.5497
5. Use of the dictionary and encyclopedia in the home	451	2.6020	.6017

Correlation coefficients were computed among pairs of factors to provide summary indexes describing the observed strength of the association among the five factors (Table 4). As seen in Table 4, the associations among the factors were not strong.

Analysis of the Null Hypothesis

This section reports results in reference to the five research hypotheses stated in Chapters I and III. The research hypotheses are stated in the null form. A probability level of 0.05 was established as the criterion for rejection of the null.

Table 4. Pearson correlation coefficients

Factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1. Reading and discussion in the home	1.0000 (459) P=	.4691 (458) P=.000	.2962 (457) P=.000	.2124 (459) P=.000	.4424 (451) P=.000
2. Academic guidance and support	.4691 (458) P=.000	1.0000 (458) P=	.3301 (457) P=.000	.1961 (458) P=.000	.3729 (450) P=.000
3. Work habits of children and parents in the home	.2962 (457) P=.000	.3301 (457) P=.000	1.0000 (457) P=	.1077 (457) P=.011	.1377 (449) P=.002
4. Educational aspirations and expectations	.2124 (459) P=.000	.1961 (458) P=.000	.1077 (457) P=.011	1.0000 (459) P=	.1620 (451) P=.000
5. Use of the dictionary and encyclopedia in the home	.4424 (451) P=.000	.3729 (450) P=.000	.1377 (449) P=.002	.1620 (451) P=.000	1.0000 (451) P=

Hypothesis one

For each dimension of the educational environment in the home, there will be no difference among homes where parents are grouped by their level of education. This hypothesis was tested using mother's and father's level of education separately, and for each level, separate analyses were run for the five dimensions of the educational environment

in the home. Thus, ten analyses were carried out to address this hypothesis.

Mother's level of education To determine whether or not significant differences existed for each dimension of the educational environment in the home when homes are grouped by mother's level of education, a one-way analysis of variance (ANOVA) using the Scheffé procedure for measuring the significant differences among more than two means was employed.

The results for the first analysis, Dimension One - Reading and Discussion in the Home, indicates significant differences in reading and discussing in the home occurring between mothers with college education and mothers with high school education and between mothers with college education and mothers with some college (Table 5). Parents in homes where mothers have a college education seemed to spend more time reading and discussing with their children than did parents in homes where mothers have some college or a high school diploma. Homes with mothers who have advanced degrees and mothers with an eleventh grade education or less were not significantly different from homes in any other group. This probably occurred because both groups had small cell sizes (Table 5), and more variability for group one was found.

The results for the second analysis, Dimension Two - Academic Guidance and Support, indicates significant differences which relate to the support parents provide their children on matters related to schoolwork occurring between homes in which mothers have a high school education and homes with mothers who have an eleventh grade education or

Table 5. Measure of significant differences between each of the five dimensions of the educational environment in the home and mother's level of education

Mother's level of education	N	Mean	Standard deviation	Significant differences (p<.05)
Dimension One (Reading and Discussion in the Home)				
1[a]	16	2.97	.44	Between 2 and 4
2[b]	132	3.02	.47	Between 2 and 3
3[c]	140	2.84	.46	
4[d]	142	2.83	.49	
5[e]	26	2.76	.40	
Dimension Two (Academic Guidance and Support)				
1	16	3.64	.41	Between 4 and 5
2	131	3.67	.37	Between 2 and 5
3	140	3.61	.39	
4	142	3.65	.37	
5	26	3.37	.52	
Dimension Three (Work Habits of Children and Parents in the Home)				
1	16	3.02	.50	Between 2 and 5
2	130	3.10	.49	
3	140	3.00	.52	
4	142	3.02	.51	
5	26	2.67	.65	
Dimension Four (Educational Aspirations and Expectations)				
1	16	3.95	.48	Between 3 and 5
2	132	3.70	.44	Between 3 and 4
3	140	3.55	.46	Between 2 and 5
4	142	3.24	.54	Between 2 and 4,
5	26	3.12	.71	1 and 5, 1 and 4
Dimension Five (Use of the Dictionary and Encyclopedia in the Home)				
1	16	2.50	.36	No two
2	130	2.64	.55	groups are
3	140	2.57	.62	significantly
4	137	2.64	.62	different
5	25	2.36	.66	

[a]1 = Advanced degree (Master's or above).
[b]2 = College degree.
[c]3 = Some college.
[d]4 = High school only.
[e]5 = Eleventh grade or less.

less and between homes in which mothers have a college education and those in which mothers have an eleventh grade education or less (Table 5). Parents in homes with college educated mothers and those with high school educated mothers seem to give more academic guidance and support to their children than those in homes where mothers have an eleventh grade education or less. The response indicates that academic guidance and support was relatively highest in homes in which the mother had a college degree and lowest in homes in which the mother had eleventh grade or less education. Parents in the first four groups seemed quite similar with regard to this dimension.

The results for the third analysis, Dimension Three - Work Habits of Children and Parents in the Home, indicate a significant difference occurring between homes with college educated mothers and those with mothers who have an eleventh grade education or less (Table 5). Parents in the former group seem to be more involved with structure or work habits in the home than those in the latter group. For this dimension, there seemed to be a great deal of similarity among parents in the first four groups in terms of their effort to provide structure in the home. Parents in these groups seem to be equally involved in this aspect, irrespective of their level of education.

The results for the fourth analysis, Dimension Four - Educational Aspirations and Expectations, indicates that the educational aspirations and expectation of parents for their children were different depending upon the mother's educational level (Table 5). The highest educational aspiration and expectation came from homes with mothers with a college

education or more and the level of aspiration decreased as the level of the mother's education decreased. There was no difference between groups in which mothers had at least some college, college, or advanced education. These groups seem to expect more than those with mothers who did not experience college life.

The results for the fifth analysis, Dimension Five - Use of the Dictionary and Encyclopedia in the Home, indicate that the groups were essentially the same irrespective of the level of education attained by the mothers (Table 5).

Father's level of education To determine whether or not significant differences existed for each dimension of the educational environment in the home among fathers grouped by level of education, a one-way analysis of variance (ANOVA) using the Scheffé procedure for measuring the significant differences among more than two means was employed.

The results for the first analysis, Dimension One - Reading and Discussion in the Home, indicate significant differences in reading and discussing in the home occurring between homes with fathers who have advanced education and those with fathers who have an eleventh grade education or less (Table 6). Parents in homes where fathers have an advanced education seem to spend more time reading and discussing with their children than did those with fathers who have an eleventh grade education or less.

The results for the second analysis, Dimension Two - Academic Guidance and Support, indicate that the homes were essentially the

Table 6. Measure of significant differences between each of the five dimensions of the educational environment in the home and father's level of education

Father's level of education	N	Mean	Standard deviation	Significant differences ($p<.05$)
	Dimension One (Reading and Discussion in the Home)			
1[a]	38	3.12	.39	Between 1 and 5
2[b]	105	2.98	.47	
3[c]	106	2.85	.46	
4[d]	112	2.86	.49	
5[e]	28	2.71	.59	
	Dimension Two (Academic Guidance and Support)			
1	38	3.71	.38	No two groups
2	105	3.68	.33	are
3	105	3.59	.43	significantly
4	112	3.61	.38	different
5	28	3.50	.45	
	Dimension Three (Work Habits of Children and Parents in the Home)			
1	38	3.14	.43	No two groups
2	104	3.14	.46	are
3	105	3.00	.50	significantly
4	112	2.96	.56	different
5	28	3.02	.61	
	Dimension Four (Educational Aspirations and Expectations)			
1	38	4.04	.42	Between 4 and 5
2	105	3.65	.43	Between 3 and 5
3	106	3.45	.46	Between 2 and 5 2 and 4
4	112	3.32	.55	Between 1 and 5,
5	28	2.97	.70	1 and 4, 1 and 3 1 and 2

[a]1 = Advanced degree (Master's or above).
[b]2 = College degree.
[c]3 = Some college.
[d]4 = High school only.
[e]5 = Eleventh grade or less.

Table 6. (Continued)

Father's level of education	N	Mean	Standard deviation	Significant differences ($p<.05$)
	Dimension Five (Use of the Dictionary and Encyclopedia in the Home)			
1	38	2.80	.49	Between 2 and 4
2	104	2.73	.52	Between 1 and 4
3	103	2.59	.59	
4	110	2.46	.56	
5	26	2.41	.80	

same, irrespective of the level of education attained by the father (Table 6).

The results for the third analysis, Dimension Three - Work Habits of Children and Parents in the Home, indicate also that no two groups were significantly different. Parents providing structure in the home were essentially the same, irrespective of the level of education attained by the father (Table 6).

The results for the fourth analysis, Dimension Four - Educational Aspirations and Expectations, indicate that parents in homes where fathers have higher levels of education generally had higher educational aspirations and expectations for their children (Table 6). There was a direct relationship between the father's level of education and parents' level of educational aspiration and expectations for their children. Those in homes where fathers had advanced education had significantly higher expectations for their children than any other group of fathers.

All other groups had significantly higher educational aspirations and expectations for their children than those with fathers having only an eleventh grade education or less.

