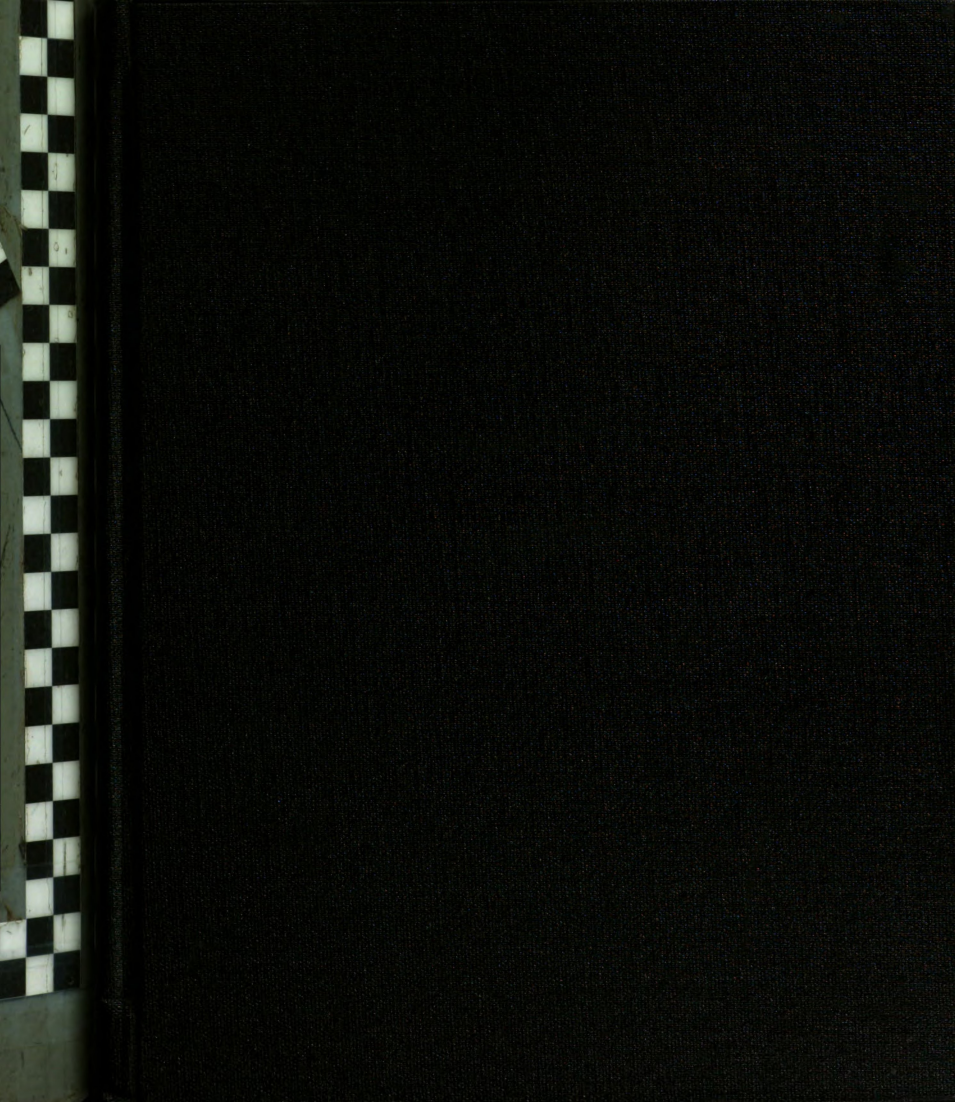




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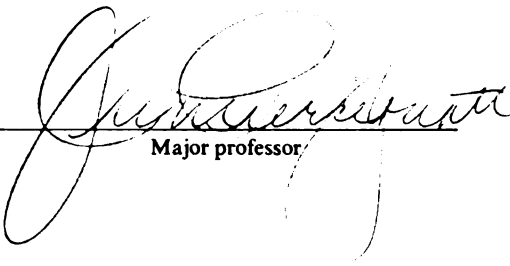
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AN EXPLORATORY STUDY OF THE RELATIONSHIP BETWEEN SELECTED
CHILDREN'S PERCEPTIONS OF MATERNAL ACCEPTANCE
AND THEIR READING ACHIEVEMENT

by

James R. Anderson

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of
DOCTOR OF PHILOSOPHY

Department of Family and Child Ecology

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ABSTRACT

AN EXPLORATORY STUDY OF THE RELATIONSHIP OF SELECTED CHILDREN'S PERCEPTIONS OF MATERNAL ACCEPTANCE AND READING ACHIEVEMENT

by

James R. Anderson

The purpose of this study was to examine the way in which 4th and 5th grade children perceived their mother's warmth in relation to their academic achievement while also considering individual and family factors that may also affect their achievement. Understanding children's perceptions of mother's warmth particularly in relationship to that same child's academic achievement is important. Understanding more about this critical relationship would provide some insights into that linkage between home and school. Bronfenbrenner's Ecological Theory (1979) and Rohner's Parental Acceptance Rejection Theory (PART) (1985) provide the theoretical foundations for a study of perceived mother's warmth and academic achievement.

Rohner's child version of the Parental Acceptance Rejection Questionnaire (PARQ) was administered to 100 fourth and fifth grade students. The PARQ is comprised of four sub-scales with a total of 60 Likert scaled items to answer. Two individual and four family factors were also measured for each student. The 4th grade Michigan Education

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Assessment Program (MEAP) reading test was used as the measure of academic achievement.

Descriptive statistics were used to summarize the variables used in the study. The 97 fourth and fifth grade elementary students indicated a less than thought amount of perceived mother's warmth. The sample also scored high on the 4th grade MEAP reading test. The sample was proportional with boys and girls who participated. Most students lived with intact families and did not qualify for free or reduced lunch. Similar proportions were evident in the groups with respect to how long the student had attended the school where they took the 4th grade MEAP.

Data analysis using t-tests and Pearson product-moment correlations resulted in few significant findings when comparing both family and individual variables with academic achievement as well as those same variables compared to perceived mother's warmth. One family variable that did show significance (.000) with academic achievement was "help with homework." It is worthwhile to note that perceived mother's warmth was significant at the (.14) level.

The findings from this study lend support to the combination of ecological and parental acceptance-rejection theories and the continuation of research regarding elementary children and academic achievement.

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ACKNOWLEDGMENTS

The task of finishing this project is not complete without acknowledging considerable support from a variety of people. I want to thank my committee members, Dr. June Youatt, Dr. Joanne Keith, Dr. Dennis Keefe and Dr. Arden Moon. Their individual and collective understanding, guidance, nurturing, patience and tolerance has been admirable and very much appreciated.

I want to thank the Superintendent, Mr. Thomas Gilstad, for his continued support and allowing me to conduct this study. I also want to recognize the Assistant Superintendent, Dr. David Chapin, for his support throughout the project. Teachers and support staff, that I work with daily, have also helped me a great deal in the completion of this project. I am indebted to Dr. Ira Washington for his statistical consultation and my niece, Karin Allor, for recommending him to me. I am very appreciative of the last minute pressures that Jean Massey endured in order to prepare this dissertation for print.

I would also like to acknowledge the contributions of my mom, Lucille W. Anderson, who has always supported me and believed in me. My three sons, Corey, Jeremy, and Jimmy have also endured the long process and continued to support and love me even though I was not always in close proximity to them.

Final

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Finally, I would like to thank all of my other friends and family members who tolerated me during this very long journey.

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Chapter 1

Introduction

In society today, academic achievement is of major concern. The public has a limited view of the academic achievement that is occurring in public education, often as that achievement is defined by the news media. In Michigan, the predominant measure of academic achievement is the Michigan Educational Assessment Program (MEAP) test.

Each year, public schools are subject to media scrutiny when MEAP test scores are published in local newspapers. Attention has focused on how schools can become better at what they are doing. There is a widespread belief that if schools improve, better test scores will result. According to Lezotte (1999), the push for school change comes from all directions. Parents, taxpayers, media, state and federal legislators, administrators, and teachers all agree that change must occur at local, district, and state levels. Change in public education is paramount if schools are going to succeed at increasing educational credibility, as measured by students' academic achievement. Parents and the role of the family also should be included as a partner in any change.

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The MEAP tests, which are designed to measure the student's grasp of Michigan's core curriculum, are administered to 4th, 5th, 7th, 8th, and 10th grade students. The 4th Grade MEAP reading test was reviewed by the Michigan Department of Education (MDE) and the Michigan Reading Association (MRA) in the 1980s. This review resulted in an updated definition of reading and revised objectives. The Essential Goals and Objectives for Reading Education were adopted by the Michigan State Board of Education in 1986. The objectives describe the characteristics of a good reader, as determined by reading researchers, in three categories: construction of meaning, knowledge about reading, and attitudes and self-perceptions.

The Essential Skills Reading Test was first administered statewide in grades 4, 7, and 10 in 1989. For this assessment, students read two reading selections, one a story and the other an informational passage from a science or social studies textbook. Upon completion of each reading selection, students answer a series of questions designed to determine how well they constructed meaning from that particular section.

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Research in the area of academic achievement has revealed many variables associated with academic achievement. Of these variables the role of family is commanding increasing attention. Several family and individual variables are thought to influence academic achievement; these include parental involvement, parenting styles, home environment, educational level of parent(s), the socio-economic status (SES) of the family, age, and gender of children. A growing body of research on preschool and elementary-age children has indicated relationships between family variables, parent relationships in particular, and academic achievement (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Dornbusch et. al., 1987; Hess & Holloway, 1984; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, Dornbusch and Brown, 1992a; Steinberg, Elmen, & Mounts, 1989; Steinberg, Lamborn, Dornbusch, and Darling, 1992; Maccoby & Martin, 1983).

Hess and Holloway (1984) identified five parenting characteristics linking family and school achievement: (a) verbal interaction between mother and child, (b) parental expectations for achievement, (c) positive affective relationships between parents and children, (d) parental beliefs and attributions about the child, and (e) discipline and control strategies. Dornbusch et. al. (1987)

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stated that, among these family variables, discipline and control strategies of parents appeared to have a major influence on children's academic achievement.

Parenting styles (Baumrind, 1978) are believed to influence young children's academic achievement by facilitating the development of cognitive skills that serve as the basis for school success. Researchers on family-school linkages have explored parenting styles as they relate to the quality of parent-child interactions (Baumrind, 1973, 1991; Steinberg, 1990). Baumrind(1978) identified parenting styles as authoritarian, authoritative and permissive. More recently, Baumrind (1991) included rejecting-neglecting parenting in her parenting paradigm. Rejecting-neglecting parents are neither demanding nor responsive. They do not structure and monitor, and are not supportive, but they may be actively rejecting or else neglecting their child-rearing responsibilities altogether. Baumrind (1967, 1971, 1973, 1978, 1989, 1991) postulated that these four parenting styles have consequences for children's cognitive and social competence.

Previous research has indicated that the authoritative approach to parenting has the strongest relationship to academic achievement (Steinberg, 1990). Authoritative

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parenting can be characterized as a rational and logical manner of dealing with children. It supports both autonomous self-will and disciplined conformity (Baumrind, 1978). Authoritarian and permissive parenting styles, on the other hand, have not been found to support academic achievement.

Baumrind's parenting styles are typed by the nature of how parents act in specific ways in given situations over time. A critical dimension formed by the parent-child dyad is the perception of the child's feelings based on how he or she is parented. Specifically, perceived parental acceptance and rejection were explored by Rohner 1986), who developed the theory of Parental Acceptance and Rejection (PAR). PAR is a theory of socialization that Rohner used to explain and predict major antecedents, correlates, and consequences of parental acceptance and rejection.

Rohner postulated that individuals everywhere experience more or less warmth and affection at the hands of the people who are most important to them as they grow up (Rohner & Rohner, 1981). Rohner called these people "parents," although they are not necessarily mother and father. The warmth and affection (or its withdrawal) each person experienced as a child can be placed on a continuum

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from a great deal to virtually none. Rohner called this continuum the warmth dimension of parenting. One end of the warmth dimension is marked by parental acceptance and the other end is marked by rejection. As shown in Figure 1, parental acceptance, which refers to the warmth, affection, and love parents can give their children, has two principal expressions: physical and verbal. Physical expressions of warmth and affection include hugging, fondling, caressing, giving approving glances, kissing, smiling, and other such indications of endearment, approval or support. Expressions of verbal warmth and affection include praising, complimenting, saying nice things to or about the child, and perhaps singing songs or telling stories to the youngster. Children in most accepting families experience a combination of all these behaviors. Even the warmest of parents, however, are apt to get angry and impatient, or display other elements of rejection from time to time.

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Figure 1. Warmth
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Warmth Dimension of Parenting

<u>Parental Acceptance</u>		<u>Parental Rejection</u>			
		<u>Hostility/ Aggression</u>		<u>Indifference</u>	<u>Undifferentiated Rejection</u>
<u>Physical</u>	<u>Verbal</u>	<u>Physical</u>	<u>Verbal</u>		
kiss	praise	hit	curse	physical and	child's feeling
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Figure 1.

Figure 1. Warmth Dimension of Parenting
Source: Rohner, 1986, p. 20.

Rohner (1977) developed a self-report questionnaire titled: Parental Acceptance-Rejection Questionnaire (PARQ), which was designed to elicit respondents' assessments of their childhood experiences in terms of perceived parental "warmth". In the Child PARQ, children are asked to reflect on the way their primary caregiver (usually mother) now treats them.

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Statement of the Problem

A review of literature revealed many studies of the relationships of home environment, SES, and parenting styles as related to the academic achievement of school-age children (Baumrind, 1973, 1991; Bloom, 1986; Bradley & Caldwell, 1987; Luster & Dubow, 1990; Steinberg, 1990).

Parental rejection, which is defined conceptually as the absence or significant withdrawal of warmth, affection, or love by parents toward their children lies at the opposite end of the warmth dimension (Rohner, 1975a, 1975b). Only a few studies have looked at whether school-age children's perceptions of specific parenting behaviors have a relationship to their academic achievement (Morrow, 1983; Schachter, 1965).

Links between parenting and academic achievement have been established (Baumrind, 1973, 1978, 1991; Steinberg, 1990). There is empirical evidence that the nature of the home environment can modify a child's cognitive competence (Bloom, 1986; Bradley & Caldwell, 1987).

Previous researchers have concentrated on types of parenting styles as reported by parents and investigators as related to academic achievement. Therefore, it is

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necessary to extend an investigation beyond the simple classification of parenting styles and examine school-age children's perceptions of parental acceptance and rejection in relationship to their academic achievement.

Purpose of the Study

The purpose of this study was to explore the possible relationships between selected fourth and fifth graders' perceptions of maternal acceptance or rejection and their achievement on the MEAP reading test. The specific objectives of the study were to:

1. Explore to what degree mother's warmth measured with the (PARQ) and MEAP reading scores vary.
2. Explore the variance in mother's warmth (PARQ) and MEAP reading scores as a function of individual and family factors.
3. Explore the relationship of mother's warmth (PARQ), individual factors, family factors, and MEAP reading scores.

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These objectives are depicted in the conceptual map shown in Figure 2.

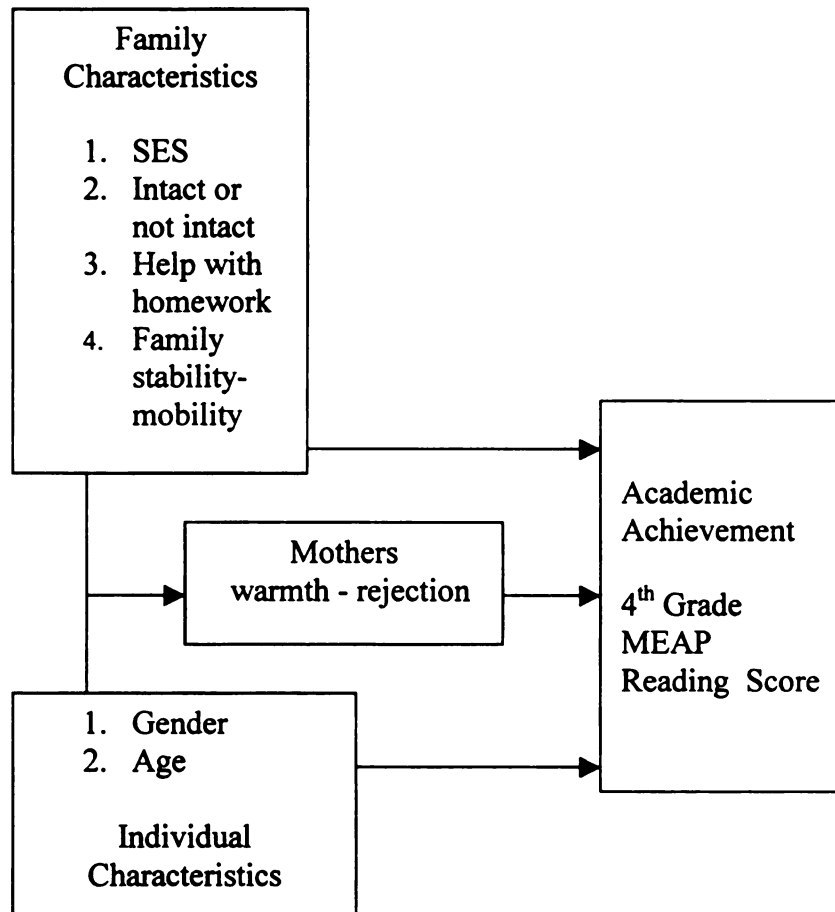


Figure 2. Conceptual Map

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Family and individual characteristics are important variables in every child's life. A student's family has the potential to be very supportive in their education. To what extent the family is able to provide (SES) for the child, whether the family remains together (intact), how many times the family moves during the child's education (mobility/stability) and how often the child is helped with home work are all critical factors in a child's life. For developmental reasons, individual factors of age and gender are also important in a child's education.

Significance of the Study

This study has practical significance for school-family linkages in every community across the nation. This study will add to the growing understanding of the relationship between academic achievement and parenting. Results of this study can be used in parenting programs, teacher inservice programs, and teacher preparation courses, as well as providing other family agencies with possible intervention strategies.

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Theoretical Framework

The theoretical framework for this study involves the interaction of two theories. The ecological theory proposed by Bronfenbrenner (1979) asserts that human-development research should include an awareness of the environmental systems within which people are operating. The two environments on which the researcher focused were the home and school. The interaction of those two environments was the focus of this research. Parental acceptance and rejection theory (PAR) (Rohner, 1986) helps to illustrate the dynamics of parent and child relationships.

Human Ecology Theory

Bronfenbrenner (1979) described the individual's environment as "a set of nested structures, each inside the next, like a set of Russian dolls" (p. 87). The four layers Bronfenbrenner established through his research on human development explain the dynamics of how humans develop within the different environments or systems in which they live. These four layers of environment that can influence

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These four systems evolve from small to large. The family constitutes a small microsystem that contains elements of an individual's immediate environment. These elements include activities, roles, and relationships that involve the developing individual. The family is the principle microsystem in which development takes place. Another is day-care center or school.

Interactions between the two microsystems of family and school create yet another system, which Bronfenbrenner identified as a mesosystem. A mesosystem involves the relationship among various microsystems of the individual and is an extension of these microsystems. The interactions among settings now affect the developing individual. Bronfenbrenner suggested that positive linkages in the mesosystems of developing children facilitate their positive individual development.

Parental Acceptance Rejection Theory

Parental acceptance-rejection theory, or PAR theory, is a concept of socialization that attempts to explain and predict major antecedents, correlates, and consequences of

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parental acceptance and rejection (warmth). The theory focuses on four classes of issues. One class concerns the consequences of parental acceptance and rejection (warmth) for the behavioral, cognitive, and emotional development of children. Another component of PAR theory deals with how children cope with rejection. The ability to cope allows some children the resilience they need with day-to-day rejection without developing personality, social-cognitive, and emotional impairments to the same degree that most rejected children do. In addition to these issues concerning the consequences of parental acceptance and rejection, PAR theory predicts major psychological, environmental antecedents of parental acceptance-rejection. Finally, PAR theory is concerned with social culture and expressive correlates of parental acceptance and rejection. The majority of work done with PAR theory has focused primarily on the warmth dimension of parenting (Rohner, 1986).

