EFFECTS OF PARENTAL INVOLVEMENT ON MEXICAN-AMERICAN EIGHTH GRADE STUDENTS' ACADEMIC ACHIEVEMENT: A STRUCTURAL EQUATIONS ANALYSIS

by

Patricia Berg Keith

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APPROVED:

Marilyn Lichtman

Marilyn Lichtman
Chairman

L. Wolfle

Lee M. Wolfle

Peter Malpass

Peter Malpass

Kusum Singh

Kusum Singh

Irma Silva-Barbeau

Irma Silva-Barbeau

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Committee Chairman: Marilyn Lichtman
(Educational Research and Evaluation)

(ABSTRACT)

Mexican-American children are educationally disadvantaged, are at-risk for academic failure, and have not demonstrated the academic achievement that other immigrant groups have, even after they have lived in the U.S. for many generations. Today, parental involvement is being touted by government officials and the popular press as one mechanism through which academic achievement can be increased. If parental involvement is indeed effective, it may be one mechanism for improving the achievement of Mexican-American students.

For this research, causal modeling (path analysis) was used to investigate the influence of parental involvement on overall academic achievement, and the reading, math, science, and social studies achievement on 1,714 eighth grade Mexican-American children. This research utilized the National Education Longitudinal Study of 1988 (NELS 88), the third major national longitudinal survey developed by the National Center for Education Statistics (NCES).

Parental involvement, defined as discussing school activities and having high educational aspirations for children, positively affected all academic achievement areas. SES (socioeconomic status) and previous learning also had strong influences on achievement. Interestingly, as parents' language proficiency

increased, parental involvement decreased, when controlling for the gender of the student, SES, parents' birth place, and previous learning. Gender differences were evident in all academic areas, and females received more attention than males from their parents. Family rules did not influence academic achievement and may in fact have a negative influence on social studies achievement.

Since a good education is necessary for all who live in modern society, educators and policy makers should continue to encourage Mexican-American parents to discuss school activities and have high educational aspirations for their children. Parental involvement is one potentially alterable variable which can positively influence the academic achievement of Mexican-American children.

Acknowledgements

I would like to acknowledge and thank the many persons that have guided me during my doctoral studies and especially during this dissertation process. Since the beginning of my doctoral studies, Marilyn Lichtman has provided me with wisdom, understanding, and insight into the research processes available. Through her instruction and example, I have gained an understanding and appreciation of both quantitative and qualitative research techniques. My understanding of structural equations modeling statistical techniques and this dissertation have been supported by Lee Wolfle. Pete Malpass' enthusiasm, encouragement, and support has been present since my first statistics classes. Kusum Singh's involvement in "Research for Fun" and in parental involvement research has contributed to this dissertations completion. Providing new ideas and directions for this research was provided by Irma Silva-Barbeau.

Without the encouragement, support, and love from my husband, Tim, this dissertation would have not been "...just a dissertation...". Finally, I would like to thank my children - Davis, Scott, and Willie - for their patience and acceptance of my time in the home office behind a computer. I hope that they too catch the thrill and excitement of doing research that Tim and I have discovered.

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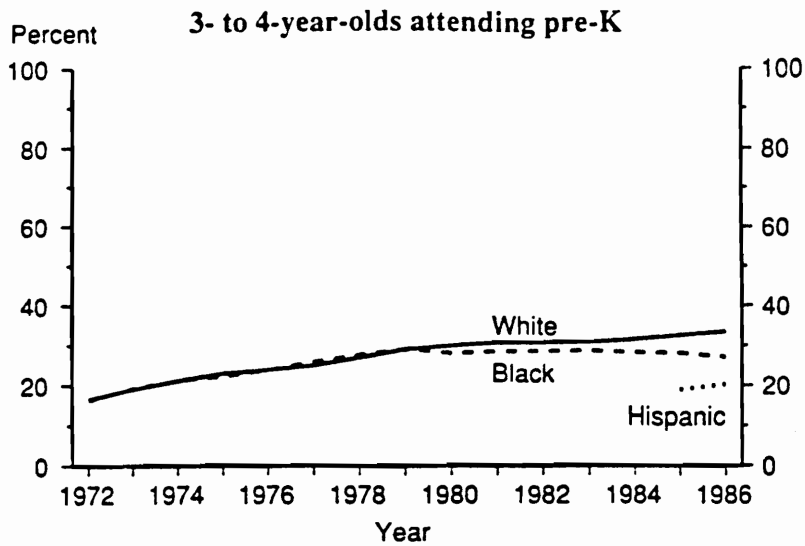
CHAPTER ONE: INTRODUCTION

Mexican-American children are educationally disadvantaged (Ortiz, 1986) and at-risk for academic failure (Hafner, Ingels, Schneider, & Stevenson, 1990). Mexican-American children (a) are less likely than other ethnic groups to be enrolled in preprimary education and kindergarten (Ogle, 1990, see Figure 1); (b) score below whites and Asian Americans on standardized tests (Figueroa & Sassenrath, 1989; Moore & Smith, 1987; see Figure 2); (c) drop out of high school at higher rates than do whites (Ascher, 1985a; Ballesteros, 1986; Fernandez, Paulsen, Hirano-Nakanishi, 1989; Ogle, 1990, see Figure 3); and (d) are over-represented in low SES job categories (Thomas & Gordon, 1983).

When parents are actively involved in their children's education academic achievement increases (Epstein, 1984a). "What parents do to help their children learn is more important to academic success than how well off the family is" (U. S. Department of Education, 1987, p.5). Despite such claims, research support for the influence of parental involvement on academic achievement is limited and the results are often inconsistent. But if parental involvement can indeed increase children's academic achievement, then it may be a way of improving Mexican-American children's achievement.

If education is the most important factor in predicting children's future prospects (Valdivieso, 1986), then methods of improving the education of Mexican-Americans are needed. Parental involvement has been touted as one method of improving education and educational outcomes, but its effects for Mexican-American children are unknown. Research is thus needed to determine if parental involvement does indeed influence the academic achievement of Mexican-American children.



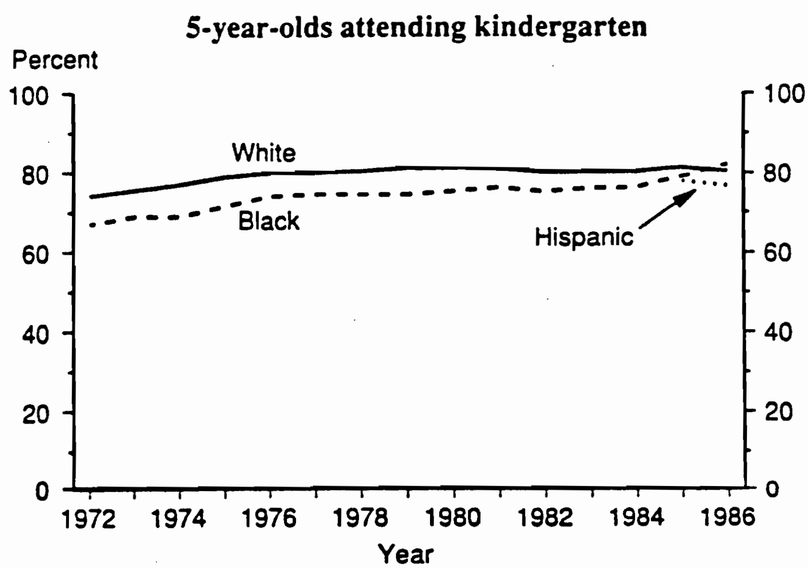


Figure 1. Enrollment rates for preprimary and kindergarten education, by race/ethnicity: 1972-1986, 3 year averages. From The Condition of Education 1990: Elementary and Secondary Education (pp. 55) by L. T. Ogle, editor, 1990, U. S. Department of Education, OERI, NCES 90-681, Washington, D.C.: U.S. Printing Office. Three year averages from "U. S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-20 "School Enrollment...", various years.