The results for the fifth analysis, Dimension Five - Use of the Dictionary and Encyclopedia in the Home, indicate that significant differences occurred between homes in which fathers had advanced education and those in which fathers had a high school education and between homes where fathers had a college education and those where fathers had only a high school education (Table 6). The higher the educational level of the father, the more dictionaries and encyclopedias are used in the home.

Hypothesis two

For each dimension of the educational environment in the home, there will be no significant interaction between student gender and level of parents' education. When one uses Dimension One - Reading and Discussion in the Home as an example, the pattern of reading and discussion in the home observed for different levels of parents' education does not change when males and females are examined separately.

For each of the five dimensions of the educational environment in the home, it was desired to determine whether an interaction existed between level of parents' education (mothers' and fathers' separately) and sex of child. Thus, ten two-way analyses of variance were conducted (Tables 7-16). In these analyses, only three levels of parents'

Table 7. Analysis of variance of Reading and Discussion in the Home by sex of child and education of mother

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.579	.579	2.587	.108
Education of mother	2	3.616	1.808	8.077	.000**
Interaction	2	.319	.159	.712	.491
Explained	5	4.491	.898	4.013	.001**
Residual	440	98.479	.224		
Total	445	102.970	.231		

**p < .01.

Table 8. Analysis of variance of Academic Guidance and Support by sex of child and education of mother

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.733	.733	4.808	.029*
Education of mother	2	.328	.164	1.077	.341
Interaction	2	.467	.233	1.531	.217
Explained	5	1.537	.307	2.018	.075
Residual	440	67.036	.152		
Total	445	68.573	.154		

*p < .05.

Table 9. Analysis of variance of Work Habits of the Children and Parents in the Home by sex of child and education of mother

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.053	.053	.193	.660
Education of mother	2	1.464	.732	2.663	.071
Interaction	2	.147	.073	.267	.766
Explained	5	1.667	.333	1.213	.302
Residual	440	120.936	.275		
Total	445	122.603	.276		

Table 10. Analysis of variance of Educational Aspirations and Expectations by sex of child and education of mother

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.978	.978	3.979	.047*
Education of mother	2	19.902	9.951	40.493	.000**
Interaction	2	.202	.101	.411	.663
Explained	5	21.091	4.218	17.164	.000**
Residual	440	108.129	.246		
Total	445	129.220	.290		

*p < .05.
**p < .01.

Table 11. Analysis of variance of Use of the Dictionary and Encyclopedia in the home by sex of child and education of mother

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.005	.005	.014	.906
Education of mother	2	.131	.065	.179	.836
Interaction	2	.342	.171	.467	.627
Explained	5	.479	.096	.262	.934
Residual	440	161.042	.366		
Total	445	161.521	.363		

Table 12. Analysis of variance of Reading and Discussion in the Home by sex of child and education of father

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.416	.416	1.812	.179
Education of father	2	3.009	1.504	6.553	.002**
Interaction	2	.699	.349	1.521	.220
Explained	5	4.042	.808	3.521	.004**
Residual	373	85.634	.230		
Total	378	89.676	.237		

**p < .01.

Table 13. Analysis of variance of Academic Guidance and Support by sex of child and education of father

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.460	.460	3.014	.083
Education of father	2	.685	.342	2.246	.107
Interaction	2	.093	.047	.306	.736
Explained	5	1.281	.256	1.680	.139
Residual	373	56.881	.152		
Total	378	58.162	.154		

Table 14. Analysis of variance of Work Habits of the Children and Parents in the Home by sex of child and education of father

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.060	.060	.228	.634
Education of father	2	2.415	1.207	4.559	.011*
Interaction	2	.012	.006	.022	.978
Explained	5	2.516	.503	1.900	.094
Residual	373	98.787	.265		
Total	378	101.303	.268		

*p < .05.

Table 15. Analysis of variance of Educational Aspirations and Expectations by sex of child and education of father

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.767	.767	2.978	.085
Education of father	2	16.979	8.489	32.977	.000**
Interaction	2	.317	.158	.616	.541
Explained	5	18.278	3.656	14.200	.000**
Residual	373	96.022	.257		
Total	378	114.300	.302		

**p < 01.

Table 16. Analysis of variance of Use of the Dictionary and Encyclopedia in the home by sex of child and education of father

Source	df	Sum of squares	Mean square	F-ratio	p
Sex of child	1	.006	.006	.019	.891
Education of father	2	5.929	2.964	8.929	.000**
Interaction	2	1.186	.593	1.786	.169
Explained	5	7.115	1.423	4.286	.001**
Residual	373	123.837	.332		
Total	378	130.952	.346		

**p < .01.

education were employed. Due to small cell sizes, parents with advanced degrees were combined with those having a college education, and those with an eleventh grade education or less were combined with those having a high school degree.

In no case was the interaction significant. The null hypothesis was not rejected. This suggests that the findings reported above (Hypothesis 1), concerning parent behavior in homes grouped by level of parent education, do not change when male and female children are examined separately.

In reference to five of the two-way ANOVAs, which included the educational level of the mother, an unexpected result of the analyses was the finding of a significant main effect for sex of child for two dimensions (Dimension Two - Academic Guidance and Support and Dimension Four - Educational Aspirations and Expectations) (Tables 8 and 10). This suggests that in general parents give more academic guidance and support and hold higher educational aspirations for their male children than for their female children.

The fact that sex of child was not significant for these two dimensions in the analyses done with fathers' level of education was due to the fact that there were missing data for the educational level of the father, and as a result, many cases were not included in the ANOVAs.

In order to examine this more thoroughly, the means and standard deviations for all subjects on all dimensions were tabulated and are shown in Table 3. Independent t-tests with all subjects confirmed the results found in the ANOVAs done with mothers' level of education

(Table 17). As can be seen, somewhat more academic guidance and support is reported for male children than for female children. Similarly, parents' educational aspirations and expectations are significantly higher for male children than for female children.

Hypothesis three

For each dimension of the educational environment in the home, there will be no difference among amounts of time spent on homework.

To determine whether or not significant differences existed for each dimension of the educational environment in homes grouped by time spent on homework, a one-way analysis of variance (ANOVA) using the Scheffé procedure for measuring the significant differences among more than two means was employed.

The results for the first analysis, Dimension One - Reading and Discussion in the Home, indicates significant differences in reading and discussing in the home occurring between homes in which the child spends less than one hour per day per school week on homework and those in which the child spends more than one hour per day per school week on homework (Table 18). It seems that parents of children who spend more than one hour per day per school week on homework spend more time reading and discussing ideas and events in the home with their children than did parents of children who spend less than one hour per day per school week on homework.

The results for the second analysis, Dimension Two - Academic Guidance and Support, indicate that parents were essentially the same

Table 17. For each dimension of the educational environment in the home, results of independent t-test for differences between male and female children

Sex of child	N	Mean	Standard deviation	t-value	2-tailed probability
		Dimension One (Reading and Discussion in the Home)			
Males	217	2.85	.51	-1.86	.064
Females	242	2.93	.44		
		Dimension Two (Academic Guidance and Support)			
Males	217	3.67	.39	2.12	.035*
Females	241	3.59	.39		
		Dimension Three (Work Habits of Children and Parents in the Home)			
Males	217	3.03	.54	0.50	.618
Females	240	3.00	.50		
		Dimension Four (Educational Aspirations and Expectations)			
Males	217	3.54	.53	2.15	.032*
Females	242	3.43	.55		
		Dimension Five (Use of the Dictionary and Encyclopedia in the Home)			
Males	212	2.60	.63	0.60	.953
Females	239	2.60	.57		

*p < .05.

when providing academic guidance and support, irrespective of time spent on homework (Table 18).

The results for the third analysis, Dimension Three - Work Habits of Children and Parents in the Home, indicate that parents also were essentially the same when providing structure and routine in home management, irrespective of time spent on homework (Table 18).

Table 18. Measure of significant differences between each of the five dimensions of the educational environment in the home and time spent on homework

Time spent on homework	N	Mean	Standard deviation	Significant differences (p<.05)
	Dimension One (Reading and Discussion in the Home)			
1[a]	70	3.05	.42	Between 1 and 3
2[b]	124	2.92	.48	
3[c]	260	2.84	.47	
	Dimension Two (Academic Guidance and Support)			
1	70	3.69	.34	No two groups
2	124	3.69	.36	are signifi-
3	259	3.58	.41	cantly different
	Dimension Three (Work Habits of Children and Parents in the Home)			
1	70	3.03	.55	No two groups
2	124	3.05	.49	are signifi-
3	258	2.99	.53	cantly different
	Dimension Four (Educational Aspirations and Expectations)			
1	70	3.40	.64	No two groups
2	124	3.41	.61	are signifi-
3	260	3.54	.48	cantly different
	Dimension Five (Use of the Dictionary and Encyclopedia in the Home)			
1	69	2.77	.58	Between 1 and 3
2	120	2.79	.62	Between 2 and 3
3	257	2.46	.56	

[a]1 = More than 1 hour each day.
[b]2 = 1 hour each day.
[c]3 = Less than 1 hour each day.

The results for the fourth analysis, Dimension Four - Educational Aspirations and Expectations, indicate that parents were essentially the same when setting goals for their child's educational pursuits, irrespective of time spent on homework (Table 18).