The theoretical model for this study is illustrated in Figure 3. This researcher explored the microsystems and mesosystems of school-age children and the possible relationship of those systems to the children's academic achievement. The independent variables for the study were mother's perceived acceptance and rejection (warmth),

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parental involvement with homework, mobility (number of schools attended), SES, family make-up, age, and gender. The dependent variable was the children's academic achievement as measured by the fourth grade MEAP reading test.

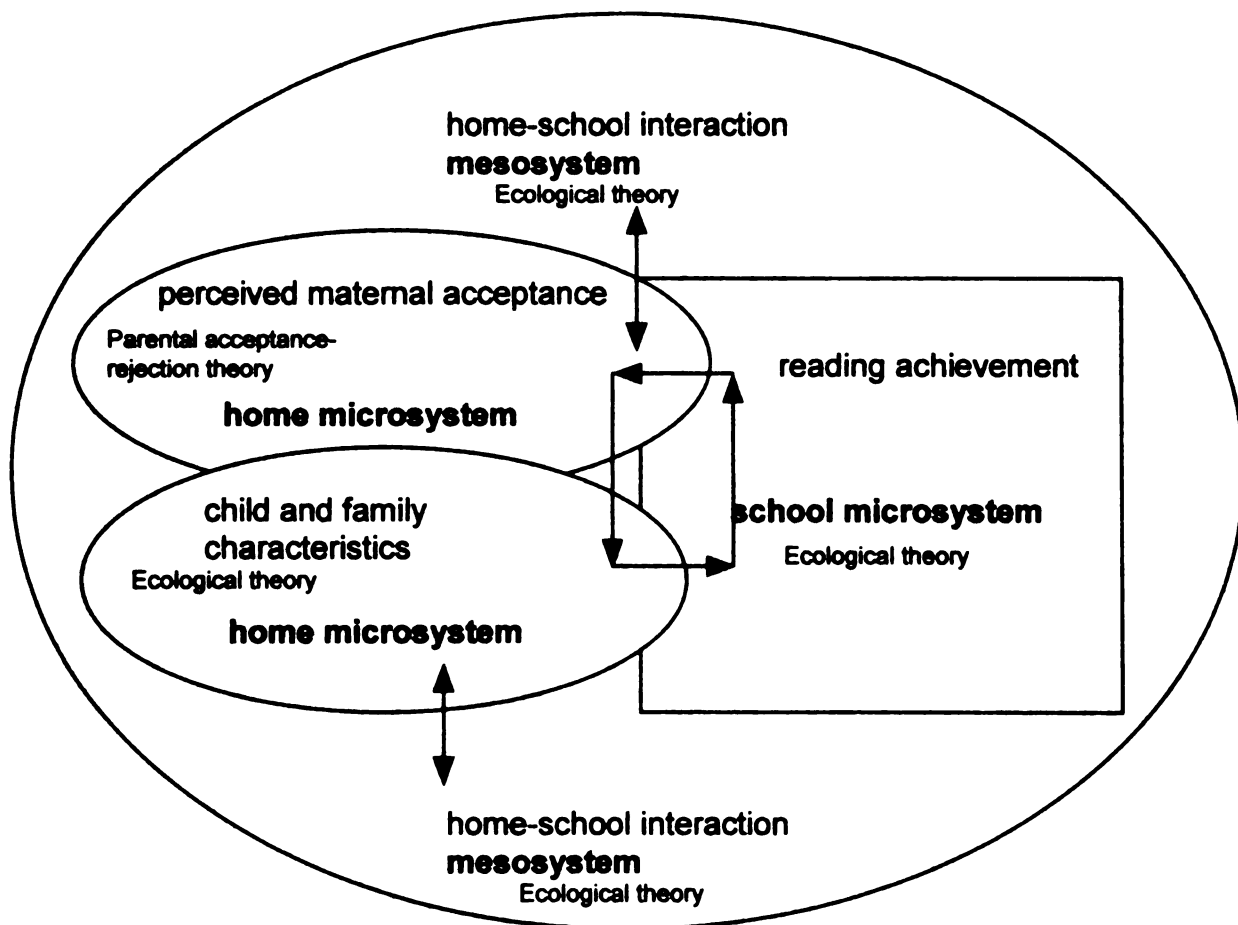


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Relationships Between the Human Ecology and PAR Theories

No one theory describes or explains all aspects of human development and socialization. Ecological theory and the PAR theory are compatible; therefore they were used to provide guidance in developing this investigation of children's academic achievement in relationship to parenting behaviors.

The theories are dependent on the environment, which is an essential component of both the human ecology, and PAR theories. It is necessary to focus on the contexts and situations in which children live and work because children's perceptions are based on what they see, hear, and experience in the world around them. Besides having physical dimensions, environments, to human ecologists, are "subjectively experienced....[People] perceive, interpret, and create their meaning" (Bubolz & Sontag, 1993, p. 23). Environments are meaningful not only for what they actually contain, but also for the meaning that is created within them. Social contexts have a wide-ranging influence on individuals' academic achievement. The theories concur that "environments do not determine human behavior but pose limitations and constraints as well as possibilities and opportunities" (Bubolz & Sontag, 1993).

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An important interaction takes place between person and environment. Development is not something that just happens to children. Rather, they are active participants in the contexts in which development occurs. People can "respond, change, develop, act on, and modify their environment" (Bubolz & Sontag, 1993). Thus, individuals are the producers of their own development (Bronfenbrenner, 1993). Not only do these theories recognize the ability of the individual to respond to new information and experiences, but they emphasize that people have the capacity for forethought. The interaction between parent and child also supports the dynamic-interaction portion of the theories. Parental acceptance and rejection is based on just that interaction and can be captured through self-reported perceptions.

Perceptions of parental acceptance and rejection evolve over time. Thus examining specific life transitions and also the cumulative effects of these changes over time is necessary. One needs to consider not only the development that occurs throughout the life span of an individual, but also the mediating effect of the past on current and future behavior. Bronfenbrenner's concept of chronosystem and Rohner's warmth dimension both are measures of sustained effects over time. Not only does

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academic development begin early, it is part of the larger lifelong process of human development. In this investigation, the two theories were blended to study the relationship that may exist between the characteristics of individuals and families in their environments, perceived maternal acceptance or rejection, and school-age children's academic achievement, as measured by their fourth grade MEAP reading achievement scores.

Bronfenbrenner's findings have far-reaching effects on the effort to bring homes and schools together. Garbarino (1997) concluded that the most important aspect of policy intervention is the "personal commitment to improving the lives of children and their families" (p. 37). MEAP assessments are not likely to change at the state level in the near future. PAR theory has indicated that a relationship exists between students' academic achievement and parental acceptance or rejection (warmth). The findings from this study will assist parents and schools with their collaborative efforts to better meet the needs of school age children and their academic quest.

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Research Questions and Hypotheses

The research questions posed in this study and specific hypotheses related to them are presented below. Hypotheses were advanced in the areas in which previous research has indicated relationships. Other questions were considered exploratory in nature; therefore, no hypotheses were formulated for them. Individual variables considered in this study were child's gender and age. Family variables studied were stability/mobility, help with homework, whether the family was intact or not intact, and SES.

Research Question and Hypotheses

1. Do MEAP reading achievement scores vary as a function of individual factors?

1a. Do MEAP reading achievement scores vary as a function of gender?

Hypothesis: MEAP reading achievement will vary as a function of gender.

2. Do PARQ scores vary as a function of individual factors?

2a. Do PARQ scores vary as a function of gender?

Hypothesis: PARQ scores will not vary as a function of gender.

2b. Do PARQ scores vary as a function of age?

Hypothesis: PARQ scores will not vary as a function of age.

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3. Do MEAP reading achievement scores vary as a function of family factors?

3a. Do MEAP reading achievement scores vary as a function of SES?

Hypothesis: MEAP reading achievement will vary as a function of SES

3b. Do MEAP reading achievement scores vary as a function of family composition? (intact/ not intact family)

Hypothesis: MEAP reading achievement will vary as a function of family composition.

3c. Do MEAP reading achievement scores vary as a function of family stability/mobility?

Hypothesis: MEAP reading achievement will vary as a function of family stability / mobility.

3d. Do MEAP reading achievement scores vary as a function of help with homework?

Hypothesis: MEAP reading achievement will vary as a function of help with homework.

4. Do PARQ scores vary as a function of family factors?

4a. Do PARQ scores vary as a function of SES?

Hypothesis: PARQ scores will not vary as a function of SES.

4b. Do PARQ scores vary as a function of family composition (intact/ not intact)?

Hypothesis: PARQ scores will vary as a function of family composition.

4c. Do PARQ scores vary as a function of family stability/mobility?

No hypothesis stated

4d. Do PARQ scores vary as a function of help with homework?

No hypothesis stated.

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5. Is there a relationship between student's perceived warmth of mother (PARQ) and student's MEAP reading achievement?

Hypothesis: There is a positive relationship between MEAP reading achievement and student's perceived warmth of mother (PARQ).

6. Is there a relationship between student's perceived warmth of mother (PARQ), individual factors, family factors, and student's MEAP reading achievement?

Hypothesis: There is a positive relationship between mother's warmth, individual factors, family factors, and student's MEAP reading achievement.

Conceptual and Operational Definitions

Reading achievement

Conceptual-the degree to which a person is ranked according to his or her scholarly work (Dornbusch, S., et al. 1987).

Operational-the average score on both reading sections of the fourth grade MEAP test score of 315 or greater (cut score) demonstrating proficiency.

Parenting behavior

Conceptual-the behavior demonstrated by a parent in daily family activities (Hazzard, 1983).

Operational-the indicators identified and measured as sub categories on the PARQ (warmth, rejection, aggression-hostility, neglect-indifference).

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Perceptions

Conceptual-a person's conscious awarenesses derived from his or her senses and experiences (Hazzard, 1983).

Operational-the responses of each participant to the sub categories of parental acceptance and rejection as measured by the PARQ.

Family composition

Conceptual-social group regulated by norms of the institution of marriage and the family.

Operational-whether a family is intact or not intact.

Intact family

Conceptual-households in which individuals who are the responsible adults in the family have lived together since the birth of the child (Scanzoni, 1988).

Operational-households in which biological parents still live together.

Family stability/mobility

Conceptual-frequency of geographic relocation of a family unit.

Operational-number of years the child was enrolled at the school where the child took the 4th grade MEAP test.

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Socio-economic status (SES)

Conceptual-the monthly or annual income level for the family.

Operational-family eligibility for free lunch under federal guidelines.

Help with homework

Conceptual-how often a student indicated they received help with homework.

Operational-the response given by each participant to the question "Does your parent help you with homework?"

Research Assumptions

The researcher made the following assumptions in conducting this study:

1. More than one dimension of a child's ecology affects his or her reading achievement.
2. School-age children's reading achievement differs due to out-of-school influences including parenting behaviors.
3. Perceptions of school-age children can be used to measure maternal warmth.
4. The MEAP test is an accurate indicator of reading achievement.

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Limitations

The potential limitations of the study concern the sample, the data collection instrument, and perceptions of school-age students. The sample was not a random sample and it was difficult to find relationships between variables. There was only one measure for academic achievement (MEAP test).

To gather data regarding school-age children's perceptions of parental acceptance or rejection, a self-reporting questionnaire (the PARQ) was used. A potential limitation is how accurate the perceptions of school-age children are regarding parental acceptance or rejection (warmth). However, the PARQ has been validated on thousands of children in studies worldwide (Rohner & Rohner 1981). Previous researchers have relied on self-reported information from parents or adolescents regarding their perceptions of parenting behaviors. Rohner and others have pursued the perceptions of school-age children in numerous social science investigations.

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Chapter 2

REVIEW OF THE LITERATURE

Introduction

Over the years, studies concerning children's academic achievement and their social-emotional development have focused on the socializing influences of parents. In this section, relevant literature pertaining to school-age children's perceptions of maternal acceptance or rejection and individual characteristics of those children that may be related to academic achievement are reviewed.

Parental Warmth and Control

Parental warmth and parental control have been found to be two major dimensions of parenting in all human societies (Rohner & Rohner, 1981). Schaefer (1959) analyzed data from observations of maternal behaviors, which were described as social and emotional interactions between mother and child. Factor analyses revealed that mothers' disciplinary techniques could be clustered into two variables: warmth-hostility and control-autonomy. Becker (1964) proposed two similar variables: warmth versus

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hostility, and restrictive versus permissive based on a series of factor analyses. Typically, factor analyses of parents' behavior have yielded two dimensions, which are manifestations of responsiveness and demandingness (Maccoby & Martin, 1983).

Individually and together, parental warmth and control are significantly associated with many child outcomes, such as positive relations with siblings and parents and adolescents' problem behaviors (Amoto, 1990; Barnes & Farrell, 1992; Baumrind, 1965; Kim, 1994; Peterson & Rollins, 1987; Rohner, 1975a, 1975b, 1991; Rohner & Pettengil, 1985). Kim argued that any attempt at studying the effect of parental behavior on the socialization of children could profit by beginning with attempts at describing and analyzing parental warmth and control, and then endeavoring to relate them to outcomes for children. Amoto did just that in his investigation of the dimensions of support and control in the family environment as perceived by children (n = 201). Children who perceived high levels of support reported positive relations with siblings and parents, and felt good about their families, whereas children who perceived high levels of control reported a high level of parental decision making, parental

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Barnes and Farrell (1992) confirmed that parental support and monitoring are important predictors of adolescent outcomes, even after taking into account critical demographic family factors. In their study, a sample of 699 adolescents was interviewed on the development of problem behaviors, such as drinking, use of illicit drugs, and misconduct in school. High levels of support and monitoring by mother and father were associated with the lowest levels of regular drinking, drug use, deviance, and misconduct in school. These results provided strong evidence that high parental support and monitoring are key socialization factors in the prevention of adolescents' alcohol abuse and more generalized deviance.

Paulson (1994) explored (a) the influence of parental demandingness, responsiveness, and involvement on achievement of early adolescents; and (b) the differential influence of adolescents' and their parents' perceptions of parenting on the adolescents' achievement. Subjects were 247 ninth-grade boys and girls and their parents. Adolescents', but not parents', reports of parenting significantly predicted their achievement outcome.

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Specifically, adolescents' reports of maternal and paternal demandingness, responsiveness, and involvement were positively and significantly related to achievement outcome. The author further suggested that parental involvement may be more important to the achievement outcome of adolescents than are parental demandingness and responsiveness.

Parental Acceptance-Rejection (PAR) Theory

Rohner (1975a, 1975b, 1980, 1986, 1991; Rohner and Rohner, 1981; Rohner, Saavedra, & Granum, 1977) described PAR theory as a theory of socialization that attempts to explain and predict major consequences of parental acceptance and rejection for children's behavioral, cognitive, and emotional development and for the personality functioning of adults everywhere. Together, parental acceptance and rejection form the warmth dimension of parenting.

Warmth Dimension

The warmth dimension of parenting is a bipolar dimension of acceptance and rejection (Rohner, 1975a, 1975b, 1980, 1986, 1991). Rohner defined parental

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acceptance and rejection as follows. Parental acceptance stands in opposition to parental rejection and refers to the love, affection, and concern that parents express toward their children. Rejection, on the other hand, refers to the absence or significant withdrawal of warmth and affection on the part of the parent toward the child. In theory, all humans can be placed somewhere along the acceptance-rejection continuum.

According to PAR theory (Rohner, 1975a, 1975b, 1980, 1986, 1991), parental affection may be expressed physically in such ways as fondling, hugging, kissing, and caressing, or verbally through complimenting, praising, or saying nice things to or about one's child. Parental rejection (i.e., the absence or significant withdrawal of warmth and affection), on the other hand, seems to be expressed universally in forms of aggression-hostility, neglect-indifference, or "undifferentiated" rejection in which parents withdraw warmth from the child. Undifferentiated rejection refers to conditions where children perceive their parents to be unloving and uncaring (i.e., rejecting), but where such rejection does not clearly reflect either parental coldness/lack of affection, aggression/hostility, or neglect/indifference, per se.

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Starkey (1980) investigated the relationship between children's perceptions of parental acceptance or rejection and their academic performance using data from 220 fourth and fifth grade boys and girls. Scores on the PARQ represented children's perceptions of parental acceptance or rejection. Measures of academic performance included Science Research Associate (SRA) achievement test scores and grade point averages (GPA). Children's achievement test scores, as well as their GPAs, varied directly with their perceptions of parental acceptance or rejection. Specifically, the more accepting children perceived their parents to be, the better those children performed on both measures of academic success. This relationship continued to be significant after controlling for of parents' level of education and occupation, and children's IQ.

Estrada, Arsenio, Hess and Holloway (1987) used longitudinal data to support the link between the affective quality of the mother-child relationship and school-cognitive performance. A relationship rating was used to assess global categories of positive and negative affective expressions that indicated the emotional quality of the relationship between mother and child. Sixty-seven mothers and their children participated in the first (preschool) phase of the study; 47 were included in a follow-up study

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when the children were 12 years old. The researchers found that the affective quality of the mother-child relationship when the child was 4 years of age was significantly correlated with the child's school achievement at age 12. This association remained significant when the contributions of maternal IQ, socio-economic status (SES), and children's mental ability were taken into account. This study suggested that the affective relationship influenced children's cognitive development in three ways: (a) by affecting parents' tendency to support children in solving problems, (b) by affecting children's social competence, and (c) by affecting children's willingness to persist in tasks.

Hahn (1980) examined relations among perceived parental acceptance or rejection, self-evaluation, and academic achievement of Korean American children. In her study, a nationwide sample of 171 Korean American children responded to the PARQ and the Personality Assessment Questionnaire (PAQ). The results of this study indicated positive inter-correlations among the three variables. Specifically, a positive correlation was found between perceived parental acceptance and children's self-evaluations. In addition, positive self-evaluation was associated with higher academic achievement. Moreover,

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Parental warmth is important because it provides an atmosphere in the home in which children are likely to learn certain values that parents want to teach them (Kim, 1994). Clausen (1980) further argued that parental warmth and parental control are essential ingredients in the development of competent children. If the parent-child relationship is close and affectionate, parents can exercise the necessary control without having to apply heavy disciplinary pressure (Maccoby, 1980,1992).

Hess and Halloway (1984) identified five processes linking family and school achievement: (a) verbal interaction between mother and children, (b) parents' expectations for achievement, (c) positive affective relationships between parents and children, (d) positive parental beliefs and attributions about the child, and (e) effective and rational discipline and control strategies. According to Dornbusch et. Al. (1987), among these family variables, parents' discipline and control strategies appear to have a major influence on children's academic achievement.

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Control Dimension

Parental control is a bipolar continuum ranging from strictness to permissiveness (Schachter, 1965, Rohner, 1975a, 1975b, 1980, 1991). In her studies of parenting, Baumrind (1965, 1967, 1971, 1973, 1978, 1989, 1991) distinguished between authoritative control (firm/shared control) and authoritarian control (restrictive/coercive control). Although both authoritative and authoritarian parents set limits on their children, their methods of control differ. Authoritative parents use both reason and power to persuade and confront their children. In contrast, parents who are high in authoritarian control constrain and constrict their children's activities, preventing age-appropriate exploration. They demand their children to follow the rules without explaining the reasons for setting up those rules. Baumrind (1973, 1978, 1989) indicated several problems associated with authoritarian control. Specifically, children who experience authoritarian control are withdrawn, dependent, disinterested in school, and often hostile with peers. Baumrind further recognized problems associated with parents' failure to control. Children who are least pro-social tend to have permissive parents who are low in parental control (Baumrind, 1973, 1978, 1989).

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Parenting by Mother and Fathers

Researchers have argued that mothers and fathers differ in their parenting styles (e.g. Becker, 1964; Lamb, 1981, 1997; Maccoby & Martin, 1983; Rohner, 1997). Mothers and fathers may differ in their positions on the two major dimensions of parenting but each may make unique contributions to children's development (Lamb, 1981, 1997; Maccoby & Martin, 1983; Rohner, 1997). Fewer researchers have examined the unique characteristics of mothering versus fathering in the child-rearing process.