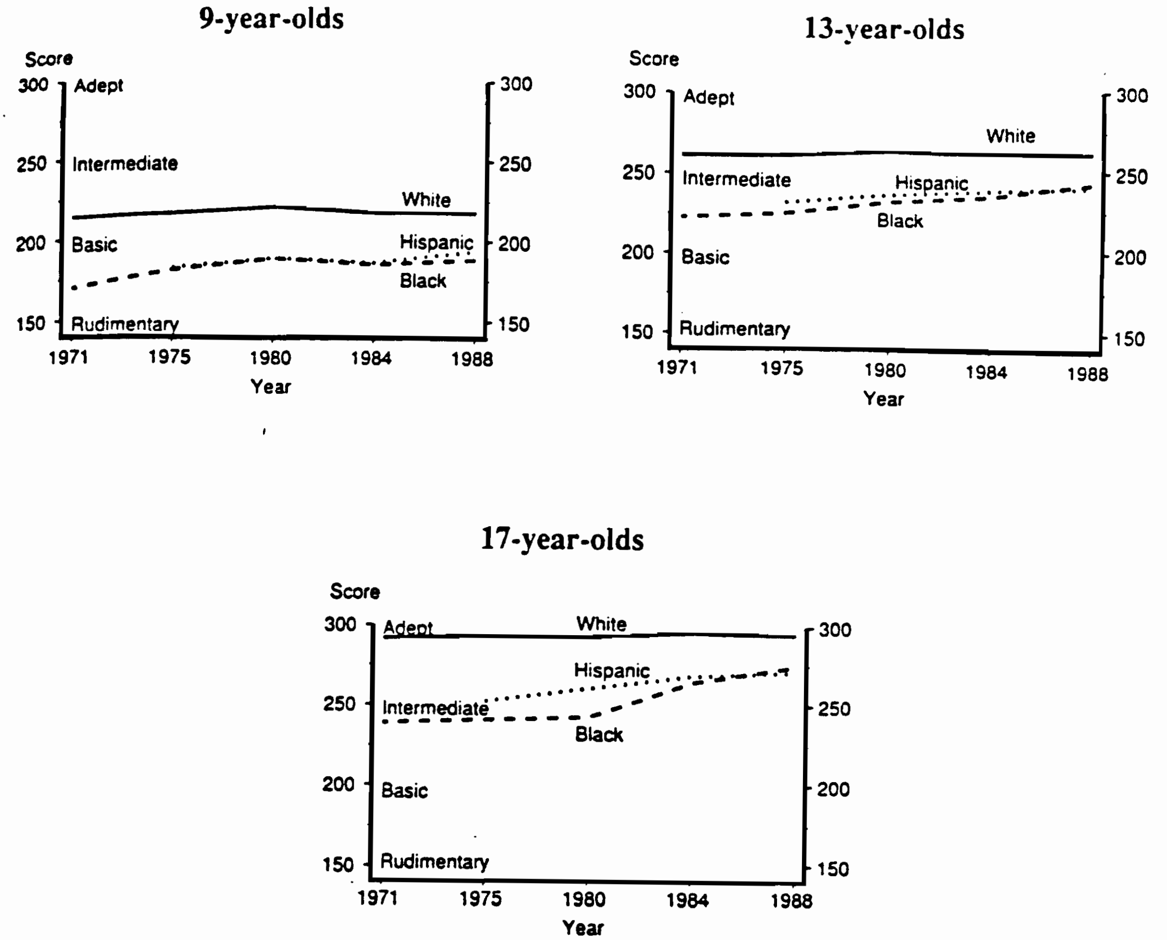


Figure 2. Reading performance, by age and by race/ethnicity: 1971-1988. From The Condition of Education 1990: Elementary and Secondary Education (pp. 27) by L. T. Ogle, editor, 1990, U. S. Department of Education, OERI, NCES 90-681, Washington, D.C.: U. S. Printing Office. Performance scores from The Reading Report Card, 1971-1988: Trends From the Nation's Report Card, National Assessment of Educational Progress, 1990.

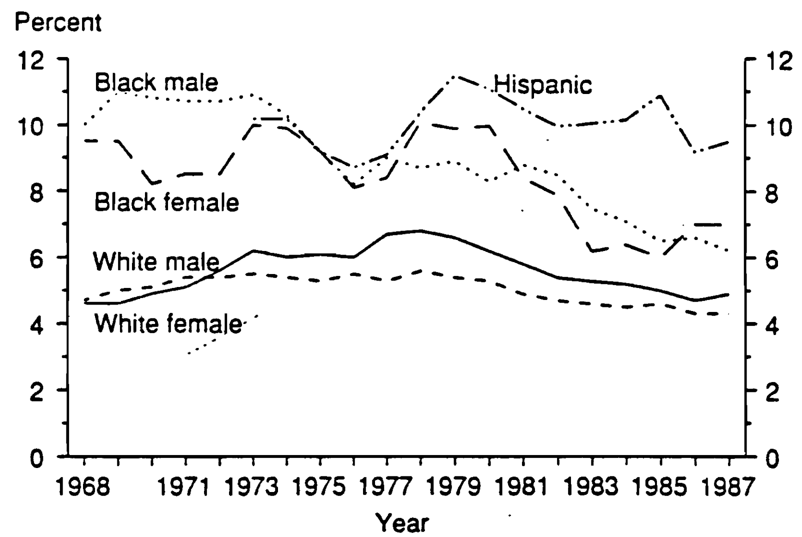


Figure 3. Drop out rates from grades 10-12, by race/ethnicity: 1968-1987, three year averages. From The Condition of Education 1990: Elementary and Secondary Education (pp. 21) by L. T. Ogle, editor, 1990, U. S. Department of Education, OERI, NCES 90-681, Washington, D.C.: U.S. Printing Office. Drop out rates from M. J. Frase, Dropout Rates in the United States: 1988, September, 1989. U. S. Department of Education, NCES.

This research investigated the influence of parental involvement on the academic achievement of Mexican-American children. Path analytic techniques were used with the National Education Longitudinal Study of 1988 (NELS 88) to answer the question: Does parental involvement influence eighth grade Mexican American students' academic achievement? The model used in this research is shown in Figure 4.

Problem

Mexican-American are the fastest growing ethnic group in the U.S. (Brown, Rosen, Hill, & Olivar, 1980), and in many large urban city school districts Mexican-American (along with blacks) are the majority (Pallas, Natriello, & McDill, 1989). Mexican-American children are educationally disadvantaged, at-risk, and have not demonstrated the academic achievement that other immigrant groups have even after they have lived in the U. S. for many generations (Nielsen, 1986).

Importance of Studying Parental Involvement

Limited research exists concerning Hispanics' academic achievement. That which does exist focuses on preschool children (e.g., Reynolds, 1989), high school students (e.g., Keith & Page, 1985), or college students (e.g., Munoz, 1986). "Research is needed to provide information about the critical transitions experienced by eighth graders as they develop, attend school, and embark on their careers" (NELS 88, p. 5). Perhaps the cause of lower academic achievement levels and completion rates for Mexican-American students begins before the end of high school with lower educational expectations (e.g., Eagle & Maw, 1986).