The results for the fifth analysis, Dimension Five - Use of the Dictionary and Encyclopedia in the Home, indicates that significant differences occurred between parents whose child spends less than one hour per day per school week on homework and parents whose child spends more than one hour per day per school week on homework and between parents whose child spends less than one hour per day per school week on homework and parents whose child spends one hour per day per school week on homework (Table 18). It seems that children who spend one hour or more on homework each day per school week use the dictionary and encyclopedia more in the home than children who spend less than one hour per day per school week on homework.

Hypothesis four

For each dimension of the educational environment in the home, there will be no difference between homes in which children watch over ten hours of television per school week and between homes in which children watch ten hours or less of television per school week.

To determine whether or not a significant difference existed for each dimension of the educational environment in the home between children who watch over ten hours of television per school week and children who watch ten hours or less of television per school week, an independent t-test was conducted.

For Dimension One - Reading and Discussion in the Home, Dimension Two - Academic Guidance and Support, and Dimension Four - Educational Aspirations and Expectations, there was no significant difference found

between homes in which children watch over ten hours of television per school week and those in which children who watch ten hours or less of television per school week (Table 19). It appears that parents were similar when reading and discussing with their children, when providing academic guidance and support, and when setting educational aspirations and expectations for their children, irrespective of the number of hours the child watches television. There was, however, a significant difference found for Dimension Three - Work Habits of Children and Parents in the Home, and Dimension Five - Use of the Dictionary and Encyclopedia in the Home. It appears that families are more involved with household chores in homes where children watch ten hours or less of television per school week than in homes where children watch over ten hours of television per school week. It also appears that dictionaries and encyclopedias are used more in homes where children watch ten hours or less of television per school week than when children watch over ten hours of television per school week.

Hypothesis five

For each dimension of the educational environment in the home, there will be no significant difference among grade level (third, fourth, fifth) of the child. In order to address this hypothesis, as well as hypotheses six and seven, a two-way analysis of variance was conducted for each of the five dimensions (Tables 20-24).

A significant main effect for grade level on one dimension (Dimension One - Reading and Discussion in the Home) (Table 20) was

Table 19. For each dimension of the educational environment in the home, results of t-test for differences between children who watch ten hours or less of television per school week and children who watch over ten hours of television per school week

Number of hours watching television per school week	N	Mean	Standard deviation	t-value	2-tailed probability
		Dimension One (Reading and Discussion in the Home)			
>10	172	2.85	.51	-1.54	.124
<10	287	2.92	.46		
		Dimension Two (Academic Guidance and Support)			
>10	172	3.60	.39	-1.05	.295
<10	286	3.64	.40		
		Dimension Three (Work Habits of Children and Parents in the Home)			
>10	172	2.94	.56	-2.36	.019
<10	285	3.06	.50		
		Dimension Four (Educational Aspirations and Expectations)			
>10	172	3.45	.61	-0.92	.359
<10	287	3.50	.50		
		Dimension Five (Use of the Dictionary and Encyclopedia in the Home)			
>10	168	2.50	.57	-2.59	.010
<10	283	2.65	.61		

Table 20. Analysis of variance of Reading and Discussion in the Home by grade level and reading achievement level

Source	df	Sum of squares	Mean square	F-ratio	p
Grade level	2	2.536	1.268	5.750	.003**
Reading achievement level	2	1.450	.725	3.288	.038*
Interaction	4	1.651	.413	1.872	.114
Explained	8	6.076	.759	3.443	.001**
Residual	437	96.385	.221		
Total	445	102.461	.230		

*p < .05.
**p < .01.

Table 21. Analysis of variance of Academic Guidance and Support by grade level and reading achievement level

Source	df	Sum of squares	Mean square	F-ratio	p
Grade level	2	.412	.206	1.350	.260
Reading achievement level	2	.773	.386	2.534	.080
Interaction	4	.609	.152	.998	.409
Explained	8	1.773	.222	1.453	.172
Residual	437	66.645	.153		
Total	445	68.418	.154		

Table 22. Analysis of variance of Work Habits of the Children and Parents in the Home by grade level and reading achievement level

Source	df	Sum of squares	Mean square	F-ratio	p
Grade level	2	.177	.088	.316	.729
Reading achievement level	2	.267	.133	.477	.621
Interaction	4	1.010	.253	.904	.461
Explained	8	1.402	.175	.627	.755
Residual	437	122.090	.279		
Total	445	123.492	.278		

Table 23. Analysis of variance of Educational Aspirations and Expectations by grade level and reading achievement level

Source	df	Sum of squares	Mean square	F-ratio	p
Grade level	2	.692	.346	1.230	.293
Reading achievement level	2	6.152	3.076	10.930	.000**
Interaction	4	.784	.196	.697	.594
Explained	8	7.338	.917	3.260	.001**
Residual	437	122.975	.281		
Total	445	130.313	.293		

**p < .01.

Table 24. Analysis of variance of Use of the Dictionary and Encyclopedia in the Home by grade level and reading achievement level

Source	df	Sum of squares	Mean square	F-ratio	p
Grade level	2	1.535	.767	2.167	.116
Reading achievement level	2	4.581	2.291	6.469	.002**
Interaction	4	.976	.244	.689	.600
Explained	8	6.552	.819	2.313	.019**
Residual	437	154.733	.354		
Total	445	161.284	.362		

**p < .01.

found. Post hoc analysis clarified the results found in the ANOVA in reference to this significant main effect (Table 25). The significant effect for grade level indicates a significant difference in reading and discussion in the home occurring between third grade students and fifth grade students (Table 25). It seems that parents of third grade students spend more time reading and discussing in the home with their children than parents of fifth grade students.

Hypothesis six

For each dimension of the educational environment in the home, there will be no significant differences among students grouped by teacher perception of reading achievement. A significant main effect for reading achievement on three dimensions (Dimension One - Reading and Discussion in the Home, Dimension Four - Educational Aspirations and

Table 25. Measure of significant differences between each of the five dimensions of the educational environment in the home and grade level of child

Grade level of child	N	Mean	Standard deviation	Significant differences ($p<.05$)
	Dimension One (Reading and Discussion in the Home)			
1[a]	135	3.02	.51	Between 1 and 3
2[b]	145	2.90	.46	
3[c]	179	2.80	.46	
	Dimension Two (Academic Guidance and Support)			
1	135	3.65	.41	No two groups
2	144	3.66	.36	are signifi-
3	179	3.59	.40	cantly different
	Dimension Three (Work Habits of Children and Parents in the Home)			
1	135	3.00	.52	No two groups
2	144	3.04	.50	are signifi-
3	178	3.00	.54	cantly different
	Dimension Four (Educational Aspirations and Expectations)			
1	135	3.46	.60	No two groups
2	145	3.54	.48	are signifi-
3	179	3.45	.55	cantly different
	Dimension Five (Use of the Dictionary and Encyclopedia in the Home)			
1	133	2.53	.71	No two groups
2	143	2.60	.51	are signifi-
3	175	2.64	.57	cantly different

[a]1 = Third grade.
[b]2 = Fourth grade.
[c]3 = Fifth grade.

Expectations, and Dimension Five - Use of the Dictionary and Encyclopedia in the Home) (Tables 20, 23, and 24) was found. Post hoc analysis clarified the results found in the ANOVA in reference to the significant main effect for reading achievement level (Table 26).

The significant main effect for reading achievement level, in reference to the first analysis, Dimension One - Reading and Discussion in the Home, indicates a significant difference occurring between high achieving students in reading and low achieving students in reading (Table 26). It seems that parents of high achieving students in reading spend more time reading and discussing in the home with their children than parents of low achieving students in reading.

The results for the fourth analysis, Dimension Four - Educational Aspirations and Expectations, indicate a significant difference occurring between average achieving students in reading and high achieving students in reading and between low achieving students in reading and high achieving students in reading (Table 26). It seems that parents of high achieving students in reading have higher educational aspirations and expectations for their children than parents of students who are average or low achievers in reading. The results for the fifth analysis, Dimension Five - Use of the Dictionary and Encyclopedia in the Home, indicate a significant difference occurring between high achieving students in reading and low achieving students in reading and between average achieving students in reading and low achieving students in reading (Table 26). It seems that the dictionary

Table 26. Measure of significant differences between each of the five dimensions of the educational environment in the home and the reading achievement level of the student

Reading achievement level of student	N	Mean	Standard deviation	Significant differences ($p<.05$)
	Dimension One (Reading and Discussion in the Home)			
1[a]	159	2.98	.45	Between 1 and 3
2[b]	169	2.86	.48	
3[c]	128	2.83	.50	
	Dimension Two (Academic Guidance and Support)			
1	158	3.69	.36	No two groups
2	169	3.60	.39	are signifi-
3	128	3.60	.42	cantly different
	Dimension Three (Work Habits of Children and Parents in the Home)			
1	157	3.03	.52	No two groups
2	169	2.99	.52	are signifi-
3	128	3.02	.54	cantly different
	Dimension Four (Educational Aspirations and Expectations)			
1	159	3.60	.53	Between 2 and 3
2	169	3.51	.48	Between 1 and 3
3	128	3.29	.59	
	Dimension Five (Use of the Dictionary and Encyclopedia in the Home)			
1	157	2.73	.57	Between 1 and 3
2	168	2.54	.54	Between 1 and 2
3	123	2.50	.68	

[a]1 = High achieving student.
[b]2 = Average achieving student.
[c]3 = Low achieving student.

and encyclopedia are used more in the homes of students who are high to average achievers in reading than in homes whose students are low achievers in reading.