Researchers Lamb (1997), and Pleck (1997) have concluded that children with highly involved fathers tend to be more cognitively and socially competent, less inclined toward gender stereotyping, more empathic and psychologically better adjusted than those whose fathers are less involved (Rohner, 1997). Young, Miller, Norton, and Hill (1995) also suggested that perceived paternal love and caring are as predictive of sons' and daughters' life satisfaction--including their sense of well-being--as are maternal love and caring. The authors used the data from a sample of adolescents from the National Survey of Children. Three facets of parental support--intrinsic, extrinsic, and closeness--were identified, and their effects on children's

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satisfaction were examined. Intrinsic support by both mothers and fathers emerged equally as the strongest predictor of life satisfaction of adolescent offspring.

The Rohner and others work substantiates the need for further study into the possible relationships between warmth and academic achievement. In Michigan, academic achievement is measured by the Michigan Educational Assessment Program (MEAP) test. There is widespread belief that academic achievement needs to improve. Others have considered how to do that through curriculum revision, intervention services, and new teaching methodologies (Lezotte, 1999). This study focused on Michigan students and their families. It explored individual and family factors possible effect on academic achievement as measured by the 4th grade MEAP reading test.

MEAP Test and Academic Achievement

MEAP scores have always served as a measure of accountability for Michigan schools, but now more than ever, a lot is riding on the MEAP. Parents want their children to perform well on this test so that their children may qualify for state funding for college tuition. Parents expectations and the public's increasing interest

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in MEAP scores have influenced school administrators to place even more importance on MEAP scores. Principals want their school to fare well in comparison to other schools, and this expectation is passed along to teachers (Van Moorlehem & Newman, 1998). While most teachers accept this form of high-stakes testing as a way of life and most reading experts agree that tests such as the MEAP are more valid than the multiple choice language arts and reading tests of the past, many are worried about the growing importance of the MEAP due to the fact that an individual student's proficiency in the language arts cannot be fairly assessed by a single instrument, despite its validity (Allington & Cunningham, 1996).

Teachers also voice concern over the effects that pressure to perform well on the MEAP has on students. Among teachers' complaints are that some students get so nervous on test day their performance is hindered. At the other extreme, some students become "desensitized" to the MEAP due to the days and sometimes weeks of MEAP practice sessions carried out in the classroom (Van Moorlehem & Newman, 1998).

The reliability and validity of the Michigan Educational Assessment Program (MEAP) has been studied.

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Burns (1998) investigated the properties of Michigan's testing tool. Reliability studies have indicated that the scores from the MEAP, ranging from 0.654 to 0.949, are generally acceptable. The State Department of Education (SDE) offered supporting evidence for the tests' criterion and construct validity and further concluded that no criterion evidence could be offered, since no other test matched the purpose of the MEAP. An independent evaluation by the Saginaw public schools (Michigan) suggested a generally low criterion validity for the story selection test and poor validity for Hispanic students. The remaining tests fell below an acceptable level for criterion validity. Burns (1998) concludes that overall the MEAP has some advantages, but its tests have not demonstrated adequate reliability or validity to make decisions about individual students, assess writing skills adequately, assess Hispanic students, or make decisions about district or teacher effectiveness.

Rosen (1987) conducted a study to consider factors in conjunction with the improvement or non-improvement of grade 4 MEAP in reading. She selected four schools in southeastern Michigan: (1) teachers and principals attitudes, (2) school climate, (3) specific teaching on the MEAP objectives, (4) curriculum policy and practices, (5)

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emphasis on compensatory education, and (6) community factors.

Pairs of schools from two districts were selected according to the following criteria: (1) similar school size, (2) similar low level scores on the 1975 MEAP test scores in reading, and (3) significant differences in the MEAP test scores in reading by 1978 in one school of each pair.

A questionnaire was administered to participating teachers in grades K-3 and the principal in each selected school, followed by a personal interview with each one. Analysis of the data collected suggests these factors may be associated with improving scores: (1) A more positive change in school faculty toward their student's progress may affect improved scores. (2) When teachers feel they have a positive effect on student achievement, this attitude may affect achievement. (3) More "time on task" may contribute to higher MEAP scores. (4) Higher teacher morale may have a positive effect on student achievement. (5) Less use of teacher aides may have a positive effect on student achievement. (6) When parents are satisfied with their child's academic curricula, it may affect the child's

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level of achievement. (7) Parental involvement may have a positive effect on student achievement and MEAP scores.

A study by Garland (1980) identified factors that are related to above and below average achievement of fourth grade students on the Reading test of the MEAP. The relationships among student achievement on the MEAP reading tests and compensatory programs, school climate, home environment and parental values were investigated. Ninety fourth grade students from four elementary schools in a mid-western public school system were the subjects. The data for the study were obtained from parents' and teachers' responses on self-administered questionnaires, as well as school records of students' performance on the MEAP reading test.

Data analysis revealed that there were statistically significant relationships between student achievement on the MEAP reading test and the following: (1) family related variables; (2) teachers perceptions of parents expectations with regard to education; (3) teachers of high achievers Perceptions of parents' values related to education, expectations parents have for their child's education, and the effect parents, teachers and peers have on student achievement; (4) teachers of low achievers perceptions of

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parents' values related to education, expectations parents have for their child's education, and the effect parents, teachers and peers have on student achievement. Teachers of high achievers reported the following more often than teachers of low achievers: (1) parents attended parent-teacher conferences, (2) parents asked for feedback, (3) parents expect child to make mostly A's and B's, (4) parents would object to child's passing with "D" average.

The results indicated that family background, parental values, and teachers' perceptions of parents' values, expectations, and the effect parents, and teachers have on achievement had a significant impact on student achievement.

Quality of a school district, as determined by the general public, is often based on student performance and community wealth. The primary purpose of Vanvalkenburg's study (1990) was to determine if there was a relationship between school district performance on the MEAP and the wealth of the residents of the school district. The average adjusted gross income of district residents and the value of residential property in the districts of Wayne County, Michigan were compared to the MEAP scores of fourth, seventh, and tenth-grade students in the areas of math and

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reading for 1984 and 1985. The secondary purpose of this study was to determine if there was a relationship between selected in-school characteristics and student achievement on the MEAP. Per pupil expenditures, the racial composition of the student population, the student/teacher ration in the district, and the size of the district were compared to the MEAP scores.

The findings of this study indicated that the income level of the residents of the school district, the value of the homes in the school district, and the low minority student counts had the greatest affect on student achievement on MEAP scores. Per pupil expenditures, student/teacher ratios, and the size of the school district were found to have little or no affect on student achievement in these areas.

Another study by Snyder (1995) also investigated the possible relationship between financial consideration and student achievement. The purpose was to investigate if a relationship existed between per pupil funding levels and achievement levels of students in Michigan. The study asked the question whether a correlation existed between student achievement as measured by MEAP and the amount of per pupil funding in the student's school district. The findings

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indicated little, if any, correlation existed between student achievement as measured by MEAP and the amount of per pupil funding.

Parental Involvement in Schooling

Steinberg, Lamborn, et. al. (1992) argued that parenting styles have concrete behavioral manifestations. It is through these concrete parenting behaviors that a parenting style influences the child's behavior. Parents' involvement in schooling is seen as a particular parenting practice with specific educational goals (Epstein, 1987; Hess & Halloway, 1984; Keith, 1991; Steinberg, Lamborn et. al. 1992; Stevenson & Baker, 1987). Educational researchers especially have been interested in the effect of parental involvement in schooling on student academic achievement (Christenson, Rounds & Gorney, 1992; Steinberg, Lamborn, et. al., 1992).

The term "parental involvement" has multiple meanings. According to Keith et. al. (1993), it appears that most definitions of parental involvement focus on: (a) parents' academic aspirations and expectations for their children, (b) participation in school activities and programs, (c) a home structure that supports learning, or (d) communication

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between parents and children about school. Keith (1991) concluded that the effects of parental involvement may vary with the age of children, the definition of parental involvement, and the definition of learning. Researchers have been relatively consistent in suggesting the importance of parental involvement for preschoolers and elementary-age students (Epstein, 1987, 1991; Stevenson & Baker, 1987), but findings have been more uncertain as students grow older (Keith et. al., 1993).

Stevenson and Baker (1987) examined the relationship between parental involvement in school activities and the child's school performance with a nationally representative sample of 179 school-aged children ranging in age from 5 to 17 years. Children of parents who were more involved in school activities did better in school than children whose parents were less involved. Also, parents of younger children were more involved in school activities.

Home environments in which academic achievement is valued appear to be related to better grades and better achievement test scores among middle school students (Keith et. al., 1993; Kurdeck & Sinclair, 1988). Keith et. al. examined the effects of parental involvement on the achievement of eight-grade students, using data from a

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nationally representative sample of 21,814 students and their parents. The definition of parental involvement in the study included components of parents' educational aspirations, parent-child communication, the structure of the home (e.g., family rules about how many hours children were allowed to watch television, how often parents checked on children's homework), and parents' participation in school activities. Parents' involvement in students' academic lives was found to be a powerful influence on eighth-grade students' achievement. The effect held for all academic areas and appeared to result in part because students with more involved parents completed more homework than those whose parents were less involved.

Steinberg, Dornbusch, and Brown (1992) studied the way in which family contexts affected adolescents' behavior, schooling and development. A survey questionnaire with a series of standardized psychological inventories, attitudinal indices, and demographic items was administered to a large sample of high school students ($n = 15,000$). Adolescents whose parents were warm, firm, and democratic achieved better scores on measures of school performance than did their peers. Furthermore, parents were the most prominent influence on adolescents' long-term educational

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plans, whereas peers were the most potent influence on youths' day-to-day behaviors in school.

Steinberg, Lamborn, et. al. (1992) examined the effect of parenting style and parental involvement in schooling on adolescents' academic achievement in an ethnically and socio-economically heterogeneous sample of 14 to 18 year olds (n = 6,400). Adolescents reported on their parents' child-rearing practices, as well as on their parents' involvement in schooling. Academic achievement was assessed in terms of GPAs across math, English, social sciences, and science. The researchers found that parental involvement was much more likely to promote adolescents' school success when it occurred in the context of an authoritative home environment. It was also reported that non authoritativeness diluted the beneficial effect on adolescents of parents' involvement in schooling. Findings such as these suggest that large gains in achievement can be realized through programs that give parents concrete information about parenting styles, teaching methods, and school curricula (Sui-Chu & Wilms, 1996).

Early school success also is influenced by parent involvement. Marcon (1993) examined the academic achievement of an original sample of 168 inner-city

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children who were making the transition from the primary to upper-elementary grades. Responses from interviews that had previously been conducted with the children's pre-kindergarten, kindergarten, and first-grade teachers provided information on the involvement of the children's parents in the youngsters' education. At each grade level, children were categorized into two groups based on whether their parents were or were not involved with the school. Measures of school competence included grade retention and special education placement. Measures of student achievement included grades, scores on standardized achievement tests, and attainment of reading and math objectives. Results indicated that children whose parents were not involved with the school during pre-kindergarten were more likely than children whose parents were involved to be retained before their fifth year in school. Children whose parents had been involved with the school during their children's second year in school had higher grades and higher achievement test scores at the end of their fifth year in school than did children whose parents were not involved.

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SES and Academic Achievement

SES and academic achievement have long been associated as related variables. Kruse (1996) conducted a study to determine whether students from low socio-economic environments had lower academic achievement than students from higher socio-economic environments. The sample consisted of 66 6th-grade science students from a middle school in Texas. Students were divided into a low-income group and a non low-income group. Midterm and final grade averages were determined for each group. When t-test results were analyzed, the significance of the relationship between academic achievement and socio-economic environment was apparent ($P = .011$ for the midterm grade and $.000$ for the final semester grade).

Another Texas study concerned itself with the relationship between SES and academic achievement (Matuszek, 1978). Interviews were conducted with 533 parents across the Austin Independent School District to obtain information on job status, age, income, education, attitude toward education, amount of reading in the home, mobility, time spent watching television, and preschool experiences. In summary, the survey indicated that, for the school district, the most consistent indicators of children

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The difference between reading and mathematics achievement were studied in 10 high and 10 low SES elementary schools in an urban district in the Midwest. The schools representing the top and bottom quartiles from among 40 schools were classified as high or low SES. The gap of almost one standard deviation in mean reading and mathematics achievement levels between these quartiles remained nearly constant as the students progressed from grade 2 through grade 6. The achievement gap was consistently larger for reading than for mathematics. Associated with the achievement gap was a student behavior gap, reflected in attendance and suspension rates. The achievement and behavior gaps were highly correlated.

Shakiba-Nejad (1981) examined the SES, parent participation, teacher awareness, and academic achievement of 76 elementary school students. Results were obtained through interpretation of data and review of relevant literature. A strong positive correlation was found between a students' SES and their academic achievement. Some findings attribute poor academic achievement in part to the fact that lower SES students have very poor attendance

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records. The literature reviewed and study data indicated that teachers' attitudes toward low SES students were not overly positive in regard to student achievement.

Recommendations for improving the training and in-school experiences of teachers of low SES students included involving parents with the school and in the education of their children.

Guskey (1997) investigated the relationship between selected contextual and socio-economic variables and school-level results from a statewide performance-based student assessment. The Kentucky Instructional Results Information System (KIRIS) uses student performance in the areas of mathematics, science, social studies, arts and humanities, practical living and vocational skills. Multiple regression analyses were conducted using data gathered over a 3-year period (1993 to 1995) from 49 schools in one school district. Results indicated that a single socio-economic variable, the percentage of students qualifying for free or reduced-cost lunch, explained a large portion of the variance in scores at all school levels.

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Gender and Academic Achievement

National standardization data were used to reexamine the evidence of gender differences in achievement test scores reported in previous studies (Han, 1994). Changes in differences over time, from 1963 to 1992, were examined, as were differences across all grade and achievement levels. Results generally agreed with those from previous studies. In general, the nature and magnitude of differences in achievement were similar over the years. Average differences in achievement between males and females were relatively small in most subject areas, with females scoring higher in reading, language skills, and mathematics computation up to age 15, when the opposite occurred in mathematics. Kaiser (1994) studied the effects of gender on academic achievement in 239 latchkey children in grades 3 through 5. Girls scored higher than boys in reading in grade 4.

Dulaney and Banks (1994) investigated the relationship between level of academic achievement and gender and race of students in North Carolina's Wake County public school system. The comparison was conducted using 1993 end-of-grade tests. The results indicated that white females were

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Soderman and Phillips (1986) discussed four significant areas in which there are gender differences that affect children's approach to formal education. - Because young males lag in psychosocial development, teachers must learn to assess children's developmental abilities and plan suitable curricular activities for both sexes.

Sex-stereotyping attitudes and behaviors of educators have been cited as particularly important influences on the development of gender differences in children and adolescents. Because teachers' attitudes, beliefs, and perceptions about gender differences may influence the formation of students' confidence in academic subjects and school in general, the perceptions that educators have of real or imagined gender differences can be used as one indicator of the conditions that may influence elementary and secondary school students.

Parker-Price (1996) examined K-12 teachers' classifications of selected characteristics as more typical of males or females in their classrooms. In addition to evaluating the teachers' agreement with scientific evidence

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for gender differences, the researcher examined perceptions regarding teacher gender. It was found that some teacher perceptions of student gender differences agreed with psychological research findings, and some with myths, whereas some favored no sex differences even when the research stated otherwise. Parker-Price also found that male and female teachers had different perceptions of the prevalence of some characteristics in boys and girls. In a similar study Bradley & Caldwell (1987) investigated the possibilities that young children's gender elicits differential academic expectations from aspiring teachers, and that aspiring teachers' gender and SES affect their academic expectations for young children. In this study, 103 university students majoring in education were surveyed. Results indicated that participants expected boys to have greater interest in physical education than girls, and girls to have greater interest in music and higher marks in reading than boys.

Family Composition and Academic Achievement

For decades families have been experiencing change in their composition and the divorce rate has risen to an all-time high. The collateral effects of divorce on families

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and children frequently have been studied. In the present study the effects of family stability on children and their academic achievement was of concern.

Dawson (1981) conducted a literature review on the effect of single-parent families on the academic achievement of children from such households. She argued that, historically, society has discriminated against children from single-parent families, especially those of divorced parents. Dawson cited research indicating that: (a) children from one-parent households have lower levels of socio-emotional development and academic achievement than do those from two-parent families; (b) students from two-parent families have higher reading comprehension than do students from one-parent families; (c) academic achievement of black children in one-parent families is lower than that of white children from similar families; (d) boys are more affected by divorce and manifest more "acting out" behavior than girls; (e) low income, which is characteristic of one-parent families, is a factor in the probability of girls dropping out of high school; (f) the female head of household is often less skilled and educated than the average male who has custody of his children; and (g) the father's role makes a difference in the behavior of children, especially boys.

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Guttmann (1987) examined whether there is a difference in the threshold of withdrawal from schoolwork between children of divorced parents and children from intact families. Results showed that children of divorced parents had lower levels of achievement and lower withdrawal thresholds than did those from intact families.

Can living in a single-parent household adversely affect children's school achievement? This question was the central theme of a study conducted in rural Washington state (Shreeve, 1985). The researcher surveyed a homogeneous population of 201 7th through 12th grade students by administering California Achievement Tests and collecting GPA data. In every instance but one, single-parent students scored lower than did their two-parent counterparts. These results and the homogeneous nature of the population suggested that family composition may be the deciding factor in many students' school success.

Parents' separation and divorce can have an adverse effect on adolescents' academic performance and achievement (Nisivoccia, 1997). Nisivoccia pointed out that the ensuing psychological and social disadvantages can significantly interfere with students' reaching their full potential for success in school. Nisivoccia's review of the literature

yielded a number of insights: (a) marital dissolution has been found to have potentially grave consequences and negative results for many children; (b) family structure has been identified as the main cause of lower GPAs among children of divorce; and (c) research also has suggested that reduced income may be responsible for some differences in children of divorce.

In an analysis of national survey data Thompson (1994) found that, compared to those from other types of families, children living with both biological or both original adoptive parents had the best academic and behavioral outcomes. Economic disadvantage accounted for many of the poor outcomes of children in single-mother families.

In a 1986 study, Chalker tested the hypothesis that there is no significant difference in reading achievement among children in grades 2 through 5 related to family structure. Researchers administered the Stanford Achievement Test to 119 students in a suburban school system in Alabama. Of the sample, 69 children lived in intact families and 50 lived in either single-parent or "blended" families. A blended family was defined as a child living with a stepfather or stepmother as well as one biological parent. In addition to the test, pupils

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completed a demographic data sheet. The data upheld the hypothesis for children in grades 2 through 4; however subjects in grade 5 who were in intact families exhibited higher scores in reading achievement than did those from other family types.

Another researcher looked at the effects of family configuration, family income, and gender on children's academic achievement (Kaiser, 1994). The sample comprised 239 latchkey children in grades 3 through 5. Kaiser found that children of single parents scored lower on reading and language measures in grade 4 than did youngsters in two-parent families. Girls scored higher than boys in reading in grade 4.

Leunj (1993) studied family configuration as a factor influencing students' perceptions of parental behaviors that support schoolwork. A total of 439 public school and 399 parochial school students in grades 6 through 12 were surveyed. Results indicated that students from intact, two-parent homes perceived greater parental concern and support for and help with their schoolwork than did students from single-mother or stepfather families. Consistent with those of other researchers who found that school performance was related to family configuration, these results suggested

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that to promote the development of school achievement values and behaviors among children from non intact homes requires an increased emphasis on parental concern and support for schoolwork and parental help with that schoolwork.

Family Mobility-Stability and Academic Achievement

In view of the statistics on the high degree of mobility in the student population across the United States, it is surprising that so little definitive research is available on the effects of mobility on the achievement and adjustment of students and so few suggestions for schools about how best to provide educational services to an increasingly transient student population. Mobility studies that have been undertaken have indicated that correlations were found between mobility and poor achievement in language, reading and mathematics (Newman, 1988).