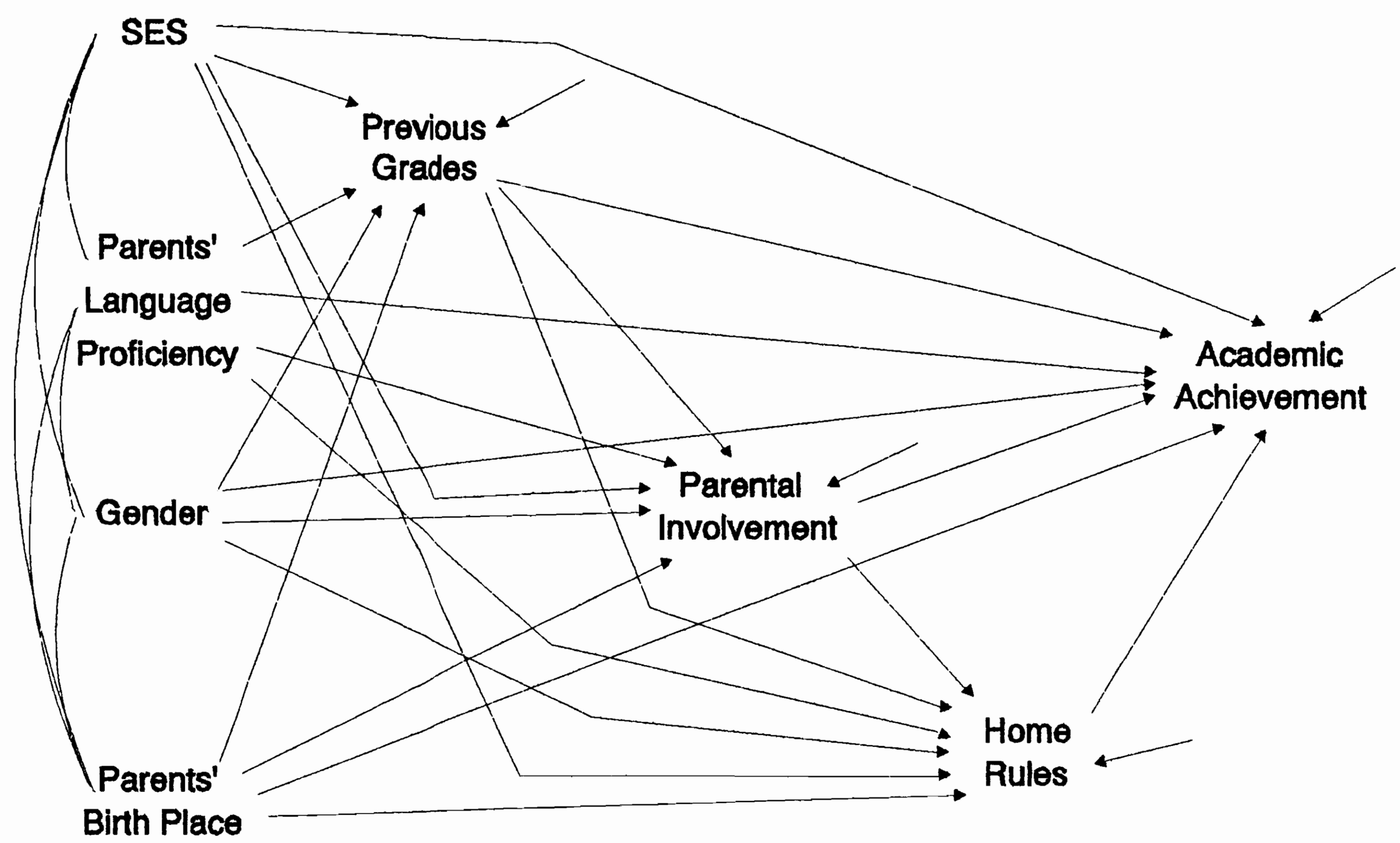


Figure 4. A model of the Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth Place, Previous Grades, Parental Involvement, and Home Rules on Achievement.

The research that does exist on Hispanic students' academic achievement groups students from all Spanish origins. On the surface, this may be a reasonable research design, yet it can cause difficulties in generalizability (cf. Marjoribanks, 1983). Though Mexican-American's may share a common language, religion, and some cultural traditions with other Hispanic students, there are also major differences among these groups (Vazquez & Ramirez-Krodel, 1989). Children whose families immigrated from Cuba, Puerto Rico, Central or South America, Spain, or Mexico during various decades may not be as homogenous a group as researchers have us to believe (Escovar & Escovar, 1985). It is also important to consider language abilities, gender, age, parents' level of education, and "at-risk" factors when conducting research on Hispanics students.

"If we are convinced that a good education is necessary for all who live in modern society, then we must search for the alterable variables which can make a difference in the learning of children....Our basic research task is to understand further how such alterable variables can be altered and their consequent effect on students, teachers, and learning" (Bloom, 1984, p. 16). Therefore, it becomes urgent for researchers to assist educators and policy makers in studying the alterable variables that will improve the educational outcomes of Mexican-American children. Parental involvement may be one such variable.

Parental involvement theorists (Epstein, 1987; Marjoribanks, 1983; Seginer, 1983) have argued that parental involvement is an alterable variable that may improve student academic achievement. Bloom (1984) and Keith (1991) have suggested that parental involvement is one variable that has potential for increasing student academic growth. It is a variable that is manipulable; it has direct and indirect effects on academic achievement (Fehrmann, Keith, & Reimers, 1987). Thus, parental involvement is an important variable to study when investigating Mexican-American academic achievement.

Unfortunately, "parental involvement" is a vague term with a multitude of meanings. The term has evolved over time (Gordon, 1979) and describes a continuum of participation endeavors of parents (Cervone & O'Leary, 1982).

Some researchers use the term parental involvement to refer to general parental interest and involvement in students' social and academic lives (e.g., Keith, Reimers, Fehrmann, Pottebaum, & Aubey, 1986). Others use the term to mean parental participation in school activities (e.g., Cervone & O'Leary, 1982). How parents instill positive attitudes and motivation may also relate to parental involvement (e.g., Bloom, 1981), along with parents' verbal encouragement (e.g., Marjoribanks, 1983). Some parental involvement research includes parental educational aspirations and expectations (e.g., Seginer, 1983); students' perceptions of standards and aspirations are included in other parental involvement definitions (e.g., Pallas, Natriello & McDill, 1989).

Purpose Statement

The purpose of this research was to investigate the extent of the influences of parental involvement on the academic achievement of Mexican-American students, when important background variables (SES, parents' English language proficiency, parents' birth place, student's gender, and student's previous grades) were controlled. Figure 4 (page 6) illustrates the model, which is based on theory and previous research.

Limitations and Definitions for Research

Over 24,000 students participated in the NELS 88 surveys, creating a representative sample of U. S. eighth grade students. This research studies only those students who identified themselves as Mexican-American (Chicano), who completed the Student Survey and related academic achievement tests, and whose parents completed the Parent Survey. A total of 1,714 students and their parents were used in this research. Although the NELS 88 survey provides a representative sample of eighth graders, its degree of representation of Mexican-American eighth graders is unknown.

For this research the term Mexican-American is limited to persons whose ethnic origin is traceable to Mexico, including persons of all races (Brown, Rosen, Hill, & Olivar, 1980). The term Hispanic is limited to persons whose ethnic origins is traceable to Mexico, Puerto Rico, Cuba, Central or South America, Spain, or some other Spanish speaking country, including persons of all races (Brown, et al., 1980).

Organization of Study

This dissertation is organized in the following manner:

Chapter One presents an introduction, the problem, the importance of studying parental involvement, the purpose, the limitations and definitions for research, and the organization of the study.

Chapter Two includes a historical review of parental involvement, defines parental involvement, presents three models or theoretical bases of parental involvement research, and reviews parent involvement literature in general and in specific for Mexican-American students.

Chapter Three discusses instrumentation and data collection, subjects, ordering and justification of the model, analyses, and procedures.

Chapter Four shares the research results, summary and conclusions, and implications and recommendations for future research.

CHAPTER TWO: REVIEW OF SELECTED LITERATURE

Parental involvement influences children's academic achievement (cf. U. S. Department of Education, 1987). Although, there is agreement that parental involvement is important in assisting children to achieve, there is no agreement on what constitutes parental involvement, and work in this field remains speculative (cf. Ascher, 1988). The literature rarely reflects how parental involvement has changed and evolved (Gordon, 1979). And there is a paucity of research focusing on the effects of parental involvement on Mexican-American students' academic achievement. The research that exists generally has not controlled for important influences such as SES, parents' language proficiency, parents' place of birth, student's gender, or previous grades. Thus, there is a need to study the effect of parental involvement on the academic achievement of Mexican-American eighth grade students. This chapter presents a historical overview of parental involvement, defines parental involvement, summarizes three major theories in the field, reviews and summarizes general parental involvement literature, and concludes with a review and summary Mexican-American parental involvement research.

Historical Review of Parental Involvement

There are three paradigms that guide educational researchers who study parental involvement and academic achievement in schools today (Epstein, 1987). First is the idea of shared responsibilities between parents and schools (Litwak & Meyer, 1974). Second is the notion of separate responsibilities of parents and schools (Waller, 1932). Third is the idea of sequential responsibilities of parents and schools (Bloom, 1964). The history of the people of the United States has helped shape these three different perspectives, each based on different assumptions about parental involvement and academic achievement.

In colonial times, and into the eighteenth century, opportunities for education were based on a family's income and religious affiliation, a student's gender, or societies' labor force needs. During this period the wealthy classes' sons were educated in a European or English system of education. Rarely were women, the working classes, or minorities educated outside the home, or in apprenticeship programs.

In the early 19th century, parents, church officials, and local communities came together to establish schools and develop goals for learning in an attempt to integrate children into the adult community (Prentice & Houston, 1975). During this period the community -- including parents -- hired and fired the teachers, established the school calendar, and determined the classroom curriculum. But not all children received an education.

The emphasis in this relation between parental involvement and schools stressed cooperation and coordination between families and schools, with both sharing common goals for children (Leichter, 1974). These goals were accomplished most effectively when teachers and parents worked together (Bronfenbrenner, 1979).

In the late 19th century a different pattern started to emerge. Horace Mann and others worked to establish teaching as a profession, and, as public education developed, schools began to distance themselves from the home by emphasizing the special knowledge that teachers had regarding subject matter and pedagogy. Teachers also began teaching subjects that were not always familiar to parents (e.g., reading, writing). Parents assisted teachers by teaching children good behavior and good attitudes regarding the value of education.

Besides parents taking a secondary role in the educational process of children, the Church and State began to have a different focus. The role of parents and the Church became that of educating children in ethics, morals, and religious doctrine, and schools educated children in academic subjects.

The emphasis in this relation between parental involvement and schools was on separate responsibilities. According to this paradigm, the responsibilities of parents and schools are basically incompatible; parents and educators have different goals, roles, and responsibilities that are fulfilled independently (Parson, 1959). Teachers are to maintain their professional standards and judgments about children in their classrooms, while parents maintain their personal attention to, standards for, and judgments about children at home (Weber, 1947).