Hypothesis seven

For each dimension of the educational environment in the home, there will be no significant interaction between grade level (third, fourth, fifth) and teacher perceptions of students' reading achievement level (high, average, low). In other words, when one uses Dimension One - Reading and Discussion in the Home as an example, the pattern of reading and discussion in the home observed for different reading achievement levels does not change with different grade levels, or the pattern of reading and discussion in the home observed for different grade levels does not change with different reading achievement levels.

For each dimension of the educational environment in the home, the interaction was not significant (Tables 20-24). The null hypothesis was not rejected. This suggests that the findings reported above for grade level do not change when the ability groups are examined separately. Neither do the findings for ability group change when grade levels are examined separately.

Summary

This chapter has presented an analysis of responses of parents to the items listed on the modified version of the IEE.

There were two objectives in the study. A summary in reference to the two objectives of the study is presented:

The first objective was to examine whether or not there is more than one underlying dimension to the educational environment in the home.

Survey items from the modified version of the Index of Educational Environment were used in a factor analysis. Five factors were extracted: Reading and Discussion in the Home; Academic Guidance and Support; Work Habits of Children and Parents in the Home; Educational Aspirations and Expectations; and Use of the Dictionary and Encyclopedia in the Home. For each of the five factors, a reliability coefficient was estimated. All but one factor (Work Habits of Children and Parents in the Home) produced coefficients higher than .70.

The second objective was to test hypotheses in which pertinent relationships among variables have been formulated. There were seven null hypotheses tested. The first null hypothesis stated that, for each dimension of the educational environment in the home, there will be no significant difference among homes when parents are grouped by their level of education. In general, findings suggest that mothers and fathers who have experienced college life do more reading and discussing in the home and hold higher educational aspirations and expectations for their children than do mothers and fathers who did not experience college life. Findings also suggest that parents in homes in which mothers have experienced college life provide more academic guidance and support for their children and do more household chores as a family than parents in homes in which mothers did not experience college life. No such results were found when homes were grouped by fathers' educational level. However, it was found that parents in homes in which fathers have

experienced college life use the dictionary and encyclopedia in the home more than parents in homes with fathers who did not experience college life.

The second null hypothesis stated that, for each dimension of the educational environment in the home, there will be no significant interaction between student gender and level of parents' education. Results showed that in no case was the interaction significant. The null hypothesis was not rejected. This suggests that the findings reported concerning parent behavior in homes grouped by level of parents' education do not change when male and female children are examined separately. For example, when one uses Dimension One - Reading and Discussion in the Home, the pattern of reading and discussion in the home observed for different levels of parents' education does not change when males and females are examined separately.

For the second null hypothesis, however, there was an unexpected main effect for sex of child for two dimensions: Academic Guidance and Support and Educational Aspirations and Expectations. The findings indicate that generally parents give more academic guidance and support and hold higher educational aspirations and expectations for their male children than for their female children.

The third null hypothesis stated that, for each dimension of the educational environment in the home, there will be no difference among homes which differ in the amount of time spent on homework. Findings suggest that parents in homes where children spend one or more hours on homework each day per school week spend more time reading and discussing

in the home with their children. In addition, the dictionary and encyclopedia are used more in these homes than in homes where children spend less than one hour per day per school week on homework.

The fourth null hypothesis stated that, for each dimension of the educational environment in the home, there will be no significant difference between homes in which children watch over ten hours of television per school week and between homes in which children watch ten hours or less of television per school week. Findings imply that families are more involved with household chores and the dictionary and encyclopedia are used more in homes where children watch ten hours or less of television per school week than in homes where children watch more than ten hours of television per school week.

The fifth null hypothesis stated, for each dimension of the educational environment in the home, there will be no significant difference among grade levels of children. Findings suggest that parents of third grade students spend more time reading and discussing in the home with their children than parents of fifth grade students.

The sixth null hypothesis stated that, for each dimension of the educational environment in the home, there will be no significant difference among students grouped by teacher perception of reading achievement. In this study, the findings indicate that parents of students who are high achievers in reading spend more time reading and discussing in the home with their children, and hold higher educational aspirations and expectations for their children than parents of average

or low achievers. In addition, the dictionary and encyclopedia are used more in homes of high achieving students in reading than in those of other groups.

The seventh null hypothesis stated, for each dimension of the educational environment in the home, there is no significant interaction between grade level and teacher perceptions of third, fourth, and fifth grade students' reading achievement level. The null hypothesis was not rejected. This suggests that the findings reported for grade level do not change when the ability groups are examined separately. Neither do the findings for ability groups change when grade levels are examined separately.

CHAPTER V. DISCUSSION, CONCLUSION, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

This study investigated several dimensions of the educational environment in the homes of third, fourth, and fifth grade students and their relationship to: (1) parents' level of education; (2) student gender; (3) time spent on homework; (4) the number of hours spent watching television; and (5) teacher perceptions of students' reading achievement level. This chapter discusses the findings of the study. A conclusion, implications, and recommendations for future research are presented.

Discussion

There were two objectives in the study. The first objective was to examine whether or not there is more than one underlying dimension to the educational environment in the home. As discussed in Chapter Three, items on the questionnaire (see Appendix A: Family Activities in the Home) were extracted from Dave's (1963) interview schedule. All items from Dave's schedule were not used in this study. In the Dave study, he grouped items in his interview schedule under six categories, which he called process variables. Items used in the present study were extracted from four of Dave's process variables: Achievement Press, Academic Guidance, Activeness of the Family, and Work Habits in the Family. Based on a factor analysis, findings revealed that there were five dimensions to the educational environment in the home. The five dimensions revealed

in this study were similar to Dave's process variables formulated in his study in 1963.

Another study (Marjoribanks, 1978) used items from the instrument (IEE) Dave developed in 1963 in a factor analysis. Marjoribanks found six factors labeled parents' expectations for the child, expectations for themselves, concern for the use of language within the family, reinforcement of educational expectations, knowledge of child's educational progress, and family involvement in educational activities.

Evidence from the Dave (1963) study, the Marjoribanks study (1978), and the present study suggests that there is more than one underlying dimension to the educational environment in the home. The review of the literature indicated that there was no other research attempting to further examine Dave's process variables to gain more insight into their groupings.

The second objective was to test hypotheses in which pertinent relationships among variables have been formulated. There were seven null hypotheses tested. The first null hypothesis stated, for each dimension of the educational environment in the home, there will be no significant difference among homes when parents are grouped by their level of education. The null hypothesis was rejected.

Findings suggest that parents vary in their attitude toward education and educational opportunities and experiences they provide for their children as a result of the educational level of the parents. These findings support other research (Plowden, 1967; Fraser, 1959; Marjoribanks, 1979; Keeves, 1972; Baker, 1986; Marjoribanks, 1984).

Parents with more exposure to education or formal schooling may transmit language, values, and processes to their children which are similar to school values and processes, partly because they understand the educational system and partly because they usually have contact with the child's school. Because of this similarity, the "interactional processes" that these children learn to master at home will have adaptive value in school learning (Laosa, 1982). Therefore, insofar as the children of the more highly schooled parents learn to master school-like "interactional processes" in the home, they will have an advantage over the children of the lower-schooling parents since the latter, by contrast, learn to master in their homes processes that have comparatively little adaptive value to school learning (Laosa, 1982).

The second null hypothesis stated, for each dimension of the educational environment in the home, there will be no significant interaction between student gender and level of parents' education. The null hypothesis was not rejected. This suggests that the findings reported concerning parent behavior in homes grouped by level of parents' education do not change when male and female children are examined separately. For example, when one uses Dimension One - Reading and Discussion in the Home, the pattern of reading and discussion in the home observed for different levels of parents' education does not change when males and females are examined separately.

However, a significant main effect was found suggesting that parents hold higher educational aspirations and expectations and give more academic guidance and support to their male children than to their female

children. Several studies support these findings (Laosa, 1982; Treiman, 1974; Keeves, 1972). Parents, especially mothers, consider education somewhat less important for their daughters than for their sons. According to Anderson (1980) and Baker (1987), these findings probably reflects the fact that the average mother's education is significantly lower than the average father's education.

The process of "observational learning" has been suggested as one of the ways in which children absorb social norms, especially those associated with sex-appropriate qualities of behavior. According to this hypothesis, parents exhibit behaviors which children imitate and later adopt as part of their own behavior repertoire; if important female models exhibit different behavior patterns than comparable male models, then girls and boys will exhibit different behavior patterns.

In relationship to general achievement, girls exhibit different achievement choices and have lower expectancies than boys because mothers exhibit different achievement behaviors and have lower achievement expectancies than fathers. This holds true, especially in relationship to math and science (Entwisle, 1983). The sample in this study was 97.8% Caucasian, 92.4% of whom were mothers. While gender differences were pinpointed for parents' aspirations and expectations, these differences may not be found in relationship to other ethnic groups such as African-Americans.

Interaction between mothers' relationship with their sons and daughters at an early age and school experiences leads to student roles that are less than gender equal. Mothers probably do not even appreciate

how the subtleties of their daily interaction with their children may affect the child's academic self-image. The implications of this early maternal influence occurring at an early point in the schooling process, and accumulating over time, may go far toward influencing the educational and occupational aspirations for their children.