Water's (1996) studied mobility and reading achievement by considering the effects of geographic mobility on elementary school students' achievement. Although such mobility, which requires students to make multiple moves among schools, can have a negative effect on

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academic achievement, Waters hypothesized that mobility was not a determining factor in reading achievement. Subjects were 157 fourth and fifth grade students, who were a representative sample of a multiethnic, diverse socioeconomic group in a suburban elementary school district in New Jersey. Results indicated that, although the difference in reading scores between pupils who had moved only once and those who had attended the same school was relatively small, significant differences were found between those who had attended one or two schools and those who had attended three or more schools.

Mao (1997) examined the magnitude of student mobility in the Texas public schools by reporting how many students were moving, when and where they were moving, and who was moving, and by clarifying the relationships between mobility and academic performance at the individual student, campus, and district levels. The primary focus of the study was on within-year student mobility. Issues also were examined longitudinally by following students who were in grade 1 in 1991-92 through the 1995-96 school year. Results led Mao to conclude that there were significant relationships between mobility, and academic performance and school accountability. Mobile students scored lower on the state required tests than did students who did not

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move, and this negative relationship was strongest in schools with high student turnover rates or high percentages of economically disadvantaged students.

Wright (1999) reviewed studies on the effect of student mobility on achievement test scores. Other risk factors, such as low family income and ethnic minority status, were found to influence mobility equally. Data were collected from students in selected grade levels in an urban, Midwestern school district, using nationally normed standardized tests and state assessments in reading and math. Low achievement scores were associated more highly with internal mobility than with external mobility. However, mobility was determined to be confounded with family income and ethnic-category membership and to have less effect than either of those two factors.

The effect of student mobility on the academic achievement of a population of sixth-grade students from the southwest side of Chicago was generally consistent with other findings from other research (Evans, 1996). Reading and math scores from the Iowa Test of Basic Skills were compared for two groups. The analysis did show slight gains for students who had attended the school 5 to 6 or 3 to 4 years versus 1 to 2 years.

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It is clear from this review that perceptions of children concerning parental behaviors as well as other factors associated with individuals and families have an effect on children's academic achievement. The

- relationships that exist between individual, family factors, and academic achievement has a large impact on public education.

The finds from this study did not support the research cited in the areas of: age, gender, family composition, stability/mobility, SES, and mother's warmth. Help with homework was a significant finding that supports the work of Epstein and others. Continued efforts in partnerships between parents and schools is a worthwhile effort that will have a positive effect on academic achievement.

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Chapter 3

Methodology

The Setting and Sample

The sample (n=94) for this study was drawn from fourth and fifth-grade students in three elementary buildings in the same mid-Michigan public school district. The K-12 district has an enrollment of 2,000 students in three elementary schools, one middle school and one high school. The schools are in both rural and suburban settings. Of the 2,000 students enrolled in the district, 92% are Caucasian, 3% Native American, 2% Hispanic, 2% African American, and less than 1% other races. More than 30% of the district's elementary students come from families which report an annual or monthly income that is below the published Federal income guidelines. Because of that, those students qualify for a free or reduced lunch provided by public schools.

The community in which the study was conducted is from a conservative mid-Michigan area. The school community is influenced by a large global chemical company which is located in the adjoining urban school district, although the district under study does not benefit financially from

that company. During the 1998-99 school year, 50 (2.5%) students entered the K-12 district, 20 (1%) students left the district.

There are six fourth-grade classrooms and six fifth-grade classrooms. The sample used in the study was comprised of those fourth and fifth-grade students who returned a signed parental consent form (Appendix 1). In order to obtain the parental consent the researcher first had to obtain permission from the school district. Permission was obtained from the Superintendent (Appendix 2) to conduct the study within the school district. At an administrative council meeting the researcher explained the study and procedures to building principals. The researcher attended staff meetings at the elementary buildings where the study would be conducted and explained the study and procedures that would be used to obtain the data.

Data Collection

The researcher obtained permission from the school district to administer the research instrument in the three elementary buildings (Appendix 2). Permission also was granted by the Michigan State University Committee on

Research Involving Human Subjects (UCRIHS) to conduct the study (Appendix 3).

A letter informing parents of the research project was signed by all three building principals and sent home with all fourth and fifth grade students. A consent form was located at the bottom of the letter (Appendix 1). Parents were asked to sign and return the consent form if they were willing to have their student participate in the study. An opportunity was offered at each elementary building for parents to meet with the researcher and ask questions concerning the study or its' procedures. No one attended any of the three scheduled meetings. The data were collected during a 1 week period in June 1999.

After students returned their consent forms to the school office each building principal compiled an alphabetical list of the fourth and fifth graders who would be participating. Each building principal maintained the list of students participating. Each student on the list was assigned an identification number. The number identified each student and the school he/she attended. The identification number was placed both on the PARQ instrument and on the outside of the envelope containing the instrument. When the instrument was administered, the

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researcher handed each student his or her envelope. There were no names on the instrument or the envelope containing the instrument. At the conclusion of the data gathering, each building principal relinquished the building's data (PARQ surveys and list of participants with identification numbers) to the researcher.

The researcher contacted building principals and classroom teachers to arrange an appropriate time and place to administer the survey instrument in each of the three elementary schools. Coordination with each building principal and teacher allowed the researcher to plan the best time and day to administer the PARQ survey. The day the survey was administered the identified students left their classrooms and joined the researcher in a separate room within the school where the PARQ was administered. The researcher introduced himself to the study participants and explained what they were going to be doing (Appendix 4).

The Parental Acceptance Rejection Questionnaire (PARQ) (Appendix 5) was the instrument used for data collection. The researcher explained what the project was about and why the research was being conducted and students were asked to respond honestly. They were reassured that the information

they provided would be kept confidential and that their responses would be used only by the researcher and not shared with anyone else.

LaGreca (1990) stressed the importance of wording instructions carefully to decrease the possibility of students' giving responses they deem socially desirable. The researcher emphasized to the students the difference between a survey questionnaire and a test, stressing that the questionnaire was not a test, and therefore there were no right or wrong answers. He explained that he was interested only in what the students thought or felt about each question. The researcher also pointed out that it did not matter if students responded differently from the others in the group. They were to choose the best answer for their situation. Students were assured that no one else would read their answers, and that their names would not be used when information about the research project was shared.

The researcher first asked the students to complete sample questions to familiarize them with the response format and with how to mark their answers. He then read the survey items aloud to facilitate reading comprehension. The total survey took approximately 30 to 40 minutes.

Even though the researcher was known by many of the community, the number of parents allowing their child to participate was limited $n = 100$ (31.6%). Students were allowed to participate from a population of 316 fourth and fifth grade students. The community has limited ethnic diversity. There are less than 9% Hispanic, Asian, African American or Native Americans living in the community. These are limitations on the study.

Table 1. Demographic Characteristics of Fourth and Fifth Graders in the Study Sample.

	School Population 4 th /5 th	Participants	Gender	
			M	F
School 1	92	28 (30%)	12	16
School 2	56	21 (38%)	11	10
School 3	168	51 (30%)	21	30
Totals	316	100	44	56

Study Participants

The sample was comprised of 33 (33%) fourth graders and 67 (67%) fifth graders, of whom 56 (56%) were females and 44 (44%) were males. Twenty-two (22%) members of the sample qualified for free lunch (low SES). Seventy-one (71%) lived in intact households, and twenty-nine (29%) students lived in not intact families. The participants were between 10 and 12 years of age.

The sample reported some mobility. Thirteen (13%) reported that they were new to the school the same year they took the MEAP test. Five (5%) said they had been students in the school in which they took their 4th-grade MEAP for 2 before taking the test. Twenty-one (21%) indicated they had been in the school in which they took the MEAP for 3 years before taking the test. The largest group in the sample, sixty-one (61%), had been students in the school in which they took the MEAP for three or more years.

Instrumentation--The Parental Acceptance Rejection Questionnaire

For more than 50 years researchers in the United States and internationally have investigated possible relationships associated with parental acceptance and rejection (Rohner, 1986). PAR theory represents a distillation and structuring of that work around a coherent theoretical framework. Unlike other efforts in the area of parental acceptance and rejection that drew from clinical and other disturbed populations, Rohner's research has drawn primarily naturally occurring ranges of variation, in presumably "normal and healthy" families and children in the United States and cross-culturally (Rohner, 1986).

The PARQ was constructed on a rational-theoretical basis (Goldberg, 1981). Several theoretically pertinent factors were taken into account as the questionnaire was constructed. First, cross-cultural evidence has shown that all children experience more or less acceptance and rejection at the hands of the people most important to them, usually their parents. Parental acceptance and parental rejection are expressed in four principal ways the world over, as warmth-affection, or as aggression-hostility, neglect-indifference, and undifferentiated rejection--either as experientially perceived by the child

or as "objectively" determined by the investigator. Each of these expressions may, in turn be expressed verbally or physically. In recognition of this fact, items on the PARQ scales were constructed to measure these various manifestations of the perceived-warmth dimension.

Because the PARQ was constructed for use cross-culturally, three additional considerations guided the development of the instrument. First, the scales had to have universal applicability; second, the terms used each scale had to have common international referents; and third, the phraseology of the items had to be decentered from standard American English.

Previous work on the cross-cultural survey using a sample of 101 societies showed that verbal and physical forms of warmth-affection, aggression-hostility, neglect-indifference, and undifferentiated rejection were the principal manifestations of acceptance and rejection the world over (Rohner, 1975, 1986). In 1971 the test items were screened and decentered from idiomatic American English with the help of two Turkish anthropologists in collaboration with three American English speakers. Over the next 2 years, the child and adult versions of the PARQ were pilot tested on small samples of English-speaking

children and adults in New England to detect any further problems with the test instrument, test items, and response format. Troublesome areas in the questionnaire were corrected.

Validity and reliability of the Child PARQ were tested with a sample of fourth and fifth-grade students in three metropolitan Washington, D.C., elementary schools. The final sample consisted of 220 respondents, 118 of whom were female and 102 were male. There were no significant age or sex differences in children's responses to the instrument (Rohner, 1991).

The validity-study version of the PARQ was the modified version of the instrument produced for assessing the concurrent validity of the PARQ scales. The modification was created by inserting items in cyclical order from two already validated instruments. Three scales from Schaefer's (1959) Child's Report of Parent Behavior Inventory (CRPBI) and one scale from Bronfenbrenner's Parental Behavior Questionnaire (Siegelman, 1965b) were used as external measures of concurrent validity for the four PARQ scales. Internal reliabilities of the Child PARQ scales assessed in United States ranged from .86 to .95. Factor analysis of items tended strongly to yield the

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expected factors, thus providing further evidence regarding the instrument's construct validity (Rohner, 1986).

Three versions of the PARQ have been developed (Rohner, et. al., 1977): (a) the Mother PARQ, to which mothers respond according to their perceptions of the way they treat their own children; (b) the Adult PARQ in which adults are asked to reflect on the way they were treated when they were about 7 through 12 years old; and (c) the Child PARQ in which children are asked to reflect on the way their primary care-giver (usually the mother) now treats them. In all three versions, respondents assess parental behavior in terms of four scales: (a) perceived warmth and affection, (b) perceived hostility and aggression, (c) perceived neglect and indifference, and (d) perceived undifferentiated rejection. (Undifferentiated rejection refers to conditions in which parents are perceived as withdrawing love from a child.)

Validity and reliability of the Child PARQ were assessed on a sample of 220 boys and girls ranging in age from 9 to 12 years and living in the metropolitan Washington, D.C., area. Subjects were approximately evenly distributed between middle and working-class backgrounds, and they were about evenly divided by gender and ethnic

group. Results showed no significant differences among subjects with regard to age, gender, social class, or ethnic group on any of the Child PARQ scales. The internal reliabilities (coefficient alpha) of the scales on the Child PARQ ranged from .72 to .90. Additional information given in Rohner, Saavedra and Granum (1977) concerned the convergent, discriminant, and construct validities of these instruments.

All versions of the PARQ contain four scales: (a) perceived warmth and affection, (b) perceived aggression and hostility, (c) perceived neglect and indifference and (d) perceived undifferentiated rejection. The perceived parental warmth and affection scale refers to parent-child relationships in which parents are perceived to give love or affection without qualification, but not necessarily with great demonstrativeness. Accepting parents generally are seen as liking their children, as approving of their personalities and as taking an interest in their activities and well-being. Warmth and affection may be manifested by showing approval of the children; playing with them, enjoying, fondling, comforting or consoling, cuddling, and praising them, singing lullabies to them, kissing, caressing, and hugging them; and demonstrating love in words or other actions.

Perceived parental aggression and hostility, perceived neglect and indifference and perceived undifferentiated rejection are all forms of behavior falling at the negative (i.e., rejecting) end of the warmth dimension. Perceived parental rejection refers to the perceived absence or significant withdrawal of warmth and affection. Parents who are perceived to be rejecting seem not to like their children; they seem to disapprove of or resent them, and they are often seen as viewing the children as a burden rather than a pleasure. Many rejecting parents are seen to be cold and unsympathetic, and as comparing their children unfavorably with other youngsters. As indicated earlier, parental rejection is expressed in three principal forms: (a) as perceived or "objectively" determined hostility which typically is manifested as overt or disguised aggression; (b) as perceived or "objectively" determined indifference, which is often manifested behaviorally as neglect; and (c) as perceived undifferentiated rejection.

The perceived undifferentiated rejection scale refers to conditions in which the child sees the parents as withdrawing warmth from him or her (i.e., they are seen as rejecting the child), but in which such rejection does not clearly reflect either perceived aggression-hostility or perceived neglect-indifference. An example is item 4 in the

Child PARQ which states, "My mother does not really love me." This item does not reveal either perceived parental aggression-hostility or perceived parental neglect-indifference.

The perceived neglect and indifference scale refers to conditions in which the child sees the parents as unconcerned or uninterested in him or her. Such parents are seen by the child as paying little attention to the youngster, and they are apt to be viewed as spending a minimum amount of time with the child. When such parents are together with their child, they may be perceived to ignore the child's requests for help, attention or comfort. Further, they may be seen as forgetting promises made to the child, and they are often regarded as failing to attend to other details or needs important to the child's happiness or well-being. Neglecting or indifferent parents are not necessarily seen to be hostile, however; they simply may be viewed as cold, distant, or unconcerned about their child.

The perceived undifferentiated rejection scale refers to (a) conditions in which the child sees the parents as angry, bitter, or resentful of him or her (perceived hostility), or (b) conditions in which the child believes

the parents intend to hurt him or her physically or verbally (perceived aggression). Parents who are seen as being "aggressive" are often viewed as being critical, impatient, irritable, or antagonistic toward the child (Baumrind, 1965). Such parents may be seen to make disapproving or derogatory remarks to and about the child. Apparently aggressive, hostile parents may be viewed as nagging, scolding, and ridiculing their child; they may comment that the child gets on their nerves or express their frustration and irritation at the child's behavior in other ways (Rohner, 1975b). Other expressions of perceived undifferentiated aggression may include handling the child abruptly and roughly, hitting the child, cursing the child, and speaking to the child in what is perceived as a harsh, deprecating tone of voice.

One scale (warmth-affection) in the PARQ contains 20 items, two scales (aggression-hostility, and neglect-indifference) each contain 15 items, and the fourth scale (undifferentiated rejection) contains 10 items, for a total of 60 items in all three versions of the questionnaire. All items are arranged in a cyclical order.

Response Format

All versions of the PARQ use the same response format and scoring system. Respondents to the Child PARQ are instructed to ask themselves whether an item is basically true or untrue about the way their mothers treat them. If the statement is basically true, they are instructed to ask themselves, "Is it almost always true?" or "Is it only sometimes true?" Or, if an item is basically untrue about the way their mothers treat them, they are instructed to ask themselves; "Is it rarely true?" or "Is it almost never true?"

Scoring System

The items on the PARQ are scored as follows: *almost always true* = 4; *sometime true* = 3; *rarely true* = 2; *almost never true* = 1:

Seven items in the neglect-indifference scale (items 7, 14, 21, 28, 35, 42 and 49) must be reverse scored. That is, all of the scales including this one, are designed so that a high score indicates maximum warmth-affection, maximum aggression-hostility, maximum neglect-indifference, or maximum undifferentiated rejection. A high score on the

above mentioned neglect-indifference items indicated above however indicates a minimum of neglect-indifference.

Before arriving at a total (composite) score for the PARQ--a score indicating the overall level of acceptance or rejection perceived by a respondent--all items in the warmth-affection scale must be reverse scored. The rationale for reverse scoring the warmth-affection scale parallels the rationale just given for reverse scoring certain items on the neglect-indifference scale. That is, all of the scales are designed so that a high score indicates a maximum perceived warmth-affection, maximum perceived aggression/hostility, and so forth. Three of the four scales (perceived aggression-hostility, perceived neglect-indifference and perceived undifferentiated rejection) are measures of perceived rejection. Thus, to make the meaning of the perceived warmth-affection scale consistent with that of the perceived rejection scales, the perceived warmth-affection scale must be reverse scored so that a high score indicates minimum perceived warmth and affection (i.e., maximum perceived rejection). Since the warmth dimension of parenting is a measure of all the sub scales of the PARQ or a total PARQ score, this study used a total PARQ score to determine the participant's perception of mother's warmth.

Academic Achievement—the 4th Grade MEAP Reading Test

The sample of students in this study had taken the Fourth Grade Michigan Educational Assessment Program (MEAP) reading test. Their test scores were used in this study as a measure of academic achievement.

The Michigan Revised School Code and the State School Aid Act (1979) require that educational standards be established and that students' academic achievement be assessed. The MEAP tests were developed to determine what students know and what they are able to do, as compared to these standards, at key checkpoints during their academic careers.

The MEAP tests were developed to measure what Michigan educators believe all students should know and be able to achieve in five content areas: mathematics, reading, science, social studies, and writing (MDE, 1998). The MEAP tests have been recognized nationally as sound, reliable, and valid measurements of academic achievement. Students who score high on these tests have demonstrated significant achievement in valued knowledge and skills. Further, the tests provide a common denominator with which to measure how well students are doing, and to ensure that all

Michigan students are measured on the same skills and knowledge, in the same way, at the same time.

The MEAP tests can:

1. Measure academic achievement as compared to expectations, and whether achievement is improving over time.
2. Determine whether school improvement programs and policies are having the desired effect.
3. Target academic help where it is needed.

The test results paint a picture of how well Michigan students and Michigan schools are doing when compared to standards established by the State Board of Education. MEAP serves as a measure of accountability for Michigan schools. Michigan's MEAP tests are based on the Model Core Curriculum Outcomes and the Content Standards approved by the Michigan State Board of Education. No other published tests match Michigan's outcomes and standards.

Most MEAP test questions have been written by Michigan educators. Also, Michigan's MEAP tests are criterion referenced, meaning that the results are reported in terms of performance against a standard. These standards have set by Michigan educators and approved by the Michigan State Board of Education.

Student performance is judged according to whether or not each student meets the achievement standard. If a student meets the standard, it means he or she meets expectations set by the State Board of Education on the recommended curriculum.

Validity

Validity pertains to whether a test measures what it is supposed to measure. It refers to the degree of appropriateness, meaningfulness, and usefulness of the specific inferences made from test scores. Three kinds of validity are addressed: content validity, criterion validity, and construct validity.

The current generation of MEAP assessments is based on the Michigan Essential Goals and Objectives for Mathematics Education, Reading Education, Science Education, and Writing Education, which were approved by the State Board of Education in 1988, 1986, 1991, and 1985, respectively. Because the current MEAP assessments are achievement tests, which are used to assess what students have learned and should be able to achieve in specific content areas by the end of a certain grade, the type of validity of greatest concern is content validity. To verify Content validity,

test items must match the specified objectives given in the test blueprint or assessment framework.

Like all published achievement tests, the MEAP assessments have a blueprint that indicates the objectives to be tested in each content area. There is an infinite number of ways to write test items to measure each objective, and multiple forms are composed for each test. Not all objectives are tested in any given form of a test. Both "easy" and "difficult" items are used in every form to balance the difficulty of the items, and to equate the different forms to one another. The sample of items chosen for a test represents the domain of all possible test items that fit the blueprint. For a student to do well on a test, he or she must have mastered the entire domain, not simply bits and pieces of it.