In the second half of the 20th century, ideas about parental involvement and school relations changed due to social conditions affecting families and schools (Epstein, 1987). As people became better educated, they demanded curricular changes and more communication about their children's education from schools. Four trends influenced parental involvement and schools during this period.

Before 1950, less than 20% of women earned bachelor's degrees, compared to 50% by the 1980s (Bureau of the Census, 1985). This trend influenced parental involvement because many mothers had education equal to that of teachers; parents' views of teachers thus changed. Dr. Spock's book Baby and Child Care (1950) influenced parents' thoughts about their children's early learning experiences. It provided this generation with a new awareness of the role that parents could play in their children's preschool years.

In the 1960s and 1970s this trend toward greater parental involvement continued with federal regulations (and funding) to ensure that parents were involved in educational decision-making and program development. Programs such as Headstart and Follow-Through included parental involvement as an important program component (Gordon, Olmsted, Rubin, & True, 1979). Also during this period the basic family structure changed (Epstein, 1984b); the traditional family structure became one that included mothers working outside of the home and mothers as heads of households.

These events started a paradigmatic shift in parental involvement and school relations with sequential responsibilities between parents and schools. This concept of parental involvement is based on the idea that parents are children's first teachers (Bush, 1991). It assumes that teachers have the major responsibility for educating children once they enter school (Bloom, 1984), but parents support educational programs at home (cf. Becker & Epstein, 1982). It is this notion of support that is addressed in the present research.

Definitions of Parental Involvement

Parental involvement has different meanings to different people. Researchers have used the term to mean parents working with their children in home learning activities (Becker & Epstein, 1982), helping with homework (Brown, 1985), discussing current and school events (Epstein, 1984a), sitting on school committees, councils, or boards (Epstein, 1987), or volunteering in the classroom (Ascher, 1988). Parental involvement can involve parents showing interest in students' academic and social lives (e.g., Keith et al., 1986), teachers communicating with parents through conferences, notes, or other school functions (Bloom, 1984), parents becoming involved in advocacy groups (Cone et al., 1985), parents' educational expectations and aspirations (Seginer, 1983), or parents providing children with learning opportunities (Marjoribanks, 1983).

Parental involvement, for this research, is defined as students' report of parent-student discussions about school activities, programs, high school plans, and things studied, along with students' perceptions of parents' educational aspirations (Seginer, 1983).

Parental Involvement Theorists

Parental involvement theorists--Joyce Epstein, Kevin Marjoribanks and Rachel Seginer--have investigated the relation between parental involvement and academic achievement. Although these theorists have operationalized parental involvement in different ways, their research demonstrates how parental involvement may influence academic achievement. Epstein's and Marjoribanks's theories are systems-based (i.e., family, school, social structure, etc.), while Seginer's is based on meta-analytic results.

Epstein's model (1987) suggests there are overlapping systems of influence (forces) between families (F,f), children (C,c), parents (P,p), teachers (T,t) and schools (S,s), as shown in Figure 5. FORCE A represents a developmental time and history line for students, families, and schools (Epstein, 1987, p. 127). Force B and Force C represent the experiences of, and pressures, on family and school organizations and their members that need to be accounted for to study, understand, or change family - school relations (Epstein, 1987, p. 128). These

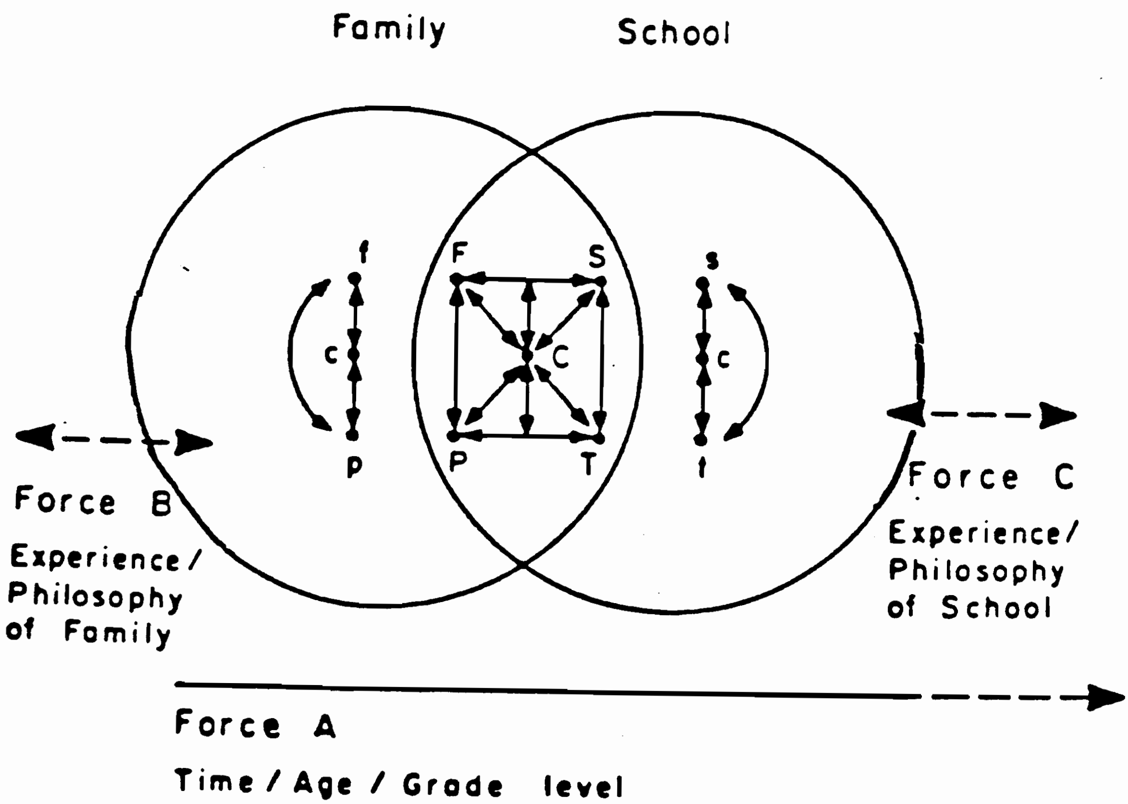


Figure 5. Epstein's Model of overlapping spheres of families and schools. "Toward a theory of family-school connections: Teacher practices and Parental involvement", by J. L. Epstein, 1987, in K. Hurrelmann, F. Kaufmann, & F. Losel (Eds.) Social Interventions: Potential and Constraints, p. 127, Berlin: Walter de Gruyter.

three forces interact with different magnitudes at various times. Epstein's definition of minimum parental involvement is when families and school communicate about school rules, visits, evaluations, and so on. Maximum parental involvement is when families and school communicate and operate as "partners" with frequent, comprehensive communication about cooperative educational efforts and programs.

Marjoribanks (1983) developed models for analyzing family learning environments (parental involvement) to predict children's academic growth. He studied students from different social classes and hypothesized that family learning environments are made up of three components: parents' aspirations for their children, parent-child learning interactions, and parents' concern for children's independence. All three components influenced children's academic growth, as shown in Figure 6. Through hierarchical regression analyses Marjoribanks concluded there was tentative support for the family learning environment models (Marjoribanks, 1983).

Seginer reviewed and summarized research on parents' educational expectations and academic achievement and developed a model based on her research summary (see Figure 7). She hypothesized that parental knowledge, aspirations, and school feedback all influence parents' expectations. These expectations affect parents' achievement supporting behavior, reinforcement systems, and the child's aspirations (Seginer, 1983). These factors in turn affect academic achievement.

These three theorists ideas and models help to explain the influence that parental involvement has on academic achievement.