The third null hypothesis stated, for each dimension of the educational environment in the home, there will be no difference among homes which differ in the amount of time spent on homework. The null hypothesis was rejected.

Historically, the popular press became concerned with homework as early as 1913. Most studies agree that homework benefits student achievement or at least does not harm student achievement. When homework is regularly assigned by the teacher, clearly stated by the teacher, regularly collected, promptly graded and promptly returned by the teacher, homework produces greater gains in school performance (Foyle, 1988). The amount, quality, and usefulness of homework depend upon the teacher and student. Research clearly indicates that greater amounts and higher standards of homework would benefit students' learning (Walberg, 1985).

Results from the present study suggest that those students who spend more time on homework produce more parental interaction in the home than in homes where students spend less time on homework. Parents in homes where children spend one or more hours on homework each day per school week spend more time reading and discussing in the home with their children, and the dictionary and encyclopedia are used more in these

homes than in homes where children spend less than one hour per day per school week on homework. These findings may also suggest that parents who spend time on these two activities spend time on other activities as well, such as monitoring and supervising homework assignments and providing help with homework if needed. These findings may also suggest that parents whose children spend more time on homework have a more positive attitude towards homework than parents whose children spend less time on homework.

Parents must value homework as a component of school success. According to Keith (1987), parental influence on time spent on homework has an indirect effect on grades. Families must see homework as a way of extending knowledge and providing practice in newly learned skills, not as busy work (Casanova, 1987).

The fourth null hypothesis stated, for each dimension of the educational environment in the home, there will be no significant difference between homes in which children watch over ten hours of television per school week and between homes in which children watch ten hours or less of television per school week. The null hypothesis was rejected.

It is widely believed that television viewing has a negative impact on school achievement. This belief is supported by negative statistical associations sometimes found between school achievement and amount of television viewing. Anderson (1988) found no support for most of the common beliefs about the influence of television. According to Anderson (1988), it is still difficult to conclude that television has no major

effects. Research has been lacking on a number of major issues. Also, some of the existing research can be challenged on methodological grounds.

Findings in the present study, which relate to the amount of television children watch in the home, suggest that children who watch ten hours or less of television are more involved with household chores and the dictionary and encyclopedia are used more in the home than in homes where children watch more than ten hours of television per school week. Children who watch more television spend less time on activities such as using the dictionary and encyclopedia in the home, which may be related to doing homework. However, there is little evidence that television viewing displaces homework. According to research, homework is often done concurrent with television viewing.

Children and their families are active agents in their choices of activities. In homes in which children spend more time on activities such as household chores and dictionary and encyclopedia use in the home, the involvement in these activities may stem from factors other than the amount of television viewed. These factors relate to such things as parent education and occupation, attitude toward television and the perceived availability of alternatives. Earlier findings in the study suggested that parents with more education are more involved with household chores, and the dictionary and encyclopedia are used more in the home than parents with less education. It could be that when the amount of television viewing is controlled, factors such as parents' educational level may determine the totality of activities engaged in

by children in the home moreso than by the amount of television viewed.

The fifth null hypothesis stated, for each dimension of the educational environment in the home, there will be no significant difference among grade level of children. The null hypothesis was rejected.

A finding in the study suggests that parents of third grade students spend more time reading and discussing in the home with their children than parents of fifth grade students. This finding agrees with Baker (1987), that the age of the child may influence the degree of parental involvement. Less parental involvement as the child gets older may imply that as children become older, they become more independent. Parents may understand the importance of early schooling and value their involvement at this point in the child's school career. Parents might also disengage from school activities once they feel the child is on the "right track". Or, it may be that parents feel more competent to help younger children than older ones.

The sixth null hypothesis stated, for each dimension of the educational environment in the home, there will be no significant difference among students grouped by teacher perception of reading achievement. The null hypothesis was rejected.

Findings related to reading achievement suggest that, in general, parents of students who are high achievers in reading spend more time reading and discussing in the home with their children, hold higher educational aspirations and expectations for their children, and use the

dictionary and encyclopedia more in the home than parents of average to low achievers in reading. These findings are supported by other research (Shea, 1977; Plowden, 1967; Wiseman, 1967; Becher, 1983; Teal, 1978; Dave, 1963; Fraser, 1959). While these factors may be related to reading achievement, many other factors enter into the complex development of language abilities.

Wiseman's (1967) findings suggest that economic level and social class are much less important than aspects of parental attitude, attitude toward education, and attitude toward books and reading. "A middle class home does not guarantee a favorable background for educational progress, and literate homes with good parental attitudes toward school may be found in the slums as well as in the suburbs" (Wiseman, 1967, p. 382). While this may be true, research clearly indicates that literate homes and positive attitudes toward education and books are usually found in middle class homes. According to this study and others, the home environment plays a generally important role in learning to read. The more conducive to learning to read the home environment is, the better it will be in the long run for enabling children to read and for fostering within children the desire to read.

The seventh null hypothesis stated, for each dimension of the educational environment in the home, there is no significant interaction between grade level and teacher perceptions of third, fourth, and fifth grade students' reading achievement level. The null hypothesis was not rejected. This suggests that the findings reported for grade level do not change when ability groups are examined separately. Neither do the

findings for ability groups change when grade levels are examined separately.

Conclusion

The support the home environment gives during the early years and elementary years is central to school learning (Bloom, 1988). Studies have viewed the home environment in terms of socioeconomic status variables such as: income, education, and occupation and family constellation variables as they relate to academic achievement. While SES (parents' education, occupation, income) accounts for only a small proportion (about 22%) of the variation in children's achievement, it cannot give specific clues as to what parents and schools might do to improve the situation for children at home (Bloom, 1980).

The decade from 1960-1970 was one in which concern with the culture of poverty and compensatory education peaked among educators. During the first half of that decade, a number of investigators from the University of Chicago such as Dave (1963) developed a methodology that moved away from the indices of social status to focus on particular educational experiences taking place in homes. Since little can be done about SES (education, occupation, income) and family constellation, the educational environment in the home should focus on providing children with educational experiences and opportunities which stimulate school learning. From the present study, evidence suggests that, if the educational experiences related to the five dimensions

in this study were present in the home, they would encourage school learning.

Implications

Based on the results of the study, two major implications emerged for parents and schools. The first major implication that emerged from the results of the study relates to the level of parents' education. Findings in the study clearly indicate that there is a connection between the amount of education individuals receive and how they as parents provide or do not provide experiences in the home for their children that may encourage school learning. In the study, parents who had experienced college life provided more educational experiences in the home for their children than parents who had not experienced college life. This suggests that there may be a discontinuity between parents with low levels of formal education and the school culture. The finding may also imply that there is a lack of understanding on the part of parents with less education as to the kinds of educational experiences they can provide for their children in the home. Less educated parents need to be sensitized to the importance of the five dimensions in the present study. Also, educators responsible for parent involvement programs in the schools need to make a concerted effort to involve less educated parents more in their child's education.

The return of parent responses was close to 50 percent. Because of the percentage of returns, the parent responses may not have been representative of the population. Also, parent responses included

information on the level of parents' education. According to a needs survey done in the community in May, 1990, results indicated that 44 percent of the population had received formal education beyond high school. The results of this study indicated that 63.1% of mothers and 64% of fathers had received formal education beyond high school. Therefore, more educated parents may have responded to the questionnaire in this study than other parents.

The second major implication that emerged from the results of the study relates to male and female children. Findings suggest that parents provide more academic guidance and support and hold higher educational aspirations and expectations for their male children than for their female children. As stated earlier, the relationship that mothers have with their sons and daughters at an early age leads to student roles that are less than gender equal. Mothers may not appreciate how the subtleties of their daily interaction with their children may affect the child's academic self-image. Influence of peers, teachers, mass media or general social stereotypes may have lowered mothers' expectations for their daughters. In retrospect, these lower expectations for daughters may stem from lower expectations for themselves. Mothers were singled out because research indicates that they spend more time with their children when they are young than fathers.

Educators responsible for the formulation of parent programs need to sensitize parents as to how they are promoting sex differences in the home that are less than gender equal. If sensitivity does not emerge on the part of parents as to how they are promoting sex differences in the

home, then traditional roles for young women will still exist. Parent beliefs that education is more important for boys than girls place a constraint on educational opportunities for young women at a time when options are much more readily available to them than they were in the past.

Other implications based on the results of the study relate to the amount of time spent on homework each day per school week and the amount of television viewed per school week. In homes where children spend more time on homework and less time viewing television, more time is given to educational activities such as the educational dimensions in the present study.

Parents need to monitor homework activities in the home. As stated earlier, parents must value homework as a component of school success. According to Walberg (1985), greater amounts and higher standards of homework would benefit students' learning.

Parents also need to monitor time spent watching television. Less television would clear the path for students so that they would have more time to spend on educational activities such as the educational dimensions examined in this study.