Personnel in the MEAP office look at data in many ways to ensure that items are measuring what they are intended to measure. One of the first criteria is whether an item appropriately tests the content. It is difficult for Content Committees to know with certainty that an item adequately addresses content simply by looking at the item. Thus the data from tryouts and pilots offer invaluable insights.

P-Value. The first piece of data that the Content Committee examined is the p-value. It indicates the percentage of students who answered the item correctly. The MEAP staff also look at the percentage of students who chose each distracter (incorrect answers on a multiple-choice test). Staff pay particular attention when less than 30% of students select the correct answer. Because all multiple-choice items on the MEAP tests have four options, by chance alone 25% of students should mark the correct answer. Even if the content is appropriate, the item may not be measuring well. The final decision on an item is not based solely on p-values. They are simply used to indicate the need for further review.

Differential item functioning. This is a way of describing an item as potentially biased, or that it may function differently for one group than it does for another. If an item is identified as being potentially biased, it is returned to the Bias Review Committee. Sometimes the content of an item is really a curricular issue, meaning that one group of students did not do as well as another because they had not been taught the material.

Again, items usually are allowed to remain, are revised, or are discarded based on the decisions of the review committees. Changes to an item necessitate that it be pilot tested again before it may appear on an operational test.

Item discrimination. Item discrimination is used to compare the performance of students who score high on the test with that of students who score low. If an item discriminates poorly, it means that low-scoring students did as well as or better than high-scoring students on that item. This often occurs on very easy items that practically everyone answers correctly. As long as an item is measuring good content, even if the item discriminates poorly it is kept. However, if low-scoring students do as well as or better than high-scoring students on a moderately difficult or difficult item, MEAP staff give the item a closer look. The MEAP staff also look at the distracters to ensure they are not misleading students unintentionally.

Reliability. For the MEAP tests, reliability is determined by using internal-consistency formulas, which indicate how homogeneous the test items are, or the degree to which students' responses to each item correlate with their total test scores. Cronbach's coefficient alpha, a

measure of internal consistency reliability, usually is used when constructed response items appear on a test. It can also be used when there are solely multiple-choice items, or when combinations of item types are used. Typically, the more lengthy the test, the higher its reliability. The reliability indices for the MEAP story and informational sub-tests are: .814 (story) and .809 (informational).

The district, for the preceding 3 years, tried to measure students' perceptions of parent involvement. As part of the MEAP test students were asked, "Does your parent help you with homework?" The study sample indicated a strong tendency toward parents helping with homework; only 4 (4%) of the 94 students who responded to this question answered other than "often" or "after I ask."

Individual and Family Factors

The researcher used both individual and family factors as independent variables. Each participant's chronologic age was calculated from the date the PARQ was administered (June 6, 1999). The range of ages were 10-12 years with a mean age of 10.89 years.

In order to determine intact or not-intact families each participant's school entry data card and the personal knowledge of school personnel was used to make the determination. There were 68% of participants living with intact families in this study.

Family stability data were taken from the school records (CA-60). The CA-60 document is prepared when a student enters a Michigan public school. One piece of data in the CA-60 is the number of times a student moves from one school to another. Data was gathered that indicated the number of years the participant was actually a student at the school where they took their fourth grade MEAP test. The mean average for the number of years the participants were students in the school in which they took their fourth grade MEAP test was 2.5 years.

Data Analysis

The PARQ questionnaires were each assigned an identification number, which corresponded to the same number assigned to the student responding to the questionnaire. Data were entered into the Statistical Package for the Social Science (SPSS,1997) using the

student identification numbers. Before the data analysis, each variable was examined for missing values, skewness and accuracy of data entry.

Descriptive Statistics

Descriptive statistics (frequency, mean, standard deviation, range) were used to describe the characteristics of the sample. Cross tabulations illustrate the demographics of the variables.

Inferential Statistics

Correlations were computed to examine the relationships among the variables. T tests and Pearson Product-Moment Test for Correlation were used to test for significant differences between individual and family variables, perceived mother's warmth, and academic achievement. T tests were used to determine if there were significant relationships between the categorical data variables used in the study: gender, age, SES, family composition, stability/mobility, help with homework, MEAP reading and PARQ scores. The Pearson product-moment

correlation test was used to explore any possible significant relationship between MEAP reading and PARQ scores. A multinominal regression model was used to determine main effects of all variables.

A summary of the research question that guided the study, hypothesis to be tested, and the planned statistical analysis is as follows:

1. Do MEAP reading achievement scores vary as a function of individual factors?

1a. Do MEAP reading achievement scores vary as a function of gender?

Hypothesis: MEAP reading achievement will vary as a function of gender.

Data analysis of questions 1., 1a. and hypothesis: t-tests

2. Do PARQ scores vary as a function of individual factors?

2a. Do PARQ scores vary as a function of gender?

Hypothesis: PARQ scores will not vary as a function of gender.

2b. Do PARQ scores vary as a function of age?

Hypothesis: PARQ scores will not vary as a function of age.

Data analysis of questions 2., 2a., 2b., and hypothesis: t-tests

3. Do MEAP reading achievement scores vary as a function of family factors?

3a. Do MEAP reading achievement scores vary as a function of SES?

Hypothesis: MEAP reading achievement will vary as a function of SES

3b. Do MEAP reading achievement scores vary as a function of family composition? (intact/ not intact family)

Hypothesis: MEAP reading achievement will vary as a function of family composition.

3c. Do MEAP reading achievement scores vary as a function of family stability/mobility?

Hypothesis: MEAP reading achievement will vary as a function of family stability / mobility.

3d. Do MEAP reading achievement scores vary as a function of help with homework?

Hypothesis: MEAP reading achievement will vary as a function of help with homework.

Data analysis of questions 3., 3a., 3b., 3c., 3d., and hypothesis: t-tests

4. Do PARQ scores vary as a function of family factors?

4a. Do PARQ scores vary as a function of SES?

Hypothesis: PARQ scores will not vary as a function of SES.

4b. Do PARQ scores vary as a function of family composition (intact/ not intact)?

Hypothesis: PARQ scores will vary as a function of family composition.

4c. Do PARQ scores vary as a function of family stability/mobility?

No hypothesis stated

4d. Do PARQ scores vary as a function of help with homework?

No hypothesis stated

Analysis of questions 4., 4a., 4b., 4c., 4d., and hypothesis: t-tests

5. Is there a relationship between student's perceived warmth of mother (PARQ) and student's MEAP reading achievement?

Hypothesis: There is a positive relationship between MEAP reading achievement and student's perceived warmth of mother (PARQ).

Analysis of question 5. and hypothesis: t-test and Pearson Correlation.

6. Is there a relationship between student's perceived warmth of mother (PARQ), individual factors, family factors, and student's MEAP reading achievement?

Hypothesis: There is a positive relationship between mother's warmth, individual factors, family factors, and student's MEAP reading achievement.

Analysis of question 6. and hypothesis: Multinomial regression.

Variables were ordered to test possible relationships of individual and family factors on both MEAP reading achievement and PARQ scores. Nominal regression was used to test for main effects of all the variables on MEAP reading achievement.

Chapter 4

RESULTS

This chapter focuses on the results of the data analysis. The purpose of the study was to determine if there is a relationship between 4th and 5th grade students perceived warmth of mother and MEAP reading achievement. Independent variables for this study were individual factors, family factors and perceived mother's warmth. The dependent variable for the study was MEAP reading achievement.

The first section of the chapter uses descriptive statistics to describe the sample data. The remainder of the chapter is organized in the same manner as the research questions were proposed.

Data Reduction

Babbie (1991) states that scientific analysis involves the reduction of data from unmanageable details to manageable summaries. Initial review of the data set revealed concerns for the lack of normal distribution in several of the interval level variables. It was determined that data reduction was necessary in order to provide a more normal distribution within several of the variables used in the study.

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The variables affected where: MEAP reading achievement, total PARQ, mobility/stability, and help with homework. In each case the variable frequency was skewed in either a positive or negative direction and did not allow for variance within the variable.

In order to normalize each of the skewed variables the frequencies of each were examined and a natural break in the data was used to create the new parameters used in the data analysis. An explanation of data reduction for each of the variables will explain the new parameters.

MEAP reading achievement was defined originally as the average score for both reading sub-tests of the 4th grade MEAP reading test. A cut score of 300 was originally the determining factor which was based on the same criteria as the State of Michigan Department of Education uses to determine success proficiency (academic achievement). The data set, prior to data reduction, for the MEAP average cut score of 300 only had 3 females (3%) and 7 males (7%) of the data set falling below the cut score for both the informational and story selection of 300. After data reduction the number of females below the adjusted MEAP cut score of 315 was 17 females (42.5%) and 23 males (57.5%).

Total PARQ - the data set prior to data reduction, only had 3 students (3%) who scored below the cut scored of

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150 suggested by Rohner as a measure of mother's warmth. After data reduction the sample had 44 students (44%) scoring below the new cut score of 200 for total PARQ.

Mobility/Stability - the data set prior to data reduction, indicated there were 8 students (8%) who had been in the school where he/she took the 4th grade MEAP test only 1 year or less prior to taking the test. There were 5 students (5%) who indicated they had been a student at the school where they took the 4th grade MEAP test for 2 years or less. Twenty-one students (21%) had been students at the school they took the 4th grade MEAP test for 3 years or less and 60 students (60%) indicated they had been students at the school they took the 4th grade MEAP test since they started as a kindergartner in the same school. After data reduction, 34 students (34%) were in the group who had been in the school they took the 4th grade MEAP test for 3 years or less prior to taking the MEAP test. Sixty (60) students (60%) had been students in the same building they took the 4th grade MEAP test for three years or more since they took their 4th grade MEAP test.

Help with Homework - Prior to data reduction, there were no students who indicated they never receive help from their parent(s) with homework and only 3 students (3%) indicated they received help sometimes. Ninety-one

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students (91%) indicated they either received help with their homework when they asked or often. After data reduction 48 students (48%) indicated they received help with their homework never, sometimes or when they asked. Forty-six students (46%) were in the group which often received help from their parent(s) with their homework.

Descriptive Statistics of data

The sample contained 100 participants (n=100). Within that sample 6 students did not have MEAP reading scores nor a response for the help with homework question. Students who did not take the MEAP test were also the same students who did not answer the homework question. Since the researcher was the only one who knew how the various data were going to be used these 6 students incomplete data entered the data set. There were a limited number of data entries that were missing for MEAP and PARQ scores. There are different numbers of cases within the same data set that range from 91 to 100 used in the data analysis. Due to the fact SPSS will not include the data if there is any missing entries, some of the analysis vary per case.

Individual Factors

Individual variables for the study were student gender and age. The sample was comprised of 54 females (59%) and 44 males (48%) (Table 2.) Their mean age for the sample

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participants is 10.89 years as of the date they completed the PARQ questionnaire. The participants were grouped as older or younger than the mean age of 10.89 years. There were 45 students (48.9%) who were less than 10.89 years at the time of the PARQ data collection and 52 students (53.6%) who were older than the mean at the time of the data collection (Table 4). Both are categorical data and T-tests were used to determine significant variance for boys, girls and age of the participants.

Family Factors

Family variables for the study were SES (qualify or not qualified for free or reduced lunch), family composition (intact and not intact families), family mobility/stability (number of years the student attended the school prior to taking the 4th grade MEAP test, 1= more than 3 years, 0= less than 3 years) and help with homework (0=sometime, when I ask or never, 1=often). T-tests were used to determine significant differences between the proportional means of the number of cases between the dependent and independent variables.

The SES variable used the Federal guidelines for qualification of free and reduced school lunches. Participants were coded either 0 if they qualified or 1 if they did not qualify. There were 19 participants (20.8%)

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who did qualify and 72 participants (79.1%) who did not qualify under the Federal guidelines (Table 5). T-tests were used to determine significant differences between the proportionate means of the numbers of students who qualified and didn't qualify for free and reduced and the 4th grade reading MEAP cut score of 315.

Family composition was determined by whether or not the student was living in a family that was intact (two biological parents still in the home) or not intact (divorced, single parent, blended or foster). There were 25 students (27.5%) who were living in not intact families and 66 student (72.5%) living with intact families (Table 7). T-tests were used to determine significant differences between the proportionate means of the group of students living in intact families and scoring above the 4th grade MEAP reading cut score of 315 as compared to group living in not intact families and scoring above the MEAP 315 cut score.

Family stability/mobility was a variable that took into account how many years the student had been a student at the school where they took the 4th grade MEAP test. Thirty-three students (36.3%) (Table 9). were students who had been in the school where they took the 4th grade MEAP test 3 years of less. Fifty-eight students (63.7%) (Table

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9.) of the students had been in the school where they took the 4th grade MEAP test since they began as kindergartners. T-tests were used to determine significant differences between the proportionate means the number of students in the group scoring above 315 on the MEAP and being a student in the school for 3 years or more before taking the MEAP as compared to those who had been students in the same school for less than 3 years and scored above the 315 MEAP cut score.

Help with homework gathered student's perception of how often their parent(s) helped them with their homework. Their responses ranged from never to often. After data reduction there were 48 students (52.7%) who reported they were helped never, sometimes or when they asked for help. 43 students (47.3%) indicated they were helped often (Table 11.) T-tests were used to determine significant differences between the proportionate means between the two groups who indicated different amounts of help with homework and also scored above the 4th grade MEAP reading cut score of 315.

Dependent Variables

The 4th grade MEAP reading test was used as a dependent variable in the study. The variable was used to measure academic achievement as determined by the average

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of raw scores from both sub-tests, informational and story selection, of the 4th Grade MEAP test. The Michigan Department of Education has set a raw score of 300 or better, for both sub-tests, to establish whether or not the student demonstrated proficiency in reading at the 4th grade level. The mean average score for the sample was 319 for the 94 students who were part of the study sample. Prior to data reduction only 10 students scored below the 300 average cut score. After data reduction 40 students (40%) scored below the new cut score of 315 and 51 students (51%) scored above the new cut score on the 4th grade MEAP reading test (Table 11.)

Total PARQ scores were used to measure mother's warmth. Rohner(1991) suggests using all four of the PARQ sub scales (warmth/affection, aggression/hostility, neglect/indifference, and rejection) since the perception of the child's warmth is a combination of all those sub scales. Rohner(1991) reports that a total score of 150 or less reflects the child's perception of feeling more warmth than those whose total PARQ score is 150 or greater. The distribution of total PARQ scores ranged from 138 to 233. The sample mean score for total PARQ was 201. After data reduction, where the total PARQ score for mother's warmth was changed from 150 to 200, there were 52 students (56%)

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whose total PARQ was less than 200 (more warmth) and 40 students (43%) whose total PARQ scores were higher than 200 (less warmth) (Table 12).

Testing for Proportional Differences

When data do not have to be normalized t-tests measure significance between mean differences. In other words, do the mean scores for the two variables vary significantly? In this study data reduction was necessary. The t-tests used in the data analysis are measuring proportional differences for the number of participants in each of the variable groups. Proportional differences are a comparison of the percentage of cases in each of the variables. Cross tabulations are a reflection of the mean percentage of participants differences in each of the nominal data categories as opposed to the mean differences of the raw scores for the variable.

Table 2: Demographic Characteristics of Male and Female MEAP Reading Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

			MEAP average 315 >		Total	Chi-square
			0.00	1.00		
Gender	f	Count	28	26	54	0.122
		% within Gender	36.2	63.8	100	
		% within MEAP cut	42.5	58.8	51.6	
	m	Count	23	21	44	
		% within Gender	52.3	47.7	100	
		% within MEAP cut	57.5	41.2	48.4	
Total	Count		40	51	91	
	% within Gender		44	56	100	
	% within MEAP cut		100	100	100	

Table 3: Demographic Characteristics of Male and Female PARQ Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

			PARQ 200 cut		Total	Chi-square
			0.00	1.00		
Gender	f	Count	28	26	54	0.537
		% within Gender	51.9	48.1	100	
		% within PARQ cut	52.8	59.1	55.7	
	m	Count	25	18	43	
		% within Gender	58.1	41.9	100	
		% within PARQ cut	47.2	40.9	44.3	
Total	Count		53	44	97	
	% within Gender		54.6	45.4	100	
	% within PARQ cut		100	100	100	

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Table 4: Demographic Characteristics of Age and PARQ Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

		PARQ 200 cut		Total	Chi-square
		0.00	1.00		
less than 10.89 of age	Count	23	22	45	0.516
	% within age	51.1	48.9	100	
	% within PARQ cut	43.4	50	53.6	
greater than 10.9	Count	30	22	52	
	% within age	57.7	42.3	100	
	% within PARQ cut	56.6	50	53.6	
Total	Count	53	44	97	
	% within age	54.6	45.4	100	
	% within PARQ cut	100	100	100	

Table 5: Demographic Characteristics of Socio-economic Status and MEAP Reading Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

		MEAP Average cut > 315		Total	Chi-square
		0.00	1.00		
SES	0 Count	11	8	19	0.169
	% within SES	57.9	42.1	100	
	% within MEAP cut	27.5	15.7	20.9	
	1 Count	29	43	72	
	% within SES	40.3	59.7	100	
	% within MEAP cut	72.5	84.3	79.1	
Total	Count	40	51	91	
	% within SES	44	56	100	
	% within MEAP cut	100	100	100	

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Table 6: Demographic Characteristics of Socio-economic Status and PARQ Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

		PARQ 200 cut		Total	Chi-square
		0.00	1.00		
SES	0	Count	8	11	0.221
		% within SES	42.1	57.9	
		% within PARQ	15.1	25	
	1	Count	45	33	
		% within SES	57.7	42.3	
		% within PARQ	84.9	75	
Total		Count	53	44	
		% within SES	54.6	45.4	
		% within PARQ	100	100	

Table 7: Demographic Characteristics of Family Composition and MEAP Reading Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

			MEAP Average Cut 315		Total	Chi-square
			0.00	1.00		
Family Composition	Not	Count	11	14	25	0.996
	Intact	% within Family group	44	56	100	
		% within MEAP cut	27.5	27.5	27.5	
	Intact	Count	29	37	66	
		% within Family group	43.9	56.1	100	
		% within MEAP cut	72.5	72.5	72.5	
Total		Count	40	51	91	
		% within Family group	44	56	100	
		% within MEAP cut	100	100	100	

Table 8: Demographic Characteristics of Family Composition and PARQ Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

			PARQ cut 200		Total	Chi-square
			0.00	1.00		
Family composition	Not	Count	17	9	26	0.198
	Intact	% within family group	65.4	34.6	100	
		% within PARQ cut	32.1	20.5	26.8	
	Intact	Count	36	35	71	
		% within family group	50.7	49.3	100	
		% within PARQ cut	67.9	79.5	73.2	
Total	Count		53	44	97	
	% within family group		54.6	45.4	100	
	% within PARQ cut		100	100	100	

Table 9: Demographic Characteristics of Mobility/Stability and MEAP Reading Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

			MEAP Average Cut >315		Total	Chi-square
			0.00	1.00		
Mobility Stability	1	Count	13	20	33	0.508
		% within Mobility group	39.4	60.6	100	
		% within MEAP cut	32.5	39.2	100	
	2	Count	27	31	58	
		% within Mobility group	46.6	53.4	100	
		% within MEAP cut	67.5	60.8	63.7	
Total	Count		40	51	91	
	% within Mobility group		44	56	100	
	% within MEAP cut		100	100	100	

Table 10: Demographic Characteristics of Mobility/Stability and PARQ Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

		PARQ cut 200		Total	Chi-square
		0.00	1.00		
Mobility Stability	1 Count	22	17	39	0.774
	% within Mobility group	56.4	43.6	100	
	% within PARQ cut	41.5	38.6	40.2	
	Count	31	27	58	
	% within Mobility group	53.4	46.6	100	
	% within PARQ cut	58.5	61.4	59.8	
Total	2 Count	53	44	97	
	% within Mobility group	54.6	45.4	100	
	% within PARQ cut	100	100	100	

Table 11: Demographic Characteristics of Help with Homework and MEAP Reading Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

		MEAP Average cut >315		Total	Chi-square
		0.00	1.00		
Help with Homework-never sometimes, when ask often	1 Count	30	18	48	0.000
	% within help group	62.5	37.5	100	
	% within MEAP cut	75	35.3	52.7	
	2 Count	10	33	43	
	% within help group	23.3	76.7	100	
	% within MEAP cut	25	64.7	47.3	
Total	Count	40	51	91	
	% within help group	44	56	100	
	% within MEAP cut	100	100	100	

Table 12: Demographic Characteristics of Help with Homework and PARQ Scores (Frequencies, Percentages and Chi-square Values of Categorical Variables)

		PARQ cut <200		Total	Chi-square
		0.00	1.00		
Help with Homework-never sometimes, when ask	1 Count	25	21	48	0.674
	%within help group	54.3	45.7	100	
	% within PARQ cut	48.1	52.5	50	
	2 Count	27	19	46	
often	%within help group	58.7	41.3	100	
	% within PARQ cut	51.9	47.5	50	
Total	Count	52	40	92	
	%within help group	56.5	43.5	100	
	% within PARQ cut	100	100	100	

Research Questions and Hypothesis

Due to data reduction that was necessary to normalize the skewed data for several variables, the t-tests are testing for significance between proportions of the newly created variable categories .