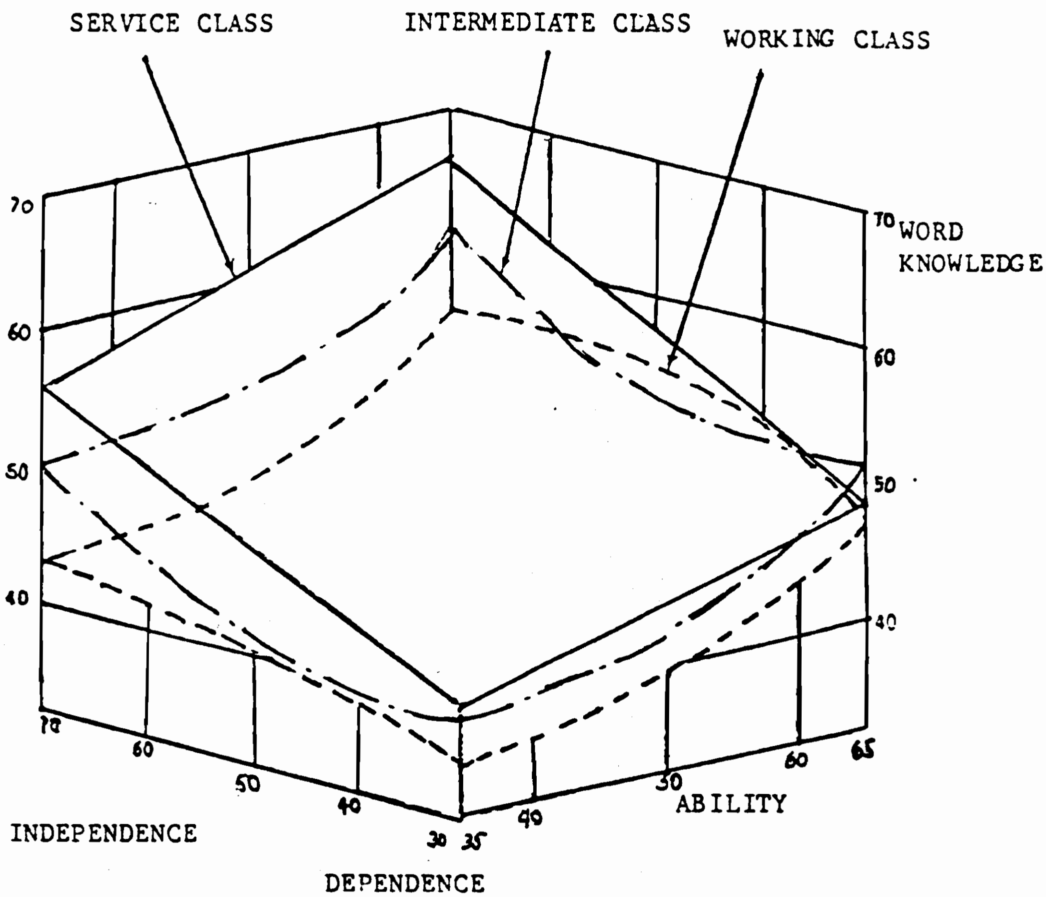


Figure 6. Example of Marjoribank's theoretical model, using word comprehension in relation to ability and parents' aspirations of working, intermediate and service class students. "The evaluation of a family learning environment model", by K. Marjoribanks, 1983, Studies in Educational Evaluation, 9, p. 348.

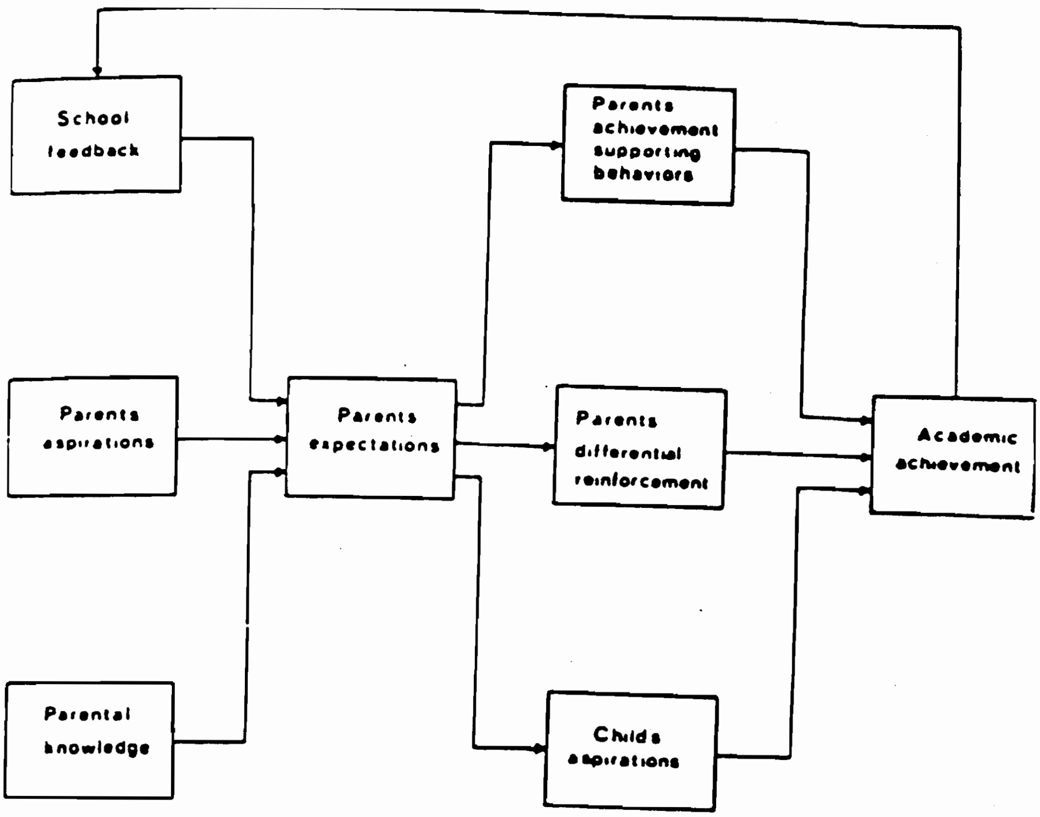


Figure 7. Seginer's parental educational expectations and parental involvement model. "Parents' educational expectations and children's academic achievements: A literature review", by R. Seginer, 1983, Merrill-Palmer Quarterly, 29, p. 5.

Effects of Parental Involvement on Achievement

There are three approaches to studying the effects of parental involvement on academic achievement (Gordon, 1979). The parent-child approach, the school-program approach, and the community approach have different focuses and consequently research outcomes vary. Thus, parental involvement research findings are mixed due to methological issues, definitions of what parental involvement constitutes, and different research approaches.

Parent-Child Approach

The parent-child approach examines the effects of family process variables (e.g., Marjoribanks, 1983) or the curriculum of the home (Walberg, 1981) on academic achievement. In this approach parents or the home environment are independent variables and school performance is the dependent variable. Positive learning environments in the home, along with positive attitudes toward education (Bloom, 1984), and high educational expectations of children (Seginer, 1983) result in increased student achievement. Research suggest that young children do better when they receive some extra attention (Dornbusch, 1986); when the extra attention is from their parents, they do much better (Tizard, Schofield, & Hewison, 1982).

Parental child-rearing styles also influence elementary students' academic achievement (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987). Across all racial and ethnic groups, family types or structures, and parental educational levels, the authoritarian parenting style (telling children not to argue or even question adults) is associated with students who receive the lowest grades in school. Permissive parenting styles (indifference to school and home activities) is associated with higher or medium grades. The authoritative parenting style (strong, but open to negotiation and discussion) is associated with students who receive the highest grades (Dornbusch et al., 1987). Students whose parents have inconsistent parenting styles or change from one style to another frequently get low grades in school (Dornbusch et al., 1987).

Parents have more frequent contacts with schools during their children's early elementary school years, and as children become older parent contacts with schools decrease (Stevenson & Baker, 1987). Parental encouragement, interest at home about school activities, and participation at school events appear to have a positive effect on academic achievement for elementary school students (Epstein, 1987).

In later school years parents often become involved when students are experiencing academic or behavior problems (Barth, 1979); parents of male students, frequently become involved for behavioral problems. There may also be a negative relation between parental involvement and academic achievement for older students, as well as an interaction effect based on student's sex (Baker & Entwisle, 1987).

For high school students parental involvement may have more indirect than direct effects on academic achievement (Fehrmann et al., 1987). Furthermore, parental involvement may not influence achievement when academic achievement is measured by standardized tests (Keith, et al., 1986). Keith (1991) suggested that parental involvement for high school students is influenced by the family's SES (higher SES families are more involved), gender (parents are more involved with girls than boys), ethnicity (minority families are more involved than white families), and ability (parents of higher ability students are more involved).

School-Program Approach

School-program research has studied the effects that parental involvement has on a program to improve student achievement. In this research the focus is on the student's program (e.g., Cone, Delawyer, & Wolfe, 1985), but the outcome is measured by parents and educators becoming more attuned to each other (Herman, & Yeh, 1980), so that children's academic achievement improves (Gordon et al., 1979).

A Chicago city-wide program that involved parents and teachers working together to create more academically supportive conditions in the home increased reading achievement scores (Walberg, Bole, & Waxman, 1980). Similarly, a comparison of three reading programs which differed only in level of parental involvement showed that reading achievement increased when parents participated in program decisions regarding what was taught and who taught it (Gillum, 1977).