Recommendations for Further Research

The purpose of this study was to investigate several dimensions of the educational environment in the homes of third, fourth, and fifth grade students and their relationship to pertinent variables. The following specific recommendations for further research are made:

1. A finding in the study suggests that parents tend to think education is more important for their male children than for their female children. Additional research should be conducted to examine further how male and female inequalities exist in the home and how they may be affecting students' achievement.
2. Another finding in the study suggests that as grade level increases, parent involvement in the home decreases. Research should be conducted to examine the relationship between the five dimensions and the upper elementary grades, junior and senior high school.
3. The sixth null hypothesis related to determining the relationship between the five dimensions of the educational environment in the home and teacher perception of students' reading achievement level. Because there was only one type of evaluation done in relationship to the reading achievement level of students, research should be conducted to determine the relationship between the five dimensions in the present study and reading achievement on a standardized test. The results of the study using the standardized test should then be compared with the present study, which was based on teacher perception of students' reading achievement level. Also, research should be conducted to determine the relationship between the five dimensions in the present study and achievement in other subjects such as math and science.

4. Findings related to the sixth null hypothesis suggested that three of the five dimensions are present in the homes of high achievers in reading. As a result of these findings, there should be an experimental study conducted in which the three dimensions are inserted into homes of average to low achievers in reading to determine their possible influence on reading achievement.
5. The sample in this study was 97.8 percent Caucasians. Research should be conducted including cultures such as African-Americans, Asian-Americans, and Native Americans. Studies may provide insight into cultural differences, if any, in relationship to the five dimensions and specific subject achievement.
6. According to Dave (1963), it was not possible to obtain adequate information about complex processes and forces operating in the home environment by a questionnaire method. This study used the questionnaire method to provide information about the educational environment in the home. Dave used the interview method. Further research should be conducted using the interview method and direct observation in the home. The comparison of parent responses using the three different methods of collecting data may pinpoint differences, if any, in the results of the study.

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ACKNOWLEDGMENTS

Many people should be thanked for their unending support during this study. First, I wish to dedicate this dissertation to my Mom, Gustava, and Dad, James, who provided the inspiration, support, understanding, and love needed to achieve my goal. A second dedication goes to my sisters, Brenda and Grace, to my brother Jimmy, and to my old and new special friends. Special thanks go to Dr. George Jackson for his help, encouragement, and support throughout my years at Iowa State University. The author also wishes to send special thanks to the following people for their assistance and/or guidance--my dissertation committee: Dr. Theresa McCormick, Dr. Harold Dilts, Dr. Charles Railsback, Dr. Mary Huba, Dr. Frederic Duffelmeyer, and Dr. Barbara Schwarte. Also, my appreciation goes to Charles Walker and Data Entry Service, Carol and Karen; Dr. Lenola Allen-Sommerville, RISE (Research Institute for Studies in Education), and Mrs. Carolyn Taylor. Last, but not least, I wish to thank the school district and the parents who responded to the survey--without their assistance, this study may not have been possible.

APPENDIX A. CORRESPONDENCE AND QUESTIONNAIRE

IOWA STATE
UNIVERSITY

College of Education
Professional Studies
N243 Lagomarcino Hall
Ames, Iowa 50011

Telephone 515-294-4143

February 28, 1990

Dr. David Haggard
Superintendent of
Ft. Dodge Public Schools
Ft. Dodge, IA 50501

Dear Dr. Haggard:

In partial fulfillment for my Doctorate in Curriculum and Instructional Technology, I am conducting a study of parent practices in the home and their relationship to student achievement. I am requesting your permission to distribute a questionnaire to parents of third, fourth, and fifth grade students. The completion of this questionnaire should take no longer than 15 minutes. The questionnaire will be mailed directly to the parents. The parents will mail the questionnaire back to me. The literature indicates that this type of study has not been conducted since 1977. Thank you for your consideration.

Sincerely,

Drusilla C. Caudle
Graduate Student/ISU

IOWA STATE
UNIVERSITY

College of Education
Professional Studies
N243 Lagomarcino Hall
Ames, Iowa 50011

Telephone 515-294-4143

February 28, 1990

Dr. David Haggard
Superintendent of
Ft. Dodge Public Schools
Ft. Dodge, IA 50501

Dear Dr. Haggard:

I am writing concerning Drusilla Caudle's research proposal and I serve as co-chair of her doctoral committee. Drusilla's program of study committee approved her proposal on October 30, 1989.

I am also a member of the Iowa State University Human Subjects Review Committee and our policy is to approve proposals after the school district has given approval for the research to be conducted.

Her committee and I are very supportive of her proposal and hope that your district will give approval for her to conduct the research in your schools. Thanks for your consideration.

Sincerely,

Theresa McCormick

Theresa McCormick, Ed.D.
Associate Professor
Professional Studies

112

330 First Avenue North • Fort Dodge, Iowa 50501
(515) 576-1161
Dr. D.A. Haggard • Superintendent of Schools

March 5, 1990

Ms. Drusilla Caudle
Graduate Student
Professional Studies
1614 Buchanan
Iowa State University
Ames, IA 50013

Dear Druscilla:

This is to inform you that the Fort Dodge Community School District is willing to have you conduct your research study this Spring. To ensure this process will lead to the District gaining some important information from your study, we understand that:

1. The District will receive a copy of the local data gathered.

2. The District will receive a copy of the findings/summary written in your dissertation.

3. The District needs, by March 21st, in this office, 1100 copies of the questionnaire to be distributed as well as the self-addressed stamped envelopes in which the surveys are to be returned.

4. You may want to consider changes on the first page of your questionnaire (see attached page).

Best wishes as you bring to closure the process of receiving a Doctorate of Philosophy.

Sincerely,

Dr. D. A. Haggard
Superintendent of Schools

DAH:brs

Enclosure

Information for Review of Research Involving Human Subjects
Iowa State University

(Please type and use the attached instructions for completing this form)

1. Title of Project: An Investigation of the Relationship Between Parent Practices in the Home and the Academic Achievement of Third, Fourth, and Fifth Grade Students.

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the committee. Additions to or changes in research procedures after the project has been approved will be submitted to the committee for review. I agree to request renewal of approval for any project continuing more than one year.

Typed Name of Principal Investigator	Date	Signature of Principal Investigator
Drusilla C. Caudle	3/2/90	Drusilla C. Caudle

Department	Campus Address	Campus Telephone
Curriculum and Instructional Technology	1614 Buchanan Hall	294-2697

3. Signatures of other investigators

	Date	Relationship to Principal Investigator
Theresa McCormick	3-5-90	Major Professor

RECEIVED MAR 6 1990 ISU GRADUATE COLLEGE

4. Principal Investigator(s) (check all that apply)
☐ Faculty ☐ Staff ☒ Graduate Student ☐ Undergraduate Student

5. Project (check all that apply)
☐ Research ☒ Thesis or dissertation ☐ Class project ☐ Independent Study (490, 590, Honors project)

6. Number of subjects (complete all that apply)
1,100 # Adults, non-students ___ # ISU student ___ # minors under 14 ___ # minors 14 - 17 ___ other (explain)

7. Brief description of proposed research involving human subjects: (See instructions, Item 7. Use an additional page if needed.)

(See Attached Sheet)

(Please do not send research, thesis, or dissertation proposals.)

8. Informed Consent:
☐ Signed informed consent will be obtained. (Attach a copy of your form.)
☒ Modified informed consent will be obtained. (See instructions, item 8.)
☐ Not applicable to this project.

9. Confidentiality of Data: Describe below the methods to be used to ensure the confidentiality of data obtained. (See instructions, item 9.)

The code number on each questionnaire will be removed after the data is collected and analyzed. Names will not be identifiable.

10. What risks or discomfort will be part of the study? Will subjects in the research be placed at risk or incur discomfort? Describe any risks to the subjects and precautions that will be taken to minimize them. (The concept of risk goes beyond physical risk and includes risks to subjects' dignity and self-respect as well as psychological or emotional risk. See instructions, item 10.)

Subjects in this study will not be placed at risk or incur discomfort.

11. CHECK ALL of the following that apply to your research:

- ☐ A. Medical clearance necessary before subjects can participate
- ☐ B. Samples (Blood, tissue, etc.) from subjects
- ☐ C. Administration of substances (foods, drugs, etc.) to subjects
- ☐ D. Physical exercise or conditioning for subjects
- ☐ E. Deception of subjects
- ☐ F. Subjects under 14 years of age and/or ☐ Subjects 14 - 17 years of age
- ☒ G. Subjects in institutions (nursing homes, prisons, etc.)
- ☒ H. Research must be approved by another institution or agency (Attach letters of approval)

If you checked any of the items in 11, please complete the following in the space below (include any attachments):

Items A - D Describe the procedures and note the safety precautions being taken.

Item E Describe how subjects will be deceived; justify the deception; indicate the debriefing procedure, including the timing and information to be presented to subjects.

Item F For subjects under the age of 14, indicate how informed consent from parents or legally authorized representatives as well as from subjects will be obtained.

Items G & H Specify the agency or institution that must approve the project. If subjects in any outside agency or institution are involved, approval must be obtained prior to beginning the research, and the letter of approval should be filed.

The Ft. Dodge School District, Ft. Dodge, Iowa, has approved the research project.