The first question of the study was concerned with the individual characteristic of gender.

1a. Do MEAP reading achievement scores vary as a function of gender?

The MEAP reading achievement cut score was 315 or greater. Twenty-six females (26) and twenty-one (21) males scored above the MEAP reading cut score of 315 or greater (Table 2). There were twenty-eight (28) and twenty-three (23) males who scored below the cut score (Table 2). The mean score for for the proportionate number of males in the group who scored above the MEAP reading test cut score of 315 was .477 (Table 13.) The mean score for for the proportionate number of females in the group who scored above the MEAP reading test cut score of 315 was .6383 (Table 13). Levene's test for equality of variance was used which resulted in an $F=3.25$ at the .073 significance level and equal variance of the means was assumed (Table 13). Further consideration for significance of mean differences for gender, when equal

variance was assumed resulted in $t = -1.550$ at .125 level of significance (Table 13). Even though the proportionate number of females in the group scoring above 315 was higher than that of the males, there was not a significant difference for gender and academic achievement.

Table 13: T-test and Crosstabulation for Gender and MEAP Reading Achievement (n, Proportional Mean, F and t score)

Group statistics

	Gender	n	Mean	Std. Deviation
MEAP average cut>315	m	44	0.4773	0.5063
	f	47	0.6383	0.4857

Levene's Test for Equality of Variances

	F	Sig.
MEAP average cut>315	3.285	0.073

t-test for Equality of Means

		t	df	Sig. (2-tailed)
MEAP average cut>315	Equal Variances assumed	-1.550	89	0.125
	Equal Variances not assumed			

Cross Tabulation

Gender	MEAP Average cut		Total
	<314	>315	
males	23	21	44
proportionate percentage		0.477	
females	17	30	47
proportionate percentage		0.638	
			91

The next set of research questions dealt with how individual factors of gender and age affected PARQ scores.

2a. Do PARQ scores vary as a function of gender?

The PARQ cut score was 200 or less. The results indicated a total PARQ score mean for females was 200 and for males were 203. There were twenty-eight (28) females who scored below the PARQ cut score of 200 and twenty-five (25) boys (Table 3). There were twenty-six females who scored above the PARQ cut and eighteen boys(18) (Table 3). The mean difference for the proportionate group of males who scored 200 or less on the PARQ was .4186 (Table 14). The mean difference for the group of females who scored 200 or less was .4815 (Table 14). Levene's Test for the Equality of Variance indicated an $F = 1.214$ at .273 level of significance (Table 14). Equal variance of the means was assumed. A t-test for Equality of Means reported total PARQ score $t = -.613$ at a .542 level of significance (2-tailed) (Table 14). Females averaged a lower total PARQ score (200) than males (203) which indicates they reported more mother warmth than boys. The proportionate number of females scoring a lower PARQ than boys was not significant which supported the hypothesis.

**Table 14; T-test and Crosstabulations for Gender and PARQ
(n, Proportional Mean, F and t score)**

Group statistics

	Gender	n	Mean	Std. Deviation
PARQ cut <200	m	43	0.4186	7.612
	f	54	0.4815	6.863

Levene's Test for Equality of Variances

	F	Sig.
PARQ cut <200	1.214	0.273

t-test for Equality of Means

		t	df	Sig. (2-tailed)
PARQ cut <200	Equal Variances assumed	-0.613	95	-6.280
	Equal Variances not assumed			

Cross Tabulation

Gender	Total PARQ		Total
	>200	<200	
males	25	18 0.4186	43
females	28	26 0.4815	54

91

2b. Do PARQ scores vary as a function of age?

The mean age for the students was 10.89 years. There were twenty-two (22) students who were 10.89 years and younger and scored below the PARQ cut score of 200 (Table 4). There were also twenty-two (22) students who were 10.90 years and older and scored below the PARQ 200 cut score (Table 4). The mean average for the percentage of students who scored less than 200 on the PARQ and were less than 10.89 years was .4889. The mean average for the percentage of students who scored less than 200 on the PARQ and were 10.90 and older was .4231 (Table 15). Levene's Test for the Equality of Variance indicated an $F = 1.006$ at .318 level of significance (Table 15). Equal variance of the means was assumed. A t-test for Equality of Means reported total PARQ score $t = -.644$ at a .521 level of significance (2-tailed) (Table 15).

The number of younger students (22) who scored below the PARQ cut score of 200 was the same as the number of older students (22). Comparing proportionate means of the two groups did not result in a significant difference. The hypothesis for age not being a factor for PARQ scores was supported.

Table 15: T-test and Crosstabulations for Age and PARQ (n, Proportional Mean, F and t score)

Group statistics

		n	Mean	Std. Deviation
PARQ cut <200	<10.89 years	45	0.4889	0.5055
	>10.90 years	52	0.4231	0.4989

Levene's Test for Equality of Variances

	F	Sig.
PARQ cut <200	1.006	0.318

t-test for Equality of Means

		t	df	Sig. (2-tailed)
PARQ cut <200	Equal Variances assumed	0.644	95	0.521
	Equal Variances not assumed			

Cross Tabulation

	Total PARQ		Total
	>200	<200	
less than 10.89 years	23	22	45
proportionate percentage		0.488	
greater than 10.90 years	30	22	52
proportionate percentage			
			97

The next section of results pertain to the family factors of SES, intact and not intact families, stability/mobility and help with homework, that the study considered. Research question 3a. considered MEAP reading achievement and SES.

3a. Do MEAP Reading achievement scores vary as a function of SES?

The cut score for MEAP reading achievement was >315. There were eight (8) students who qualified for free or reduced lunch and scored above the MEAP cut score (Table 5). There were forty-three (43) students who scored above the MEAP cut score who did not qualify for free or reduced lunch (Table 5). The mean average for the proportion of students who scored an average of 315 or greater on the reading sub-tests of the 4th grade MEAP reading test was .4211 (Table 16). The mean average for the proportion of students who scored an average of 315 or greater on the reading sub-tests of the 4th grade MEAP reading test and did not qualify for free or reduced lunch was .5972 (Table 16). Levene's Test for the Equality of Variance reported $F=.072$ at a .789 level of significance (Table 16). Equal variance was assumed which resulted in a $t=-1.375$ at the .172 level of significance (2-tailed) (Table 16). The number of students who qualified for free or reduced lunch

and scored 315 or higher on the 4th grade MEAP reading test was 8. Those students who did not qualify for free or reduced lunch and scored 315 or higher on their MEAP reading test numbered 43. Even though it seems to be a significant difference, comparing proportionate means did not support the hypothesis regarding SES being a factor of reading achievement.

Table 16: T-test and Crosstabulations for SES and MEAP Reading Achievement (n, Proportional Mean, F and t score)

Group statistics

	SES	n	Mean	Std. Deviation
MEAP average cut>315	0.00	19	0.421	0.5073
	1.00	72	0.5972	0.4939

Levene's Test for Equality of Variances

	F	Sig.
MEAP average cut>315	0.072	0.789

t-test for Equality of Means

		t	df	Sig. (2-tailed)
MEAP average cut>315	Equal Variances assumed	-1.375	89	0.172
	Equal Variances not assumed			

Cross Tabulation

	MEAP cut		Total
	<314	>315	
qualify for free or reduced	11	8	19
proportionate percentages		0.4211	
not qualified for free or reduced	29	43	72
proportionate percentages		0.5972	

91

Research questions 3b. considered family composition as a factor of MEAP reading achievement.

3b. Do MEAP reading achievement scores vary as a function of family composition?

There were fourteen students (14) who scored above the MEAP cut score of 315 and lived in not intact families (Table 7). There were thirty-seven students (37) who scored above the MEAP cut score of 315 and lived with intact families (Table 7). The mean score for the proportion of students who scored an average of 315 or greater on the reading sub-tests of the 4th grade MEAP reading test and were from not intact families was .5600 (Table 17). The mean score for the proportion of students who scored an average of 315 or greater on the reading sub-tests of the 4th grade MEAP reading test and were from intact families was .5606 (Table 17). Levene's Test for Equality of Variance resulted in an $F=.000$ at the .992 level of significance (Table 17). Equal variances were assumed in the t test of equality of means. $t=-.005$ at the .996 significance level (2-tailed) (Table 17). There were 14 students who were from not intact families and scored 315 or higher on the MEAP reading tests. Thirty-seven (37) students were from intact families and scored an average of 315 or higher on their MEAP reading tests. Proportionately

each group represents 56% of total number of students in each category. There was not a significant relationship between family composition and MEAP reading achievement scores.

Table 17: T-test for and Crosstabulations Family Composition and MEAP Reading Achievement (n, Proportional Mean, F and t score)

Group statistics

	Family Composition	n	Mean	Std. Deviation
MEAP average cut>315	not intact	25	0.56	0.5066
	intact	66	0.5606	0.5001

Levene's Test for Equality of Variances

	F	Sig.
MEAP average cut>315	0	0.992

t-test for Equality of Means

		t	df	Sig. (2-tailed)
MEAP average cut>315	Equal Variances assumed	-0.005	89	0.996
	Equal Variances not assumed			

Cross Tabulation

Family Composition	MEAP cut		Total
	<314	>315	
not intact	11	14	25
proportionate percentage		0.56	
Intact	29	37	66
proportionate percentage		0.5606	

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Research question 3c. considered family stability/mobility as a factor of MEAP reading achievement.

3c. Do MEAP reading achievement scores vary as a function of family stability/mobility?

There were twenty (20) students who scored above the MEAP reading cut score of 315 who had been a student at the school where they took their 4th grade MEAP test for three (3) years or less (Table 9). There were and thirty-one (31) students who scored above the 315 MEAP reading cut score and had been students in the school where they took their 4th grade MEAP test for four (4) years or more (Table 9). The mean score for the proportion of students who scored an average of 315 or greater on the reading subtests of the 4th grade MEAP reading test and had been in the school where they took their 4th grade MEAP 3 years or less was .6061 (Table 18). The mean score for the proportion of students who scored an average of 315 or greater on the MEAP reading tests and had been students in the school where they took their 4th grade MEAP Reading test for more than four (4) years or more was .5345 (Table 18). Levene's Test for Equality of Variance resulted in an $F = 1.791$ at the .184 level of significance (Table 18). Equal variances were assumed in the t test of equality of means. $t = -.656$ at the .514 significance level (2-tailed)

(Table 18). Family mobility/stability was not a significant factor of MEAP reading achievement when proportionate means were compared. The hypothesis for family mobility/stability was not supported.

Table 18: T-test and Crosstabulations for Family Stability/Mobility and MEAP Reading Achievement (n, Proportional Mean, F and t score)

Group statistics

	Mobility	n	Mean	Std. Deviation
MEAP average cut>315	1.00	33	0.6061	0.496
	2.00	58	0.5345	0.5032

Levene's Test for Equality of Variances

	F	Sig.
MEAP average cut>315	1.791	0.184

t-test for Equality of Means

		t	df	Sig. (2-tailed)
MEAP average cut>315	Equal Variances assumed	0.656	89	0.514
	Equal Variances not assumed			

Cross Tabulation

Mobility/stability	MEAP cut		Total
	<314	>315	
three years or less	13	20	33
proportionate percentage		0.6061	
four or more years	27	31	58
proportionate percentage		0.5345	

91

Research question 3d. concerned itself with whether or not help with homework was a factor for MEAP reading achievement.

3d. Do MEAP reading achievement scores vary as a function of how often children get help with homework?

There were eighteen students (18) who scored above the MEAP reading cut average of 315 and indicated they were never, sometimes or when they asked helped with homework (Table 11). There were thirty-three (33) students who scored above the MEAP reading cut average of 315 and indicated they were helped with their homework often (Table 11). The mean score for the proportion of students who scored an average of 315 or greater on the reading sub-tests of the 4th grade MEAP reading test and indicated they were helped with their homework never, sometimes or when they asked was .375 (Table 19). The mean score for the proportion of students who scored an average of 315 or greater on the reading sub-tests of the 4th grade MEAP reading test and indicated they were helped often with their homework was .7674 (Table 19). Levene's Test for Equality of Variance resulted in an $F = 8.704$ at the .004 level of significance (Table 19). Equal variances were not assumed in the t-test of equality of means. $t = -4.083$ at the .000 significance level (2-tailed) (Table 19). There

was a significant difference between how often students were helped with homework and MEAP reading achievement. This significant difference did support the hypothesis for help with homework having a significant effect on MEAP reading achievement.

Table 19: T-test and Crosstabulations for Help with Homework and MEAP Reading Achievement (n, Proportional Mean, F and t score)

Group statistics

	Help homework	n	Mean	Std. Deviation
MEAP average cut >315	1.00	48	0.375	0.4892
	2.00	43	0.7674	0.4275

Levene's Test for Equality of Variances

	F	Sig.
MEAP average cut >315	8.704	0.004

t-test for Equality of Means

		t	df	Sig. (2-tailed)
	Equal Variances assumed			
MEAP average cut >315	Equal Variances not assumed	-4.083	89.95	0.000

Cross Tabulation

Help with homework	MEAP cut		Total
	<314	>315	
never, sometimes, when asked	30	18	48
proportionate percentages		0.375	
often	10	33	43
proportionate percentages		0.7674	

91

The next set of research questions considered family factors in regard to PARQ scores. Research question 4a. considered PARQ and SES.

4a. Do PARQ scores vary as function of SES?

There were eleven (11) students who scored below the PARQ cut score of 200 and qualified for free or reduced lunch (Table 6). There were thirty-three (33) students who scored below the PARQ cut score of 200 and did not qualify for free or reduced lunch (Table 6). The mean difference for the group of students who scored less than 200 on the PARQ and qualified for free or reduced lunch was .5789 (Table 20). The mean difference for the group of students who scored less than 200 on the PARQ and did not qualify for free or reduced lunch was .4231 (Table 20). Levene's Test for the Equality of Variance indicated an $F = .001$ at .975 level of significance (Table 20). Equal variance of the means was assumed. A t-test for Equality of Means reported total PARQ score $t = -.1.221$ at a .225 level of significance (2-tailed) (Table 20). SES did not have a significant effect on PARQ scores. Three times as many students who did not qualify for free or reduced lunch scored a lower PARQ score than those in the group who did qualify for free or reduced lunch and scored a PARQ score of less than 200. Comparison of proportionate means for

the two groups was not significant. There was support for the hypothesis that SES would not have a significant effect on PARQ scores.

Table 20: T-test and Crosstabulations for PARQ and SES (n, Proportional Mean, F and t score)

Group statistics

	SES	n	Mean	Std. Deviation
PARQ cut <200	0.00	19	0.5789	0.5073
	1.00	78	0.4972	5.63

Levene's Test for Equality of Variances

	F	Sig.
PARQ cut <200	0.001	0.975

t-test for Equality of Means

		t	df	Sig. (2-tailed)
PARQ cut <200	Equal Variances assumed	1.220	95	0.225
	Equal Variances not assumed			

Cross Tabulation

SES	PARQ cut		Total
	>200	<200	
Qualified for free or reduced proportionate percentage	8	11 0.5789	19
Not qualified for free or reduced proportionate percentage	45	33 0.4231	78

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Research question 4b. considered whether family composition was a factor of PARQ scores.

4b. Do PARQ scores vary as a function of family composition?

There were nine (9) students who scored below the PARQ cut score of 200 and were living in non intact families (Table 8). There were thirty-five (35) students who scored below the PARQ cut score of 200 and were living with intact families (Table 8). The mean difference for the group of students who scored less than 200 on the PARQ and were from not intact families was .3462 (Table 21). The mean difference for the group of students who scored less than 200 on the PARQ and were from intact families was .4930 (Table 21). Levene's Test for the Equality of Variance indicated an $F = 7.196$ at .009 level of significance (Table 21). Equal variance of the means was not assumed. A t-test for Equality of Means reported total PARQ score $t = -1.307$ at a .198 level of significance (2-tailed) (Table 21). Nine (9) students were from not intact families and had a PARQ score lower than 200. Thirty-five (35) students were from intact families and had a PARQ score lower than 200. Four times as many students from intact families scored lower than a 200 than those students from not intact families. Levene's Test for Equality of Variances did

report a significant level (.009) for the two groups mean difference Table 21). Equal variance for the variance of those means could not be assumed. Further analysis resulted in $t=.198$ which did not support the hypothesis that family composition would effect PARQ scores.

Table 21: T-test and Crosstabulations for PARQ and Family Composition (n, Proportional Mean, F and t score)

Group statistics

	Family composition	n	Mean	Std. Deviation
PARQ cut <200	not intact	26	0.3462	0.4852
	intact	71	0.493	0.5035

Levene's Test for Equality of Variances

	F	Sig.
PARQ cut <200	7.196	0.009

t-test for Equality of Means

		t	df	Sig. (2-tailed)
	Equal Variances assumed			
PARQ cut <200	Equal Variances not assumed	-1.307	46.05	-0.147

Cross Tabulation

Family composition	PARQ cut		Total
	>200	<200	
not intact	17	9	26
proportionate percentage		0.3462	
intact	36	35	71
proportionate percentage		0.493	

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Research question 4c. considered family stability/mobility as a factor for PARQ scores.

4c. Do PARQ scores vary as a function of family stability/mobility?

There were seventeen (17) students who scored below the PARQ cut score of 200 and had been students where they took their 4th grade MEAP reading test for three (3) years or less (Table 10). There were twenty-seven students (27) who scored below the PARQ cut score of 200 and had been students in the school where they took their 4th grade MEAP reading test for four (4) years or more (Table 10). The mean difference for the group of students who scored less than 200 on the PARQ and had been in the school where they took their 4th grade MEAP for three (3) years or less was .4359 (Table 22). The mean difference for the group of students who scored less than 200 on the PARQ and had been students in the school where they took their 4th grade MEAP for four (4) years or more was .4655 (Table 22). Levene's Test for the Equality of Variance indicated an $F=.334$ at .565 level of significance (Table 22). Equal variance of the means was assumed. A t-test for Equality of Means reported total PARQ score $t= -.284$ at a .777 level of significance (2-tailed) (Table 22). The amount of time students attended the same school and mother's warmth were

not significant. Proportionately the same number of students scored lower than 200 on PARQ regardless how long they had attended the same school. No hypothesis was stated for this question.

Table 22: T-test and Crosstabulations for PARQ and Family Stability/Mobility (n, Proportional Mean, F and t score)

Group statistics

	Mobility	n	Mean	Std. Deviation
PARQ cut <200	1.00	39	0.4359	0.5024
	2.00	58	0.4655	0.5032

Levene's Test for Equality of Variances

	F	Sig.
PARQ cut <200	0.334	0.565

t-test for Equality of Means

		t	df	Sig. (2-tailed)
PARQ cut <200	Equal Variances assumed	-0.284	95	0.777
	Equal Variances not assumed			

Cross Tabulation

Stability/Mobility	PARQ cut		Total
	>200	<200	
3 years or less proportionate percentage	22 0.4359	17 0.4359	39
4 years or more proportionate percentage	31 0.4655	27 0.4655	58

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Research question 4d. considered help with homework as a factor for PARQ scores.