Parents who have handicapped students are involved in their child's special education programs (Turnbull, 1983); PL 94-142 requires that parents are involved in the educational planning and evaluation of their children. But parental involvement is not always consistent across SES groups and grade levels. Family income and level of education are positively correlated with parental involvement for handicapped children, mothers are more involved than fathers, and children's grade level is negatively correlated with parental involvement (Cone, Delayer, & Wolfe, 1985).

Community Approach

The community approach literature has studied the effects that regular and frequent communications, or contacts with the community, has on school effectiveness and ultimately on student's academic achievement. In this literature the focus is on the community, with the outcome measured as improved academic achievement in school. Schools with high achievement levels are more open to parent and community involvement than are schools with lower academic achievement and less community involvement (Wagenaar, 1977). Community involvement through organizing activities, fund raising, and volunteering is related to quality of education (Philips, Smith, & Witte, 1985).

Comer (1980) directed a program to modify social and psychological factors in schools by developing patterns of shared responsibilities and decision making between parents and teachers in low achieving schools. After five years, schools involved in the program had achieved near grade-level academic achievement and had reduced parent-teacher conflicts.

Summary of Parental Involvement Literature

Because of various paradigms, parental involvement definitions and theories, and research approaches, parental involvement research is neither consistent nor definitive; much of the work in the field remains speculative. Many research questions are still unanswered.

Parental involvement, especially for younger aged children, has a positive influence on academic achievement (Tizard et al., 1982; Reynolds, 1989). As parents create positive learning environments at home (Marjoribanks, 1984), develop a curriculum in the home (Walberg, 1981), project positive attitudes toward education (Bloom, 1984), and form high educational expectations (Seginer, 1983), children's academic achievement increases.

Parents are more involved with schools when children are in elementary school years (Epstein, 1987), and as children grow older parents frequently are involved when students are experiencing academic or behavioral problems (Barth, 1979; Baker & Entwisle, 1987). Family income and education level are positively correlated with parental involvement for parents of special education students; children's grade level is negatively correlated with parental involvement. Mothers are more involved than fathers (Cone et al., 1985).

Schools with high achievement levels have more parental involvement (Wagenaar, 1977) and less parent-teacher conflicts (Comer, 1980) because they are more attuned to each other (Herman & Yeh, 1980), and in general are viewed by the community as providing high-quality education (Philips, et al., 1985).

For high school students parental involvement may be more indirect, through homework, than direct (Fehrmann et al., 1987). Also, family's ethnic membership and SES, and the ability and gender of the student influence parental involvement (Keith, 1991).

It appears that parental involvement plays a role during the elementary school years and decreases significantly by high school. But the influence that parental involvement has on middle school students is still unknown. More research is needed to answer questions about the influence that parental involvement has on academic achievement for middle school students.

Effects of Mexican-American Parental Involvement on Achievement

There is little research on the effects of parental involvement on Mexican-American children's academic achievement, and much of the research only tangentially relates to the topic. Mexican-American families typically place less emphasis on self-reliance, have more authoritarian parenting styles, have closer maternal relations, and place greater importance on family support systems than do non-Mexican-American families (Escavar & Lazarus, 1982).

The Mexican-American mother-child relationship has an influence on academic achievement (McGowan & Johnson, 1984). Mexican-American mothers may have a greater influence on their children than Black and White mothers (Fleming, 1982). And, as Mexican-American mothers become involved with their children, there are direct and indirect effects on the child's early academic achievement, perhaps because children's attitudes toward school and motivation patterns are still forming (Reynolds, 1989).

Eight highly successful Mexican-American women who had advanced degrees (Ph.D., MD., or JD.) gave credit to their encouraging mothers and home environments for their achievements. Such environments help them translate parents' work ethic into a school work ethic. They also attended highly integrated schools, were bicultural, persistent, and worked hard, and had a mentor relationship (Gandara, 1982). These parent-child relationships are influenced by parenting style, which can in turn be influenced by the length of time that the parents have been in the U.S. and their acculturation (Martinez, Norman, & Delaney 1984). Decreased fatalistic beliefs and less value of a family centered life are often related to educational upward mobility and amount of time in the U.S. (cf. Procidance & Rogler, 1989).

Mothers' educational beliefs influence their parental involvement and academic achievement expectations (Stevenson, Lee, Chen, & Stigler, 1990). Mexican-American mothers believe that homework, competency testing, and longer school days will influence children's academic achievement, more so than do non-Mexican-American mothers (Stevenson, Chen, & Utall, 1990).

Mexican-American mothers who have children in special education programs are pleased with the services, but are rarely involved in the program (Lynch & Stein, 1987). Mexican-American parental involvement may be facilitated through bilingual parent education training programs (Berry-Cabon, 1983) because English language proficiency may become a barrier to parental involvement (Lynch & Stein, 1987).

Case studies suggest that parental involvement in the education process can influence early reading achievement (Goldberg, 1989). Laosa (1982) argued there is a relation between the parent's level of schooling and the parent-child relationship, which he believed could be a plausible reason for Mexican-American limited academic achievement. For example, Anglo parents attempt to structure their children's play times into opportunities to teach and learn through discovery and creativity, while Mexican-American parents assign more importance to play (Strom & Johnson, 1989). Valencia (1984) found that there is a relation between low academic achievement and low parental involvement, and this has had an adverse effect on the Hispanic community.

Little research has been conducted concerning Mexican-American high school students. What exists suggests that Mexican-American high school students are less likely than other students to have plans to attend college (Eagle, 1988). Also, Mexican-American female high school students' after high school expectations are not as career oriented as those of white female students (Reisman & Banuelos, 1984).

Summary of Mexican-American Parental Involvement Literature

Mexican-American parental involvement literature is only tangentially related to academic achievement. Mexican-American mother-child relationships (McGowan & Johnson, 1984), maternal encouragement (Gandara, 1982), maternal educational beliefs (Stevenson, et al., 1990), and parents' English language proficiency (Lynch & Stein, 1987) may influence children's academic achievement. But parent's level of schooling (Strom & Johnson, 1989), parenting style, length of time in the U. S., acculturation (Martinez et al., 1984), and familism and fatalism (Procidance & Rogler, 1989), may be negatively related to academic achievement.

In reality, very little research exists about the influence that parental involvement has on the academic achievement of Mexican-American students. This study was designed to fill this critical need by contributing knowledge to the field regarding the influence that parental involvement has on the academic achievement of Mexican-American children.

CHAPTER THREE: METHOD

This chapter contains the following sections: instrumentation and data collection, subjects, ordering and explanation of the model, analyses, and procedures.

Instrumentation and Data Collection

NELS 88 is the third major longitudinal study sponsored by the National Center for Education Statistics (NCES). It was designed to provide information about pivotal transitions experienced by eighth grade students as they develop, attend school, and begin making career decisions (Hafner, et al, 1990).

NELS 88 provides information on a nationally representative sample of eight grade students. Data were collected in the spring of 1988, using four multiple choice surveys (students, parents, teachers, and school administrators), and four cognitive tests (reading, math, science, and social studies).

NELS 88 used a two-stage stratified sample. To ensure that the sample was balanced, schools were stratified--by region, urbanicity, and minority percentage--prior to sampling. Sampling was conducted first at the school level and then at the student level. Students were chosen at random from the selected schools; an average of 26 students per school were selected. This research used only the student and parent surveys; the return rates for these surveys were 93.4% and 93.7% respectively.

Subjects

The subjects of this research are 1,714 eighth grade students who identified themselves as Hispanic and of Mexican-American origin, and whose parents completed the Parent Survey. Girls made up 53% (899) of the sample and boys made up 47% (798) of the sample; a number of students (17) did not identify their sex. Fifteen was the average age for students in this sample. Mothers were the primary sources of information for the Parent Survey (77%), followed by fathers (19%) and others (4%).

The majority of the students (80%) live in homes where two parents are present, along with two or three siblings. Parents' highest level of education ranges from not finishing high school (39%), finishing high school or GED (17%), attending first year of college (36%), to graduating from college or attending additional schooling (8%). English was the dominant language spoken in 61% of these homes, with Spanish being the dominant language in the remaining homes. The families are within the following SES quartiles (lowest to highest): 56% in the first quartile, 21% in the second quartile, 16% in the third quartile and 7% in the fourth quartile. The average income of these families was between $15,000 to $19,000; the majority of these families have Catholic religious backgrounds (72%).

Students in this research attend schools for the most part in the west (51%) and south (37%), followed by schools the north central (11%) and the northeast (1%). Sixty-nine percent of the students attend schools where the minority count is greater than 41%.