Checklist for Attachments and Time Schedule

The following are attached (please check):

12. ☒ Letter or written statement to subjects indicating clearly:
    a) purpose of the research
    b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
    c) an estimate of time needed for participation in the research and the place
    d) if applicable, location of the research activity
    e) how you will ensure confidentiality
    f) in a longitudinal study, note when and how you will contact subjects later
    g) participation is voluntary; nonparticipation will not affect evaluations of the subject

13. ☐ Consent form (if applicable)

14. ☒ Letter of approval for research from cooperating organizations or institutions (if applicable)

15. ☒ Data-gathering instruments

16. Anticipated dates for contact with subjects:

First Contact	Last Contact
March 29, 1990	May 30, 1990
Month / Day / Year	Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

June 30, 1990
Month / Day / Year

18. Signature of Departmental Executive Officer | Date | Department or Administrative Unit

[signature] | 3/5/90 | [signature]

19. Decision of the University Human Subjects Review Committee:

___ Project Approved ___ Project Not Approved ___ No Action Required

Patricia M. Keith
Name of Committee Chairperson

Date

Signature of Committee Chairperson

7. The purpose of this study is to investigate parent practices in the home that influence the academic achievement of third, fourth, and fifth grade students.

The objectives of the study are two-fold: (1) to examine five aspects of parent practices: (a) work habits of the children and parents in the home, (b) academic guidance and support, (c) stimulation in the home to explore and discuss ideas and events, (d) academic aspirations and expectations, and (e) homework and television viewing, and their relationship to the academic achievement of third, fourth, and fifth grade students and also (2) to examine the role of the level of parent's education and its relationship to the parent practices and the academic achievement of third, fourth, and fifth grade students.

To secure information from parents concerning parent practices in the home that, according to research, influence school learning, a questionnaire will be administered by Ft. Dodge teachers to all parents of third, fourth, and fifth grade students in the Ft. Dodge School District at a parent teacher conference held the end of March.

In order to investigate the relationship between parent practices in the home and the academic achievement of third, fourth, and fifth grade students, a measure of academic achievement is needed. The district decided that the teachers will rate each student's level of achievement before the instrument is administered to the parents. The rating scale is as follows:

1 - High achieving student
2 - Middle achieving student
3 - Low achieving student
(See question #4 on questionnaire)

Upon completion of the questionnaire, parents will mail it back to the researcher. After two weeks, a follow-up card will be sent to parents who have not completed the survey instrument.

Parents of third, fourth, and fifth grade students were selected for this study because research indicates the importance of parent involvement during the elementary years; also the overall achievement of elementary students can be detected at these grade levels.

The Ft. Dodge School District was selected for this study because of the diversity of students and parents' level of education.

College of Education
Professional Studies
N243 Lagomarcino Hall
Ames, Iowa 50011

Telephone 515-294-4143

IOWA STATE UNIVERSITY

March 5, 1990

Dear Parent:

Parent involvement in any form, whether it's parent/child relationships, introducing parent involvement in the school or building a partnership between home and school, produce gains in school learning. One type of parent involvement that helps students in school learning is the activities that are present in the home. We would like some information from you regarding family activities within your home. The information gathered will be part of a doctoral project at Iowa State University and will also be useful to your child's school when it plans a parent involvement program. Your voluntary participation in this project is very much needed. About ten to fifteen minutes is all the time needed to fill out the booklet.

On the pages that follow, it is important that the mother, father, or adult head of the household answer the questions. If you do not want to answer a question, feel free not to answer it. Your answers to the questions should be related to your third, fourth, or fifth grade child only.

Do not write your name anywhere on the booklet. The code number on your booklet, which will be used for mailing purposes, will be removed after the information is collected and analyzed.

You may be assured of complete confidentiality. Thank you for your effort and time in providing us with important information about you and your family.

After you have answered the questions, staple or tape the booklet and deposit it in the U.S. mail. No postage or envelope is necessary. Please mail the booklet back to us within seven to ten days. If you have any questions or are interested in receiving additional information, please contact Drusilla Caudle at 1614 Buchanan, Iowa State University, Ames, Iowa 50013, 294-2697

Sincerely,

Drusilla Caudle
Graduate Student
Professional Studies

Theresa McCormick
Theresa McCormick, Ed.D.
Associate Professor
Professional Studies
Graduate Advisor

FAMILY ACTIVITIES IN THE HOME

NOTE TO PARENT: *This booklet is for one child only. For the parent who has more than one child in the third, fourth, or fifth grade, please fill out a booklet for each child, if possible.*

Directions: Please answer the following questions. Place a check mark by the right answer.

1. Adult filling out the booklet
   ___ Mother
   ___ Father
   ___ Other (please indicate) _____

2. Sex of your child
   ___ Male
   ___ Female

3. Age of your child
   ___ 8-9
   ___ 10-11

4. Grade level of your child (check only one grade level)
   ___ Third grade 1 2 3
   ___ Fourth grade 1 2 3
   ___ Fifth grade 1 2 3

5a. Education of mother

   ___ Advanced degree (masters or above)
   ___ College degree
   ___ Some college
   ___ High school only
   ___ Eleventh grade or less

5b. Education of father

   ___ Advanced degree (masters or above)
   ___ College degree
   ___ Some college
   ___ High school only
   ___ Eleventh grade or less

6. Ethnic background of parent filling out the booklet (optional)
   ___ African American/Black American
   ___ Caucasian
   ___ Asian American
   ___ Mexican American
   ___ Other (please indicate) _____.

Second, please tell us whether the following activities are present in your home. If this "Always" happens in your home circle no. 4. If this "Often" happens in your home circle no. 3. If this "Seldom" happens in your home circle no. 2. If this "Never" happens in your home circle no. 1.

Always ---- 4
Often ---- 3
Seldom ---- 2
Never ---- 1

7.	I designate a specific time for my child to do his/her homework (For example: At 4:00 p.m. or 5:00 p.m. each school day, my child should be doing his/her homework).	4	3	2	1
8.	How regularly is this time for homework or studying followed.	4	3	2	1
9.	My family shares household chores and duties.	4	3	2	1
10.	In my home, household chores are done on time.	4	3	2	1
11.	My child completes his/her chores on time.	4	3	2	1
12.	I schedule times for my child to eat, sleep, and play.	4	3	2	1
13.	I use workbooks, games and other kinds of learning materials to help my child in his/her school learning.	4	3	2	1
14.	I ask my child how well he/she is doing in school.	4	3	2	1
15.	I discuss my child's school grades with him/her.	4	3	2	1
16.	Soon after school starts, I know the things my child will be studying in each subject.	4	3	2	1
17.	I discuss how well my child is doing in each subject area.	4	3	2	1
18.	I praise my child for his/her school work.	4	3	2	1

19a. Do you have a dictionary in your home? (Check one)

_____ Yes -- if yes, please answer questions 19b & 19c
_____ No -- if no, go to question 20a

19b. Does your child use the dictionary? (Check one)

_____ Always
_____ Often
_____ Seldom
_____ Never

19c. Do you and your child use the dictionary together? (Check one)

_____ Always
_____ Often
_____ Seldom
_____ Never

20a. Do you have encyclopedias in your home? (Check one)

_____ Yes -- if yes, please answer questions 20b & 20c
_____ No -- if no, go to question 21

20b. Does your child use the encyclopedias? (Check one)

_____ Always
_____ Often
_____ Seldom
_____ Never

20c. Do you and your child use the encyclopedias together? (Check one)

_____ Always
_____ Often
_____ Seldom
_____ Never

Third, please tell us whether the following activities concerning stimulation to explore and discuss ideas and events are present in your home. If this "Always" happens in your home circle no. 4. If this "Often" happens in your home circle no. 3. If this "Seldom" happens in your home circle no. 2. If this "Never happens in your home circle no. 1.

Always ---- 4
Often ---- 3
Seldom ---- 2
Never ---- 1

21.	Your child brings home books to read, either from the local library, school library, or friend's place	4	3	2	1
22.	Your child reads to you	4	3	2	1
23.	You read books	4	3	2	1
24.	You discuss stories read with your child	4	3	2	1
25.	Before your child started to school, you read to him/her	4	3	2	1
26.	You discuss T.V. programs with your child after he/she watches them	4	3	2	1
27.	You and your child discuss articles from the newspapers and/or magazines	4	3	2	1
28.	My family or child visits museums, zoos, historical sites or other places of interest or culture	4	3	2	1
29.	My family or child attends musicals or plays	4	3	2	1

30. How many recreational activities (going to football and basketball games, bowling, playing with video games) do you and your child participate in together? (Check one)

_____ some every week
_____ some nearly every week
_____ one or two a month
_____ very few or no activities

Fourth, please answer the following questions related to your child.