4d. Do PARQ scores vary as a function of "help with homework"?

There were twenty-one (21) students who scored below the PARQ cut score of 200 and reported they were helped with their homework never, sometimes, or when they asked (Table 12). There were nineteen (19) students who scored below the PARQ cut score of 200 and indicated they were helped with their homework often (Table 12). The mean difference for the group of students who scored less than 200 on the PARQ and indicated they were never, sometimes or when they asked, helped with homework was .4565 (Table 23). The mean difference for the group of students who scored less than 200 on the PARQ and indicated they were helped often with their homework was .4130 (Table 23). Levene's Test for the Equality of Variance indicated an $F=.8.704$ at .004 level of significance (Table 23). Equal variance of the means was not assumed. A t-test for Equality of Means reported total PARQ score $t= -.416$ at a .678 level of significance (2-tailed) (Table 23). Help with homework did not have the same significant relationship on mother's warmth as it did with MEAP reading achievement. No hypothesis was stated for this question.

Table 23: T-test and Crosstabulations for PARQ and Help with Homework (n, Proportional Mean, F and t score)

Group statistics

	Homework	n	Mean	Std. Deviation
PARQ cut <200	1.00	46	0.4565	0.5036
	2.00	46	0.413	0.4978

Levene's Test for Equality of Variances

	F	Sig.
PARQ cut <200	0.629	0.43

t-test for Equality of Means

		t	df	Sig. (2-tailed)
PARQ cut <200	Equal Variances assumed	0.416	90	0.678
	Equal Variances not assumed			

Cross Tabulation

	PARQ cut		Total
	>200	<200	
never, sometime, when asked proportionate percentage	25	21 0.4565	46
often proportionate percentage	27	19 0.413	46

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Research question 5. considered whether there was any relationship between the student's perceived warmth of their mother (PARQ) and their 4th grade MEAP reading achievement. In order to consider the perceived warmth of mother's the researcher considered both the total PARQ score (less than 200) as well as the average for the two sub-tests (315 or greater) for the 4th grade MEAP reading test.

5. Is there a relationship between student's perceived warmth of mother (PARQ) and student's MEAP reading achievement?

There were twenty-six (26) students who scored below the PARQ cut of 200 and received a MEAP reading score above the cut score of 315 (Table 24). There were twenty-five (25) who scored below the PARQ cut score of 200 and below the 4th grade MEAP reading cut score of 315 (Table 24). The mean difference for the proportion of students in the group that scored 200 or less on the PARQ and had a 315 or greater average on the two MEAP reading sub-tests was .520 (Table 24). The mean difference for the proportion of students in the group who scored 200 or less on the PARQ and had a 314 or lower average on the two MEAP reading sub-tests was .6410 (Table 24). Levene's test for Equality of variances resulted in $F = 3.946$ at a .05 level of

significance (Table 24). When equal variance was not assumed a t-test for Equality of Means resulted in $t = -1.146$ at the .255 level of significance (2-tailed) (Table 24).

Pearson Product-moment correlation test resulted in identical correlations for both the total PARQ score (200 or less) and an average for the two 4th grade MEAP reading sub-tests (315 or greater). PARQ to MEAP was .121 at .257 level of significance and MEAP to PARQ was .121 at .257 level of significance (Table 24). Proportionately there was no significant difference in MEAP Reading achievement between the group of students who reported more mother's warmth than those who reported less mother's warmth. The lack of support for the hypothesis that mother's warmth would have a positive effect on MEAP reading achievement was contrary to the literature.

Table 24: T-test, Crosstabulations and Pearsons Product-Moment Correlations for PARQ and MEAP Reading Achievement (n, Proportional Mean, F and t score)

Group statistics

	PARQ	n	Mean	Std. Deviation
MEAP average cut >315	0.00	50	0.52	0.5047
	1.00	39	0.641	0.486

Levene's Test for Equality of Variances

	F	Sig.
MEAP average cut >315	3.946	0.05

t-test for Equality of Means

		t	df	Sig. (2-tailed)
	Equal Variances assumed			
MEAP average cut >315	Equal Variances not assumed	-1.146	83.17	-0.122

Cross Tabulation

MEAP scores	PARQ cut		Total
	>200	<200	
MEAP cut 315>	24	26	50
proportionate percentage		0.52	
MEAP cut <314	14	25	39
proportionate percentage		0.641	

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Pearson Product Moment

		PARQ cut <200	MEAP cut >315
PARQ cut <200	Pearson's	1.000	0.121
	significance		0.257
	n	97.000	89.000
MEAP average 315>	Pearson's	0.121	1.000
	significance	0.257	
	n	89.000	91.000

Multivariate Analysis

The final analysis was to create a model which considered all the variables interaction with the dependent all the variables to determine main effects.

6. Is there a relationship between student's perceived warmth of mother (PARQ), individual factors, family factors, and student's MEAP reading achievement?

In order to accomplish this a multinominal logistic regression model was used which considered all the independent variables effect on 4th grade MEAP reading achievement (Table 25). This analysis was selected because it allows the researcher to classify subjects based on values of a set of predictor variables. This type of regression is general because the dependent variable is not restricted to two categories. This analysis also confirmed the results of the individual t-tests already reported.

The regression model analysis resulted in a multivariate consideration of all the independent variables effects on the dependent variable. As in the bivariate analysis, "help with homework" was a significant relationship at the .000 level of significance (Table 25). Mother's warmth was also worth mentioning. Perceived mother warmth was significant at the .140 level (Table 25). In comparison to the other individual and family factors,

perceived mother's warmth was a significant finding in this study. An illustration of the significance level and beta value for each independent variable helps to see the strength of the relationship to academic achievement (Figure 4.). This study can report that in a multivariate analysis help with homework did show a significant relationship (.000) with academic achievement and mother's warmth did not show a significant relationship with academic achievement (.146).

It is worthy to note that mother's perceived warmth did have a positive relationship ($B=+.743$) and a significance level much lower than the other independent variables measured in the study (Figure 4).

Table 25: Multinomial Logistic Regression

MEAP cut 315>	B	Standard Error	df	Significance
Intercept	-1.168	0.615	1	0.058
Help with homework = 1.0	1.965	0.549	1	0
Mobility/stability = 1.0	-0.901	0.576	1	0.406
Family composition = 0	-0.14	0.589	1	0.811
SES=0	0.469	0.64	1	0.464
Gender = females	-0.384	0.495	1	0.438
PARQ <200 cut	0.743	0.511	1	0.146
Case Processing Summary				
		n		
	0	40		
MEAP cut average	1	41		
	1	48		
Help with Homework	2	43		
	1	33		
Mobility/Stability	2	58		
	not intact	25		
Family composition	intact	66		
	0	19		
SES	1	72		
	females	47		
Gender	males	44		
	0	50		
PARQ < 200 cut	1	39		

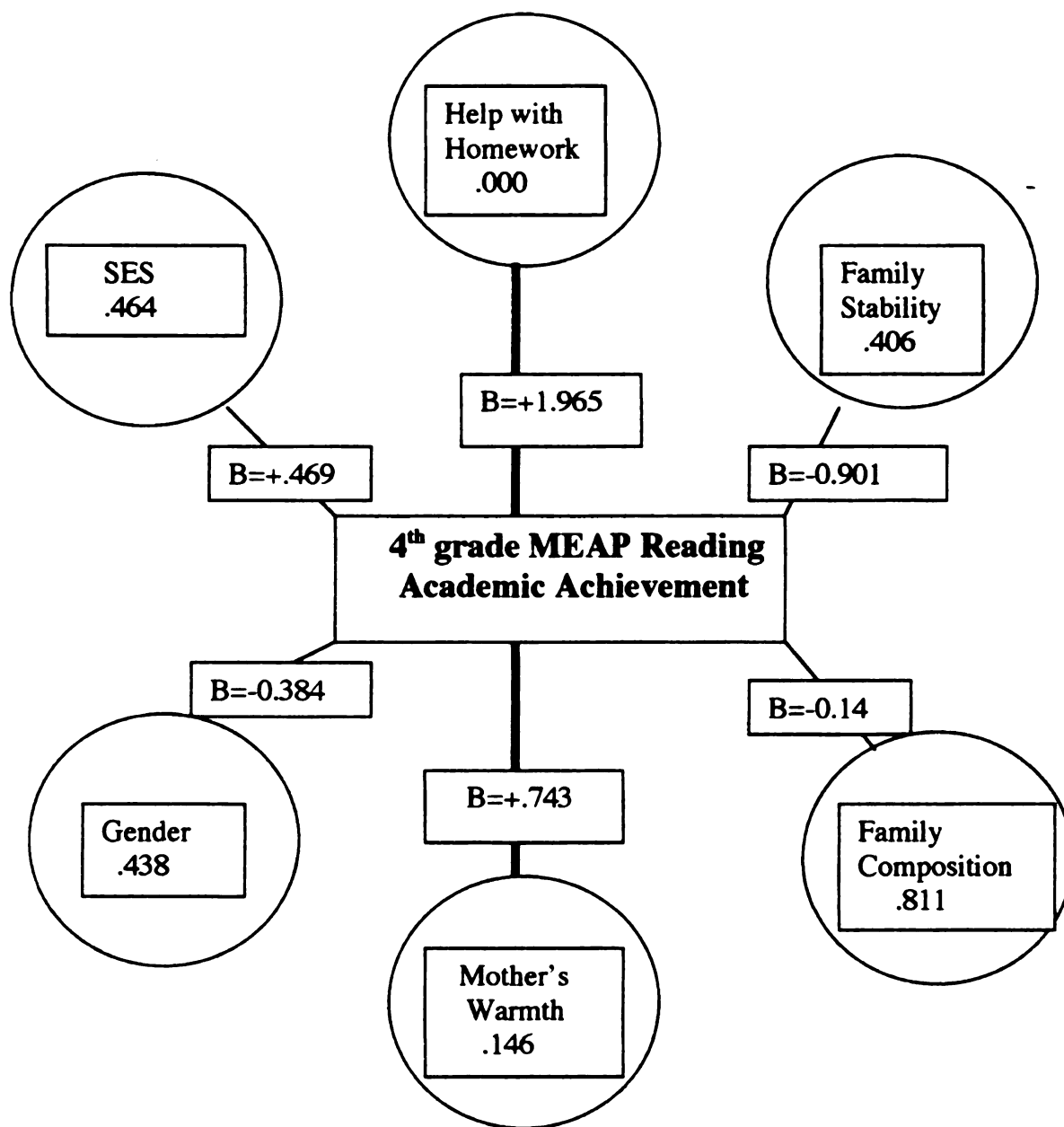


Figure 4.
Beta and significance levels of
independent variables

Chapter 5

DISCUSSION

Parental Acceptance Rejection (PAR) (Rohner, 1986) and Ecological (Bronfenbrenner, 1979, 1993) theories provided the theoretical foundations for a study of mother's warmth and academic achievement. The relationship between perceived mother's warmth and MEAP reading achievement of 100 fourth and fifth grade students were studied. These beliefs were examined in relation to individual and family variables. Gender, age, SES, family composition, stability/mobility, perceived warmth, and help with homework were examined. The Michigan 4th grade MEAP reading test was the measure used to determine academic achievement.

Rohner's (1977) Parental Acceptance Rejection Questionnaire (PARQ) was administered to 94 4th and 5th grade students who had previously completed the 4th grade MEAP reading tests.

Ten hypotheses were investigated by means of eleven research questions. Exploratory analyses were conducted in cases where no hypotheses were stated. Descriptive statistics were used to summarize the variables. Bivariate analyses consisted of cross tabulations, t-tests,

chi-square and Pearson correlations. Individual and family variables were analyzed in relationship to both MEAP and PARQ scores. None of the individual factors were significantly related to academic achievement. The only family variable that did have a significant relationship to academic achievement was "help with homework."

Data reduction was used to normalize the data. The data were skewed in many variables which did not allow the researcher to analyze the data given the data did not meet the basic assumption of normal distribution. After completing data reduction, variables that were expressed as inferential data were changed to categorical data. All independent and dependent variables were expressed as categorical data. In order to consider the main effects of the independent variables on the dependent variable and given the fact that all the variables were now categorical data, a nominal regression model was used for that analysis. Again, "help with homework" was the only variable that had a significant relationship to academic achievement.

Purpose of This Study

The overall purpose of this study was to explore the possible relationship of 4th and 5th graders perceived mother's warmth, and individual and family factors relationship with academic achievement. Other studies in the literature had reported relationships in somewhat similar studies (Starkey, 1980). Specifically, this study was designed to accomplish the following goals:

1. Explore to what degree mother's warmth had an affect on academic achievement.
2. Explore the variance in mother's warmth and the relationship to academic achievement as a function of individual and family factors.
3. Explore the relationship of mother's warmth (PARQ), individual factors, family factors, and MEAP reading scores.

The results of the study are discussed in relation to these purposes. The research questions and hypotheses tested will be summarized. Implications for theory, research, and practice will be considered.

Discussion of Findings

In this study only help with homework was found to be statistically significant at the .05 level of significance. It is of importance to mention that mother's warmth was not significantly related to reading achievement at the .05 level, but was more significant (.14) than the other individual and family factors measured.

The first research question focused on gender and academic achievement. More females (47) scored higher on the 4th grade MEAP reading tests than did males (44). This does support findings from previous studies (Han, 1994; Dulaney and Banks, 1994). The hypothesis was not accepted because there was not a statistically significant difference in the two groups.

Next, both gender and age were examined to determine any possible relationship with mother's warmth. A larger percentage of males (58.1%) reported more mother's warmth than females (51.9%). Similar to this study, previous studies by others did not report significant differences in gender and mother's warmth. Older students (57.7%) reported more mother's warmth than did younger students (51.1%). Again, similar to this study, others have not found significant differences in age and mother's warmth (Macoby

and Martin, 1983; Rohner, 1997). Individual factors of age and gender did not have significant relationships to mother's warmth and the hypotheses were supported. The results from this study support the fact that worldwide gender and age do not have an effect on perceived mother's warmth.

Family factors were examined to determine effects, if any, on academic achievement. Only 19 students, of the 91 cases reported, qualified for free or reduced lunch (SES) for families their size under Federal Guidelines. This was a small number and does not reflect the differences in the individual schools within the district the sample was drawn from. Eight of those who qualified scored above the 4th grade cut score for the 4th grade MEAP reading test. Forty-three students, who did not qualify, scored above the cut score for the 4th grade MEAP reading test. It would appear that those who did not qualify for free or reduced lunch did better than those who did qualify. Proportionate comparisons did result in significant differences and the hypothesis was not supported. This is contrary to the literature (Kruse, 1996) and it can only be assumed that due to the small sample size significance did not result.

Another family variable, family composition, was examined for relationships with academic achievement. Twenty-five students in the sample were living in not intact families as compared to sixty-six students living with intact families. Almost identical percentages of students living in both situations scored above the 4th grade MEAP reading cut score. The literature supported the hypothesis that students from intact families would have higher academic achievement than those living in not intact families (Dawson, 1981), but the hypothesis was not supported for this study.

Disruption to families, due to geographic relocation, has been shown to have a negative effect on academic achievement. In this study stability/mobility was explored.

The researcher's personal knowledge of the school district's degree of transient population was not captured in the data sample. Hence, the study did not support the previous findings (Newman, 1988; Waters, 1996) for family stability/mobility and academic achievement. There were only 33 students who attended the school where they took their 4th grade MEAP test for 3 years or less. There were 60.6% of the students who had attended the same school where they took their 4th grade MEAP reading test for 3

years or less and scored above the cut score for reading proficiency. Students who attended the same school where they took their MEAP test for 3 years or more and scored above the cut score for reading proficiency represented 53.4%. The data analysis did not support the hypothesis for family stability/mobility and academic achievement.

"Help with homework" is a form of parent involvement that the literature strongly supports as having a positive effect on academic achievement (Steinberg, 1990; Epstein, 1987). In this study students who reported they were helped with their homework often and scored above the MEAP reading proficiency cut score represented 76.7%. Those reporting they are never, sometimes or when they asked for help with homework and scored above the MEAP reading proficiency cut score represented 37.5%. Data analysis for both chi-square and t-tests resulted in a .000 significant level for help with homework and academic achievement. This study's findings support the stated hypothesis and supports the increased need for all types of parent involvement in school.

In this study the findings for possible relationships for family variables: SES, mobility/stability and family composition were not significant. "Help with homework" was

a family variable that did have a significant positive effect on academic achievement. Microsystems within the family, in particular, parents helping students with homework, did have a positive relationship with elementary students academic achievement.

Mother's warmth and family factors were also explored in this study. SES and mother's warmth resulted in students who did qualify for free and reduced lunch (42.1%) reporting less mother's warmth than those who did not qualify for free and reduced lunch (57.7%). Previous studies did not show any significance with socio-economic level (SES) and perceived mother's warmth (Rohner, 1975a, Barnes and Farrell, 1992).

Family composition would lend itself to possibly having an effect on perceived mother's warmth. Broken homes, remarriages, and single parent households are all factors that elementary students must contend with in today's society. In this study 26 students represented the group living in not intact families and 71 students lived with intact families. Seventeen students living in not intact families reported more warmth than the other nine students living in the same family composition. Thirty-six students living with intact families reported more warmth

than the other thirty-five students living with intact families. Data analysis comparisons did not show significance between family composition and mother's warmth. The stated hypothesis was not supported.

Two other family variables: stability/mobility and help with homework were explored. Neither reported significance and no hypotheses were stated for either of those family factors. In this study none of the family variables reported significant relationships to mother's warmth.

Starkey (1980) found a relationship between perceived mother's warmth and academic achievement. It was a major focus of this study to replicate Starkey's findings. The group that scored above the 4th grade MEAP reading proficiency cut score and reported the more warmth were 26 students as compared to those (24) who scored above the MEAP reading proficiency cut score and reported less warmth. A t-test of the mean variance between the two groups resulted in $t=-1.148$ at a .255 level of significance. Pearson Product moment test of correlations between the two variables also showed similar results $r=.121$ at a .257 level of significance. The researcher believes that due to the small sample size and limited

measure for academic achievement Starkey's (1890) findings were not replicated in this study. It is worth mentioning that a nominal regression (Table 25) mother's warmth did have a relationship at the .14 level of significance. The stated hypothesis was not supported in this study.

Multivariate Analysis

Up to now, the possible relationships between academic achievement and individual and family factors have been discussed as bivariate possibilities. It was the intent of the researcher to look at the main effects of all the family and individual factors simultaneously. In order to do this a nominal regression model was used. Is there a way to predict students academic achievement from the individual and family variables used in this study? "Help with homework" did have a significant relationship with academic achievement when considered in the multivariate analysis. The support from this study for the influence that help with homework has on academic achievement supports previous work by others. The dynamics of the microsystem that is created during the time students are working with their parent(s) on their homework is an influential component for schools to nurture.

It was hypothesized that MEAP reading achievement would vary as a function of gender. There were no significant differences and the hypothesis was not supported. Of the ninety-one male and female scores analyzed, there were only three (3) females who scored better than males. For those who did not meet the MEAP cut score there was a fewer number of females (17) who fell below the cut score of 314 as compared to twenty-three (23) males. Females did score better on the MEAP reading test. The findings support the need to continue efforts to determine why there are apparent differences between gender and reading achievement.

It was hypothesized that PARQ scores would not vary as a function of individual factors (age, gender). The study supported the previous work of Rohner in that mother's warmth is not influenced by individual characteristics of age or gender (Rohner, 1980). More investigations of perceived mother's warmth are warranted in a continuing effort to measure the effects of mother's influences on their children.

MEAP scores were hypothesized to vary as a function of each of the family factors considered. The findings did not support those hypotheses except in one area. "Help with

homework" was a significant factor in academic achievement. This is a good bit of news to me as an educator and parent. This study provides support for the continuation of such efforts. Providing more knowledge in this area is an important contribution to schools and families. It is the researcher's belief that due to the small sample size for the other family factors there wasn't sufficient data collection to provide a significant variance to support the hypothesis for the three other family hypothesis. There is still reason to consider further work in this area. Others continue to find significance in the influence of family variable. Schools need to address the implications of those studies and they can use the findings to improve academic achievement.