Ordering and Explanation of the Model

The model used in this research is a simple recursive model (Figure 4, see page 6), with overall academic achievement as the outcome variable. The model was analyzed five times using a different outcome variable each time (overall academic achievement, and reading, math, science, and social studies achievement). The same exogenous and endogenous variables were used to test each dependent variable. The lines with arrows in the model (paths) suggest that the causal flow is unidirectional among variables. On the models which follow, the numbers on these paths represent the direct effects, and are interpreted as the portion of a standard deviation unit each presumed effect changes for each standard deviation change in the presumed cause, given the adequacy of the model. The path coefficients were estimated by beta weights from multiple regression analysis. The curved lines found in the model represent correlations between variables. No causal interpretations are attached to the correlations between exogenous variables. Arrows pointing from right to left represent disturbances or residuals, and are interpreted as all of the effects outside of the model. Disturbances were calculated as the square root of 1 - $\underline{R}^2$.

The variables in the model are ordered in a causal fashion based on previous research (Bloom, 1984; Keith, 1991; Reynolds & Walberg, 1990; Seginer, 1983; Walberg & Marjoribanks, 1976), theories of parental involvement (Epstein, 1987; Marjoribanks, 1984; Seginer, 1983), chronological or time precedence, and logic.

Exogenous Variables in the Model

SES, parents' English language proficiency, gender, and parents' birth place are exogenous or background variables. The effect these variables have on the dependent variable are controlled for in this model. The causes of these background variables come from influences outside the model, and are beyond the scope of this research.

SES is an available composite variable in NELS 88. It was developed using information about parents' education, occupation, and income. Some writers have argued that what parents do to help their children achieve in school has a greater influence on their academic achievement than the SES of the family (U. S. Department of Education, 1987). But Duncan, Featherman, and Duncan (1972) and others have demonstrated that parents SES does influence children's academic achievement and later SES. Research is inconsistent on the influence that SES has on Mexican-American academic achievement (Eagle, 1988; Porter, 1989; Rivera, 1987).

Parents' English language proficiency was developed using information from the parent questionnaire. Research often uses English language proficiency as an indicator for educational disadvangement (Rasinski & West, 1990). It was reasoned that parents' proficiency level in English would influence their involvement in the educational process of their child (Berry-Cabon, 1983; Lynch & Stein, 1987), thus influencing the child's academic achievement (Ascher, 1985b).

Gender is a common variable found in analyses investigating academic achievement. In this research it was hypothesized that the sex of a student may influence Hispanic parents' educational aspirations (Tittle, 1982) and other components of parental involvement (Simoniello, 1981).

Parents' birth place contributes information about the influence that country of birth plays in parental involvement, home rules, and academic achievement. It was hypothesized parents who were born in the U.S. may have different parenting styles and are more acculturated (Martinez et al., 1984), and that the forces of familism and fatalism are less operational (cf. Procidance & Rogler, 1989). Furthermore, parents born in the U. S. and knowledgeable about the American educational system are more likely to be involved.

Endogenous Variables in the Model

Previous grades, parental involvement, and home rules are endogenous variables. These intervening variables are in the model because of the influence they are believed to have directly or indirectly on achievement. In addition, parental involvement is in the model because it is the variable of primary interest in this research.

Cognitive ability and previous achievement are among the best predictors of student achievement (Walberg, 1986). Unfortunately, NELS 88 does not have the strong measures of cognitive ability that previous extant data sets included (e.g., vocabulary tests, mazes). Still, some ability measure is necessary when studying the influences of academic achievement (Alexander, Pallas & Cook, 1981). Previous grades were used as a measure of previous achievement or previous learning. It was reasoned that students with higher ability, as measured by previous grades, would have higher grade point averages (GPA's) and students with lower ability would have lower GPA's. Furthermore, previous grades have an advantage over other possible measures of previous learning in that they also are related to previous effort and motivation (Fehrmann et al., 1987).

Parental involvement, the variable of primary interest in this research, was developed from items on the student questionnaire. Parental involvement, for this research, was defined as students' report of parent-student discussions about school activities, programs, high school plans, and things studied, along with students' report of parents' educational aspirations. It was hypothesized that parental involvement would positively influence academic achievement directly and indirectly.

Home rules was included in the model as a measure of parents' parenting style (Escovar & Lazarus, 1985), their family value orientation, (McCool, 1984), and their view of the child's role in the family (Strom & Johnson, 1989). Home rules was thus viewed as a possible outcome of parental involvement that might also affect academic achievement. Also, families who have rules concerning students' television viewing achieve at higher rates in reading and mathematics (Ridley-Johnson, Cooper, & Chance, 1982). The home rules variable was a developed composite made up of parents' answers to questions about whether they had rules about their childs studying time, TV watching time, maintaining a grade point average (GPA), and doing home chores.

Outcome Variables in the Model

Overall academic achievement (composite of all achievement tests), along with reading, math, science and social studies achievement were the outcome variables in this research. Standardized achievement tests are commonly used as measures of academic achievement and learning in educational research (Walberg, 1986). All the exogenous and endogenous variables in the model were believed to influence the outcome variable in the model.

Analyses

A structural equations or path model was used to analyze selected NELS 88 data. Path analysis, causal modeling, or structural equations modeling is a method for studying patterns of causal relations among variables (Pedhazur, 1982). This methodology was originally developed by Sewall Wright, an American geneticist, in the early 1920s. Only since the 1960s has this methodology been regularly applied by behavioral and social scientists (Loehlin, 1987).

Path analysis is a statistical methodology where hypotheses about the causal relations among variables can be specified and studied within a theoretical framework (Pedhazur, 1982). A structural model provides a link between a priori theoretical notions of causal relations and quantitative estimates of causal effects (cf. Wolfle, 1980).

As used here, the assumptions of structural equations are similar to those of regression analysis (Hayduk, 1987). The expected values of the residuals are equal to zero and are independent of each other (zero covariances). These residuals have equal variance, and are statistically independent of the other variables in the equation.

Five major series of analyses were performed utilizing overall academic achievement (composite of all achievement tests), and reading, math, science, and social studies achievement as the outcome variable.

Successful application of structural equations models involves the modification of the specified model (Duncan et al., 1972), and this occurred during the analysis stage of this research. The results of the initial analyses led to slight modifications of the model. The final version of the model is the one presented in this dissertation.

The significance of paths was evaluated in two ways. The primary method was to examine the absolute magnitude of the path coefficients (standardized regression coefficients). Paths were interpreted as meaningful if the paths were greater than or equal to .05 (Pedhazur, 1982). The advantage of this method is that it is unaffected by sample size. Secondarily, statistical significance was determined in the common fashion; when there was a probability of less than .05. This method is affected by sample size, and with large samples even small paths may be statistically significant, although they may not be meaningful.

Procedures

Using procedures recommended by Fortune and McBee (1984), the following steps were taken in the preparation of the data used in this research: student and parent files were prepared and verified, with recoding taking place when appropriate; student and parent files were merged based on student identification number; codebooks were assembled and reviewed; and descriptive statistics were generated.

Students were selected for inclusion in this research if (1) they identified themselves as Hispanic and of Mexican/Chicano background (1,954) and (2) their parents had a completed parent questionnaire (1,714). These selection procedures resulted in a final sample of 1,714 Mexican-American students.

Composites were created to provide measures of a number of variables of interest: parents' English language proficiency, previous grades, parental involvement, home rules, and academic achievement. Initially, all questions were reviewed and those thought to be related to these composites were included in a merged file. Exploratory factor analysis was used to determine if these items formed composites. Items that formed clear factors, with loading of .40 or greater, were used in this research. Appendix A shows all of the NELS 88 items and value labels that were used in this research.

A series of multiple regression analyses were performed, using all endogenous and exogenous variables. The following analysis were performed:

1. Previous grades was regressed on parents' birth place, gender, parents' language proficiency, and SES.
2. Parental involvement was regressed on previous grades, parents' birth place, gender, parents' language proficiency, and SES.
3. Home rules was regressed on parental involvement, previous grades, parents' birth place, gender, parents' language proficiency, and SES.

A series of multiple regression analyses was then performed using each of the dependent variables. The following analysis were performed:

1. Academic achievement was regressed on home rules, parental involvement, previous grades, parents' birth place, gender, parents' language proficiency, and SES.
2. Reading achievement was regressed on home rules, parental involvement, previous grades, parents' birth place, gender, parents' language proficiency, and SES.
3. Math achievement was regressed on home rules, parental involvement, previous grades, parents' birth place, gender, parents' language proficiency, and SES.
4. Science achievement was regressed on home rules, parental involvement, previous grades, parents' birth place, gender, parents' language proficiency, and SES.

5. Social studies achievement was regressed on home rules, parental involvement, previous grades, parents' birth place, gender, parents' language proficiency, and SES.