31. How important will education be in the life of your child? (Check one)

_____ Very important
_____ Important
_____ Neutral
_____ Unimportant

32. What grades do you expect your child to receive in his/her school work? (Check one)

_____ All A's
_____ A's with some B's
_____ All B's
_____ B's with some C's
_____ C's
_____ Other

33. How much schooling do you expect your child to receive? (Check one)

_____ Leave school as soon as possible
_____ High school only
_____ High school plus other training
_____ College
_____ Postgraduate education

34. How much education do you want your child to receive? (Check one)

_____ Leave school as soon as possible
_____ High school only
_____ High school plus other training
_____ College
_____ Postgraduate education

35. What is the minimum level of education that you think your child must receive? (Check one)

_____ High school only
_____ High school plus other training
_____ College
_____ Postgraduate education

36. Do you know your child's best friends in the neighborhood and school? (Check one)

_____ Yes -- if yes, please answer question 37
_____ No -- if no, go to question 38

37. How would you rate your child's friends in their schoolwork? (Check one)

_____ Excellent students
_____ Good students
_____ Average students
_____ Poor students
_____ Other

38. How far in school did most of your close friends and relatives go? (Check one)

_____ Most do not have a high school diploma
_____ Most are high school graduates only
_____ Most are high school graduates and have had other training
_____ Most are college graduates
_____ Most received postgraduate training or education

Last, here are some questions about homework and television viewing. Please tell us whether any of these activities are present in your home. If this "Always" happens in your home circle no. 4. If this "Often" happens in your home circle no. 3. If this "Seldom" happens in your home circle no. 2. If this "Never" happens in your home circle no. 1.

	Always ---- 4 Often ---- 3 Seldom ---- 2 Never ---- 1			
39. I help my child with his/her homework.	4	3	2	1
40. If I do not have time to help my child with homework, I have someone else help my child with his/her homework..	4	3	2	1
41. My child has a quiet place to study a desk or table at which to work.	4	3	2	1

42. How much time does your child spend on homework each day? (Check one)

_____ 2 hours or more each day
_____ Between 1 and 2 hours each day
_____ 1 hour per day
_____ less than an hour

43. How much time do you think your child should spend on homework each day? (Check one)

_____ 2 hours or more each day
_____ Between 1 and 2 hours each day
_____ 1 hour per day
_____ Less than an hour
_____ No time expected

44. How many hours per school week does your child spend watching television? (Check one)

_____ Over 10 hrs. per week
_____ Up to 10 hrs. per week
_____ Less than 10 hrs. per week

45. I check to see what my child is watching on television. (Check one)

_____ Always
_____ Often
_____ Seldom
_____ Never

46. What television programs does your child usually watch? (Check one)

_____ Most are educational (PBS, Square One T.V., Nickelodean; Making the Grade; Double Dare; National Geographic, etc.)
_____ Mixture of educational and recreational
_____ All recreational (The Cosby Show, cartoons, Growing Pains, etc.)
_____ Don't know

Please staple or tape the booklet and drop it in the mailbox. No stamps are needed.

Thank you again for your effort and time in providing us with important information about you and your family.

APPENDIX B. DEMOGRAPHIC INFORMATION AND DISTRIBUTION OF RESPONSES FOR EACH ITEM INCLUDED IN THE FACTOR ANALYSIS

Table B.1. Distribution of adults who filled out the questionnaire

Adult	Frequency	Percentage
Mother	423	92.4
Father	31	6.8
Guardian	2	.4
Grandmother	2	.4
	1	Missing
Total	459	100.0

Table B.2. Sex of child

Sex	Frequency	Percentage
Male	217	47.3
Female	242	52.7
Total	459	100.0

Table B.3. Age of child

Age	Frequency	Percentage
8-9	169	36.8
10-11	290	63.2
Total	459	100.0

Table B.4. Grade level of child

Grade level	Frequency	Percentage
Third grade	135	29.4
Fourth grade	145	31.6
Fifth grade	179	39.0
Total	459	100.0

Table B.5. Education of mother

Mother	Frequency	Percentage
Advanced degree	16	3.5
College degree	132	28.9
some college	140	30.7
High school only	142	31.1
Eleventh grade or less	26	5.7
	3	Missing
Total	459	100.0
Mean 3.066	Std. Dev. .983	

Table B.6. Education of father

Father	Frequency	Percentage
Advanced degree	38	9.8
College degree	105	27.0
Some college	106	27.2
High school only	112	28.8
Eleventh grade or less	28	7.2
	70	Missing
Total	459	100.0
Mean 2.967	Std. Dev. 1.113	

Table B.7. Ethnic background

Ethnicity	Frequency	Percentage
African-Americans	2	.4
Caucasians	437	97.8
Mexican-Americans	3	.7
Others	5	1.1
	12	Missing
Total	459	100.0

Table B.8. Factor one: Reading and discussion in the home to explore ideas and events in books, games, magazines, newspapers, and television programs

	Frequency	Percentage
21. Your child brings home books to read...		
Always	224	49.0
Often	182	39.8
Seldom	48	10.5
Never	3	.7
	2	Missing
Total	459	100.0
Mean 3.372	Std. Dev. .696	
22. Your child reads to you...		
Always	63	13.7
Often	200	43.6
Seldom	179	39.0
Never	17	3.7
Total	459	100.0
Mean 2.673	Std. Dev. .755	
23. You read books...		
Always	176	38.6
Often	184	40.4
Seldom	94	20.6
Never	2	.4
	3	Missing
Total	459	100.0
Mean 3.171	Std. Dev. .763	
24. You discuss stories read with your child...		
Always	66	14.4
Often	245	53.6
Seldom	134	29.3
Never	12	2.6
	2	Missing
Total	459	100.0
Mean 2.799	Std. Dev. .709	

Table B.8. (Continued)

	Frequency	Percentage
26. You discuss T.V. programs with your child...		
Always	62	13.5
Often	273	59.5
Seldom	116	25.3
Never	8	1.7
Total	459	100.0
Mean 2.847	Std. Dev. .660	
27. You and your child discuss articles from the newspaper...		
Always	42	9.2
Often	239	52.1
Seldom	167	36.4
Never	11	2.4
Total	459	100.0
Mean 2.680	Std.Dev. .671	
13. I use workbooks, games and other kinds of learning material to help my child in his/her school learning		
Always	76	16.6
Often	221	48.1
Seldom	135	29.4
Never	25	5.4
	2	Missing
Total	459	100.0
Mean 2.761	Std. Dev. .791	

Table B.9. Factor two: Academic guidance and support

	Frequency	Percentage
14. I ask my child how well he/she is doing in school		
Always	317	69.2
Often	138	30.1
Seldom	3	.7
Never	0	0
	1	Missing
Total	459	100.0
Mean 3.686	Std. Dev. .479	
15. I discuss my child's school grades with him/her		
Always	343	74.9
Often	110	24.0
Seldom	5	1.1
Never	0	0
	1	Missing
Total	459	100.0
Mean 3.738	Std. Dev. .464	
17. I discuss how well my child is doing in each subject area		
Always	193	42.1
Often	232	50.7
Seldom	32	7.0
Never	1	.2
	1	Missing
Total	459	100.0
Mean 3.347	Std. Dev. .617	
18. I praise my child for his/her school work		
Always	352	77.0
Often	103	22.5
Seldom	2	.4
Never	0	0
	2	Missing
Total	459	100.0
Mean	Std. Dev.	

Table B.10. Factor three: Work habits of children and parents in the home

	Frequency	Percentage
9. My family shares household chores and duties		
Always	207	45.3
Often	194	42.5
Seldom	55	12.0
Never	1	.2
	2	Missing
Total	459	100.0
Mean 3.328	Std. Dev. .689	
10. In my home, household chores are done on time		
Always	60	13.2
Often	296	64.9
Seldom	94	20.6
Never	6	1.3
	3	Missing
Total	459	100.0
Mean 2.899	Std. Dev. .617	
11. My child completes his/her chores on time		
Always	49	10.8
Often	289	63.8
Seldom	106	23.4
Never	9	2.0
	6	Missing
Total	459	100.0
Mean 2.834	Std. Dev. .629	

Table B.11. Factor four: Educational aspirations and expectations

	Frequency	Percentage
33. How much schooling do you expect your child to receive?		
Leave school as soon as possible	0	0
High school only	12	2.6
High school plus other training	76	16.6
College	322	70.3
Postgraduate education	48	10.5
	1	Missing
Total	459	100.0
Mean 3.856	Std. Dev. .603	
34. How much education do you want you child to receive?		
Leave school as soon as possible	0	0
High school only	9	2.0
High school plus other training	33	7.2
College	300	65.5
Postgraduate education	116	25.3
	1	Missing
Total	459	100.0
Mean 4.142	Std. Dev. .620	
35. What is the minimum level of education that you think your child must receive?		
High school only	56	12.3
High school plus other training	157	34.4
College	237	51.9
Postgraduate education	7	1.5
	2	Missing
Total	459	100.0
Mean 2.427	Std. Dev. .722	

Table B.12. Factor five: Use of the dictionary and encyclopedia in the home

	Frequency	Percentage
19b. Does your child use the dictionary?		
Always	40	8.9
Often	218	48.8
Seldom	176	39.4
Never	13	2.9
	12	Missing
Total	459	100.0
Mean 2.638	Std. Dev. .685	
19c. Do you and your child use the dictionary together?		
Always	33	7.4
Often	184	41.3
Seldom	211	47.3
Never	18	4.0
	13	Missing
Total	459	100.0
Mean 2.520	Std. Dev. .692	
20b. Does your child use encyclopedias?		
Always	45	14.7
Often	165	53.7
Seldom	85	27.7
Never	12	3.9
	152	Missing
Total	459	100.0
Mean 2.792	Std. Dev. .734	
20c. Do you and your child use encyclopedias together?		
Always	27	8.8
Often	149	48.7
Seldom	117	38.2
Never	13	4.2
	153	Missing
Total	459	100.0
Mean 2.621	Std. Dev. .706	