PARQ scores were hypothesized to not vary as a function of either SES or family composition. The study results confirmed both of those hypotheses. It is interesting to note that three times as many students, who did not qualify for free or reduced lunch, perceived more mother's warmth than did those who did qualify for free or reduced lunch. There is reason to be concerned about SES and mother's which supports the need for more study of this important relationship. The data for this study illustrated a very small number of students who were able to

participate actually qualified for free or reduced lunch (19). This limitation may have influenced the findings for significance of the possible relationship. Similar to Rohner's studies, this study did not find SES nor the composition of families to effect perceived mother's warmth. There is reason to believe, regardless of whether a family is intact or not intact, children are still perceiving mother's warmth in similar proportions.

Finally, it was hypothesized that there would be a relationship between perceived mother's warmth and MEAP reading achievement. The previous findings of Rohner (1985), Starkey (1980), and Hahn (1980) were not supported in this study at the .05 level of significance. It is worthy to note that in a multivariant analysis mother's warmth relationship to academic achievement was significant at the .14 level. Other family and individual factors in the same multivariant regression analysis were reported at significantly higher levels of significance (greater than .40). Further analysis did not support the hypothesis. Further investigation into this relationship would be warranted.

In summary, this research extended the findings of previous studies concerned with improving academic

achievement by investigating perceived mother's warmth, individual and family factors. One family variable, "help with homework" reported significance in both bivariate and multivariate data analysis in the study. Since "help with homework" did explain a small portion of the variance in academic achievement, additional research is needed.

Implications

The findings of this study have implications for future research. One general implication is that the design of the study was guided by ecological theory. The measure of mother's warmth, which in this study quantified a relationship rather than just acknowledge it existed, provided insight to measure a child's perceptions. Rohner's PARQ instrument provides researchers the ability to capture the perceptions of children and quantify them for analysis.

The Michigan MEAP test has earned credibility over its' existence to become the measure of academic achievement in Michigan. The credibility it has earned provides parents and community members a way to assess how their school is doing in relationship to other schools within the state. The MEAP test is something that the

public in Michigan understands and reporting academic achievement based on the merits of the MEAP test results is worthy of future consideration.

A limitation reported earlier in the study was the concern about how accurate children's responses would be concerning their assessment of perceived mother's warmth. Future research using the PARQ instrument needs to be sure to take any precautions in order to avoid socially desirable responses. All considerations of privacy need to be ensured in order to gain the confidence of young children in ascertaining their private perceptions of perceived mother's warmth.

To explore future considerations of mother's warmth, individual and family factors and replicate this study, the researcher needs to make sure they avoid intruding on personal feelings of students and their families. In order to accomplish this they need to have access to the staff who knows the children in order to gather some of the student data (i.e., family composition, SES) from personal knowledge.

Implications for Research

The findings of this study have several implications for future research. In future studies the researcher should make every attempt to gain the confidence of the community and explain the purpose and procedure. Avoiding, what might be considered intrusive means by families, to gather data for individual and family variables is critical. In this study the small sample size is believed to be caused from the lack of understanding and trust the parents of 4th and 5th graders had for this study. More emphasis on public and private informational meetings with parents, prior to conducting the research, should help gaining trust and result in larger numbers of parents allowing their child to participate in the future studies.

Implications for Practice

The need to learn more about how to improve academic achievement is a strong desire that both school officials and parents share. An implication of this research is the continued need to foster home-school relationships.

The findings from this study and others reinforce that parent involvement has an important relationship to

academic achievement. Schools need to provide opportunities for parents and children to work together at home. It would not be a recommendation of this researcher to suggest teachers take the results from this study and make sure they are assigning homework frequently. Instead, teachers and parents together should collaborate to determine the best way(s) to foster the parent-child interaction that takes place when children and parents are working together on academic things. Parent involvement can be defined in various ways and increasing those ways will result in improved academic achievement.

Even though this study did not find significance with other family, individual, or perceived mother's warmth variables they should not be forgotten. It could be implied that the district where the data was gathered is doing an effective job addressing individual and family factors that others studies have supported. Due to the small and non-representative sample, the researcher is not convinced the findings of this study are indicative of the school district where the study was conducted nor other Michigan school communities. The literature is strongly in support of the effects selected individual and family factors have on academic achievement. Only considering the issues to improve academic achievement within the confines of schools

is restrictive. Other factors in the lives of elementary students and their families need to be explored. Exploring parent child relationships is important to finding possible ways to improve academic achievement. The intrusive nature of this type of research is easier to avoid than explore. Parents and communities need to be educated about their role as partners in education, and the positive or negative effects that result on the academic achievement of their child, from their taking that responsibility or avoiding it.

Contributions of This Study

The study made theoretical and practical contributions to the body of knowledge related to improving academic achievement. Ecological and Parent Acceptance Rejection theories, together, provided a strong theory base from which to design the study and carry out the investigation. The study provided more knowledge about 4th and 5th graders academic achievement and their perceived mother's warmth.

The findings of this study lend support to aspects of ecological and the warmth dimension of parental acceptance-rejection theories. Differences, in all but one of the

study's independent variables, were not significant. Help with homework as well as the potential differences that the other individual and family variables have need to be studied further. The degree of significance for the variables effects on academic achievement is worthy of further investigation of the possible microsystem dynamics that exist. The study data did not provide explanations for the variances, ecological and parental acceptance rejection theories provide ways to conceptualize and explore them in future studies.

APPENDICES

APPENDIX 1.

PARENT PERMISSION FORM

-

Dear Parent / Guardian,

Over three hundred 4th and 5th grade students in Bullock Creek Schools have an opportunity to take part in a study being carried out by myself, Jim Anderson, in conjunction with Michigan State University. The study will look at the possible relationships between children's perceptions of their mother's parenting behaviors and children's academic achievement as measured by 4th grade reading scores on the MEAP test. The purpose of the study is to identify mother's parenting behaviors that are associated with school achievement. Knowledge gained from this study will benefit continuing efforts between home and school collaborations and provide direction for future programming. When the project is finished results will be available to parents, school officials and others interested in home school relationships.

I would like your child to participate in the study. Your child will be asked to answer a 60 question survey about their perceptions of mother's parenting behaviors.

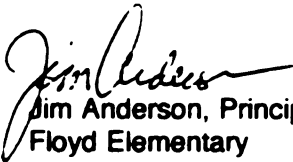
You should know that everything your child reports on the survey will be confidential. No one will have access to this information except me. My interest is in understanding how a sample of 4th and 5th graders perceive their mother's parenting behaviors and not in identifying specific children or their families.

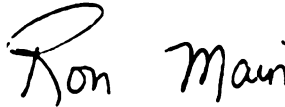
I hope very much that your child will be able to participate in this study by completing the survey. Of course, all of this is voluntary. The survey should take between 25 and 35 minutes to complete. Students will be surveyed before the end of this school year at a time designated by their teacher that is the least disrupting to their academic day. At the conclusion of the survey session, each child's survey will be put into a sealed envelope. In order to maintain confidentiality a number will appear on the survey and not your child's name. Your child will be told that he or she may quit any time they want. They will also be assured that no one, including parents, will have direct access to his / her responses. You should know that this study has been approved by the Bullock Creek Board of Education.

If you will allow your child to participate in this study please sign and return the consent form below to the office.

Thank you for your support and I appreciate your willingness to allow your child's participation.

Sincerely,


Jim Anderson, Principal
Floyd Elementary


Ron Main, Principal
Pine River Elementary


Anthony Falsetta, Principal
Bullock Creek Elementary

Yes, _____ is allowed to participate in this study.
student's name

date

parent signature

Return this form to the school office before Wednesday, May 19th

APPENDIX 2.

SCHOOL DISTRICT APPROVAL LETTER



BULLOCK CREEK SCHOOL DISTRICT

Administrative Offices 1420 S. Badour Rd., Midland, MI 48640

(517) 631-9022 FAX (517) 631-2882

Thomas E. Gilstad, Superintendent

David B. Chapin, Assistant Superintendent

April 12, 1999

UHRIS - Michigan State University
225 Administration Building
East Lansing, MI 48824-1046

To Whom It May Concern:

I am aware of the research project (An Exploratory Study of 4th and 5th Graders Perceptions of Their Mother's Parenting Behaviors in Relationship to Academic Achievement) Jim Anderson would like to conduct with 4th and 5th grade students in our school district. I have discussed the project and implications of conducting this type of research with elementary students.

Mr. Anderson has reassured me that all the necessary measures involving confidentiality and anonymity have been considered. Systems are in place which protect both confidentiality and anonymity of the students whose parents will consent to their child participating.

Bullock Creek Schools support Mr. Anderson's efforts to conduct his research project which has the potential to gain new knowledge in the area of home and school connections.

Sincerely,

Thomas E. Gilstad
Superintendent

jjn

BULLOCK CREEK HIGH SCHOOL
Phone 631-2340

BULLOCK CREEK MIDDLE SCHOOL
Phone 631-9260

BULLOCK CREEK ELEMENTARY SCHOOL
Phone 832-8691

FLOYD ELEMENTARY SCHOOL
Phone 832-2081

PINE RIVER ELEMENTARY SCHOOL
Phone 631-5121

APPENDIX 3.

UCRIHS APPROVAL LETTER

**MICHIGAN STATE
UNIVERSITY**

June 7, 1999

TO: Dr. June Pierce YOUATT
Unit #3, Paolucci Bldg.
Room 233

RE: IRB# 99291 CATEGORY: FULL REVIEW

APPROVAL DATE: June 7, 1999

**TITLE: AN EXPLORATORY STUDY OF 4th AND 5th GRADERS PERCEPTIONS OF
THEIR MOTHER'S PARENTING BEHAVIORS IN RELATIONSHIP TO
ACADEMIC ACHIEVEMENT**

The University Committee on Research Involving Human Subjects' (UCRIHS) review of this project is complete and I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project.

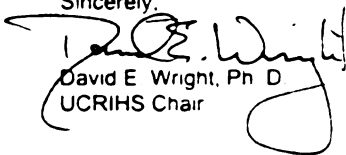
RENEWALS: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Projects continuing beyond one year must be renewed with the green renewal form. A maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for a complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB# and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/CHANGES: Should either of the following arise during the course of the work, notify UCRIHS promptly: 1) problems (unexpected side effects, complaints, etc.) involving human subjects or 2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of further assistance, please contact us at 517 355-2180 or via email: UCRIHS@pilot.msu.edu. Please note that all UCRIHS forms are located on the web: <http://www.msu.edu/unit/vprgs/UCRIHS/>

Sincerely,


David E. Wright, Ph.D.
UCRIHS Chair

DEW

cc: James Anderson



OFFICE OF
**RESEARCH
AND
GRADUATE
STUDIES**

University Committee on
Research Involving
Human Subjects
(UCRIHS)

Michigan State University
246 Administration Building
East Lansing, Michigan
48824-1046

517/355-2180
FAX 517/353-2976

The Michigan State University
IDEA is Institutional Diversity
Experience in Action

MSU is an affirmative action
equal opportunity institution

APPENDIX 4.

PARQ SCRIPT

Questionnaire script

Before assembling the participants, whose parents had already signed and returned the consent form, the students would be informed that they were going to leave their classroom and participate in answering the PARQ. Even if their parent had given permission the participants would now be afforded the option as to whether or not they wanted to join the group and be included in the research.

Good morning / afternoon

My name is Jim Anderson

The reason you are with me today is so you can answer some questions which are part of a study being conducted by myself and Michigan State University. Each of you took a letter home explaining what we would be doing today and your parent or guardian has given permission for you to participate. After I read the instructions for completing the research questionnaire you may decide you would not like to participate. That will be your choice and I will provide an opportunity after the instructions and before we begin the questionnaire for you to make that choice.

For the next 30 - 40 minutes you will be answering questions on a form called: Parental Acceptance Rejection Questionnaire. There are no right or wrong answers to any of these questions. It is important for you to know that each question is measuring what you think or how you feel about the question and not whether your answer is right or wrong. Would someone tell me what a questionnaire is? How is it different from a test? Since we now have discussed the difference between a questionnaire and a test you should also know that your results from the PARQ will be compared to your 4th grade MEAP reading score. This is done in order to determine and relationships between the two measures.

There are 60 questions that will ask how you feel about your mother's parenting behaviors. Please answer truthfully. Your answers will not be shared with anyone and no one will have access to your answers. In fact, as soon as you have completed the questionnaire an identification number will be assigned to your questionnaire and from that point on you will only be identified by that assigned number. Your answers to the questions will be entered, by identification number not your name, into a computer program for analysis. Results from the study will not be reported by name.

You may ask questions anytime while you are answering the questionnaire. I will read each of the 60 questions and you will have four (4) choices to pick from. The choices are: (1)almost always true; (2)sometimes true; (3)rarely true; (4)almost never true. You will indicate your answer with an X on the line under the choice you would like to make for each question.

Do you have any questions?

At this time please open the brown envelope in front of you and remove the questionnaire. Please put your name on the front of the questionnaire. Follow along as I read the directions on the front cover. Any questions? Please turn the page.

Read with me as I read the three (3) practice questions. Do you see where the four lines are that correspond to the answer choices? Please make an X on the line that best describes how you feel or think about each of the three practice questions.

The next four pages contain the 60 questions. At anytime you may quit answering questions. You may also choose to not answer a particular question. I will not be looking to see if everyone is answering the questions nor will I ask anyone if they have stopped. It is completely your choice.

Are there any questions? At this time does anyone wish to not participate?
Let's begin with question #1.....

APPENDIX 5.

PARQ INSTRUMENT

CHILD PARQ

Name (or I.D. number) _____

Date _____

Here are some statements about the way mothers act toward their children. I want you to think about how each one of these fits the way your mother treats you.

Four lines are drawn after each sentence. If the statement is basically true about the way your mother treats you then ask yourself, "Is it almost *always* true?" or "Is it only *sometimes* true?" If you think your mother almost always treats you that way, put an *X* on the line ALMOST ALWAYS TRUE; if the statement is sometimes true about the way your mother treats you then mark SOMETIMES TRUE. If you feel the statement is *basically* untrue about the way your mother treats you then ask yourself, "Is it *rarely* true?" or "Is it almost *never* true?" If it is rarely true about the way your mother treats you put an *X* on the line RARELY TRUE; if you feel the statement is almost never true then mark ALMOST NEVER TRUE.

Remember, there is no right or wrong answer to any statement, so be as honest as you can. Answer each statement the way you feel your mother really is rather than the way you might like her to be. For example, if your mother almost always hugs and kisses you when you are good, you should mark the item as follows:

TRUE OF MY
MOTHERNOT TRUE OF
MY MOTHER

Almost	
Always	Sometimes
True	True

	Almost
Rarely	Never
True	True

1. My mother hugs and
kisses me when
I am good.....

__X__

O.K., now let's try three more to make sure you know how to answer these questions.

	TRUE OF MY MOTHER	NOT TRUE OF MY MOTHER
	Almost Always True	Sometimes Rarely True
		Almost Never True
MY MOTHER		
1. Thinks it is my own fault if I get into trouble.....	____ " _____ "	_____ " _____ "
2. Likes for me to bring friends home.....	____ " _____ "	_____ " _____ "
3. Spends as much time with me as she can.....	____ " _____ "	_____ " _____ "

NOW GO TO NEXT PAGE AND BEGIN

Remember, there are no right or wrong answers, so answer each sentence the way you really feel.

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<i>MY MOTHER</i>				
1. Says nice things about me..	_____	_____	_____	_____
2. Nags or scolds me when I am bad.....	_____	_____	_____	_____
3. Totally ignores me.....	_____	_____	_____	_____
4. Does not really love me.	_____	_____	_____	_____
5. Talks to me about our plans and listens to what I have to say.....	_____	_____	_____	_____
6. Complains about me to others when I do not listen to her.....	_____	_____	_____	_____
7. Takes an active interest in me.....	_____	_____	_____	_____
8. Encourages me to bring my friends home, and tries to make things pleasant for them.....	_____	_____	_____	_____
9. Ridicules and makes fun of me.....	_____	_____	_____	_____
10. Ignores me as long as I do not do anything to bother her.....	_____	_____	_____	_____
11. Yells at me when she is angry.....	_____	_____	_____	_____
12. Makes it easy for me to tell her things that are important to me.....	_____	_____	_____	_____
13. Treats me harshly.....	_____	_____	_____	_____
14. Enjoys having me around her...	_____	_____	_____	_____
15. Makes me feel proud when I do well.....	_____	_____	_____	_____

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<i>MY MOTHER</i>				
16. Hits me, even when I do not deserve it.....	_____	_____	_____	_____
17. Forgets things she is supposed to do for me...	_____	_____	_____	_____
18. Sees me as a big bother.	_____	_____	_____	_____
19. Praises me to others....	_____	_____	_____	_____
20. Punishes me severely when she is angry.....	_____	_____	_____	_____
21. Makes sure I have the right kind of food to eat.....	_____	_____	_____	_____
22. Talks to me in a warm and loving way.....	_____	_____	_____	_____
23. Gets angry at me easily.	_____	_____	_____	_____
24. Is too busy to answer my questions.....	_____	_____	_____	_____
25. Seems to dislike me.....	_____	_____	_____	_____
26. Says nice things to me when I deserve them.....	_____	_____	_____	_____
27. Gets mad quickly and picks on me.....	_____	_____	_____	_____
28. Is concerned who my friends are.....	_____	_____	_____	_____
29. Is really interested in what I do.....	_____	_____	_____	_____
30. Says many unkind things to me.....	_____	_____	_____	_____
31. Ignores me when I ask for help.....	_____	_____	_____	_____

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<i>MY MOTHER</i>				
32. Thinks it is my own fault when I am having trouble.....	_____	_____	_____	_____
33. Makes me feel wanted and needed.....	_____	_____	_____	_____
34. Tells me that I get on her nerves.....	_____	_____	_____	_____
35. Pays a lot of attention to me.....	_____	_____	_____	_____
36. Tells me how proud she is of me when I am good...	_____	_____	_____	_____
37. Goes out of her way to hurt my feelings.....	_____	_____	_____	_____
38. Forgets important things I think she should remember.....	_____	_____	_____	_____
39. Makes me feel I am not loved any more if I misbehave.....	_____	_____	_____	_____
40. Makes me feel what I do is important.....	_____	_____	_____	_____
41. Frightens or threatens me when I do something wrong.....	_____	_____	_____	_____
42. Likes to spend time with me.....	_____	_____	_____	_____
43. Tries to help me when I am scared or upset.....	_____	_____	_____	_____
44. Shames me in front of my playmates when I misbehave.....	_____	_____	_____	_____
45. Tries to stay away from me...	_____	_____	_____	_____

	TRUE OF MY MOTHER		NOT TRUE OF MY MOTHER	
	Almost Always True	Sometimes True	Rarely True	Almost Never True
<i>MY MOTHER</i>				
46. Complains about me.....	_____	_____	_____	_____
47. Cares about what I think and likes me to talk about it.	_____	_____	_____	_____
48. Feels other children are better than I am no matter what I do.....	_____	_____	_____	_____
49. Cares about what I would like when she makes plans.	_____	_____	_____	_____
50. Lets me do things I think are important, even if it is inconvenient for her....	_____	_____	_____	_____
51. Thinks other children behave better than I do.	_____	_____	_____	_____
52. Makes other people take care of me (for example, a neighbor or relative).	_____	_____	_____	_____
53. Lets me know I am not wanted.....	_____	_____	_____	_____
54. Is interested in the things I do.....	_____	_____	_____	_____
55. Tries to make me feel better when I am hurt or sick.....	_____	_____	_____	_____
56. Tells me how ashamed she is when I misbehave....	_____	_____	_____	_____
57. Lets me know she loves me.	_____	_____	_____	_____
58. Treats me gently and with kindness.....	_____	_____	_____	_____
59. Makes me feel ashamed or guilty when I misbehave.....	_____	_____	_____	_____
60. Tries to make me happy..	_____	_____	_____	_____

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