The path coefficients resulting from these analyses were interpreted to be <u>meaningful</u> if they were equal to or exceeded a value of .05 (Pedhazur, 1982, chap. 15). Coefficients of determination, residuals, and standard errors were calculated, along with indirect and total effects.

CHAPTER FOUR: RESULTS AND DISCUSSION

The results of the analysis of the influences of parental involvement and other variables on overall academic achievement, and reading, math, science and social studies achievement, are presented in this chapter. Also included is a review of the influences on parental involvement. Summary and conclusion, and implications and recommendations for future research will conclude this chapter.

In the reporting of the analyses which follows, only those paths of .05 or greater are considered meaningful. Most such paths are also statistically significant (i.e., have a probability of less than .05 or a t greater than 1.96). In addition, paths that meet the criterion of meaningfulness will be interpreted qualitatively as representing a small, moderate, or large effect (Keith, in press).

The means, standard deviations, and correlations among the variables used in the analysis are presented in Appendix B.1 and B.2. Results of the decomposition of variables are found in Tables 1 through Table 5, along with the coefficients of determination (R^2) and multiple correlations (R). Standard errors for the paths for each of the models are found in Appendix C.

Effects of Parental Involvement on Overall Academic Achievement

Figure 8 presents the effects of parental involvement and other variables on academic achievement. Table 1 presents the direct, indirect, and total effects of each variable on overall achievement, along with the R^2 and R.

Parental involvement, as hypothesized, had a moderate influence on academic achievement (.122). This result suggests that parents who discuss school activities with their children and who have high educational aspirations for their children positively influence their children's academic achievement.

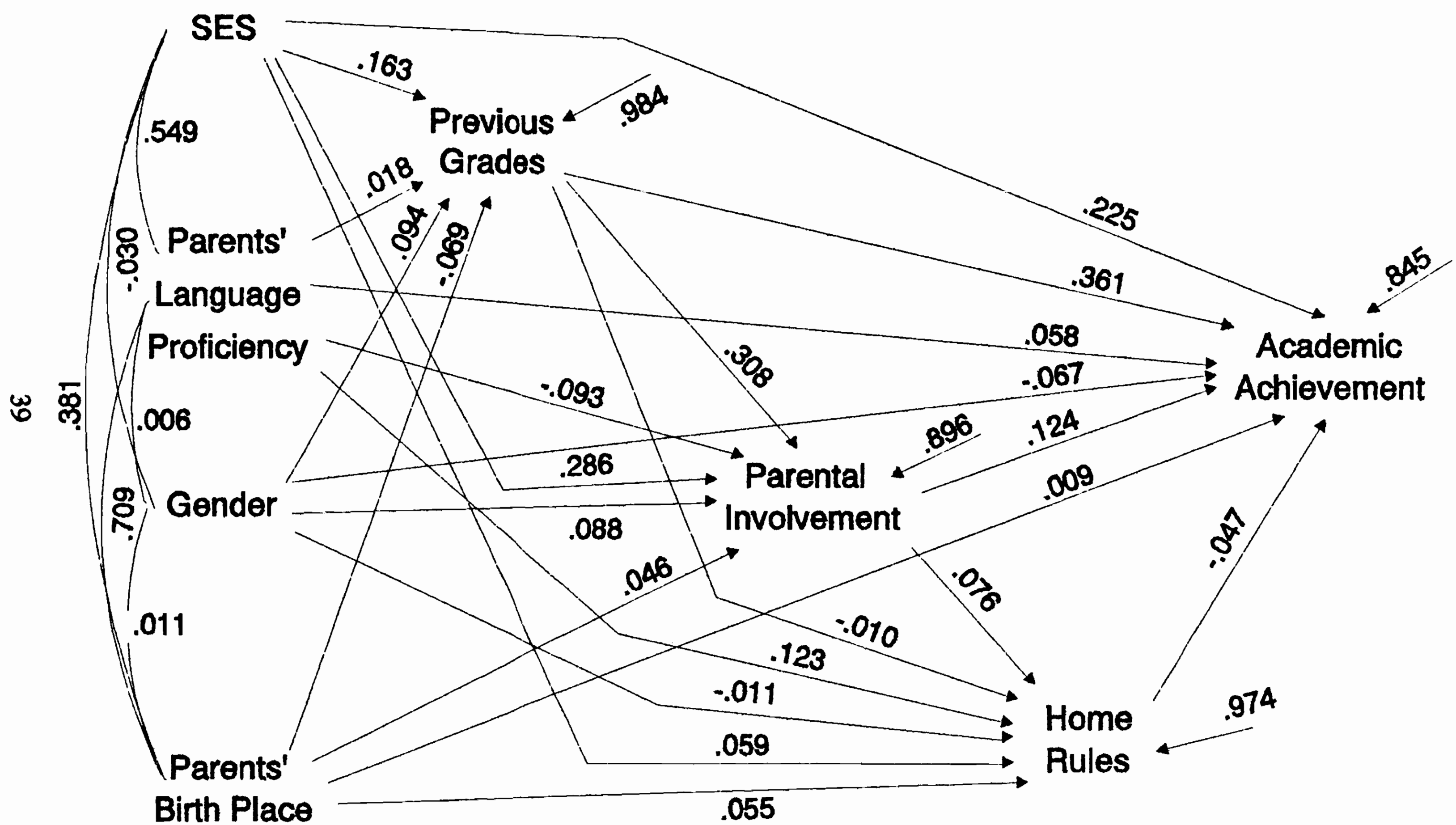


Figure 8. Effects of Parental Involvement on Eighth Grade Mexican-American Children's Academic Achievement.

Table 1

Direct, Indirect, and Total Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth place, Previous Grades, Parental Involvement, and Home Rules on Overall Academic Achievement.

	Effects		
Variable	Direct	Indirect	Total
SES	.226 *	.096 *	.322 *
	(2.567)	(-.035)	(3.692)
Parents' L. Prof.	.058	-.010	.048
	(.252)	(-.051)	(.201)
Gender	-.067 *	.048 *	-.019
	(.930)	(.765)	(1.695)
Parents' Birth Pl.	.009	-.025	-.016
	(1.026)	(-.405)	(.621)
Previous Grades	.362 *	.036 *	.398 *
	(3.727)	(.414)	(4.141)
Parental Inv.	.122 *	-.003	.119
	(1.321)	(-.028)	(1.293)
Home Rules	-.047 *	.000	-.047 *
	(-1.152)	(.000)	(-1.512)

Note: Standardized coefficients are listed first; unstandardized coefficients are listed in parentheses underneath. * $p < .05$. $R = .535$, $R^2 = .286$.

Previous grades (.362) and SES (.226) each had larger direct influences on academic achievement than parental involvement. Students' previous grades (previous learning) appears to be the strongest influence on academic achievement, as measured by standardized achievement tests. This finding of the importance of previous learning is not surprising, and is consistent with previous research (Fehrmann et al., 1987 and Keith, 1986). Similarly, a family's SES had a moderate influence on overall achievement, a result consistent with Walberg (1986).

Home rules (-.047) did not contribute to a better understanding of the influence that parental involvement had on academic achievement. It appears that having home rules about studying, watching TV, maintaining a GPA, and doing chores does not influence student achievement.

The effect of gender suggest that Mexican-American males had higher overall academic achievement (-.067) than females. This is based on the total effect, which included both the direct effect of gender and it's indirect effects through other variables in the model (e.g. previous grades).

Parents' birth place did not operate as hypothesized; results suggest that parents' birth place (.009) had no meaningful direct effect on students' academic achievement.

These findings suggest that parental involvement does have a moderate influence, that previous learning and SES have large influences, that parents' birth place had no influence, and that gender differences exist. These results are similar for other outcome variables; discussion follows about all specific academic areas.

Effects of Parental Involvement on Reading Achievement

Figure 9 presents the effects of parental involvement and other variables on reading achievement; Table 2 presents the direct, indirect, and total effects of each variable on reading achievement, along with the $\underline{R}^2$ and $\underline{R}$.

Parental involvement, as hypothesized, had a moderate direct (.119) and total effect (.116) on reading achievement. Parents who discuss school activities and have high educational aspirations apparently can help improve their children's reading achievement.

Previous learning had the largest direct effect (.311) on reading achievement. SES had a moderate direct effect (.197) and a large total effect (.285) on reading.

Females had slightly higher reading achievement than males as suggested by the small direct (.052) and total effects (.095) of gender on reading. This result is different from the result of overall academic achievement; males had higher overall achievement than females.

Finally, parents' language proficiency (direct effect = .041, total effect = .032) and home rules (-.034) did not influence reading achievement. As in the overall achievement model it appears that parent's language proficiency and home rules do little to explain Mexican-American students' reading achievement.

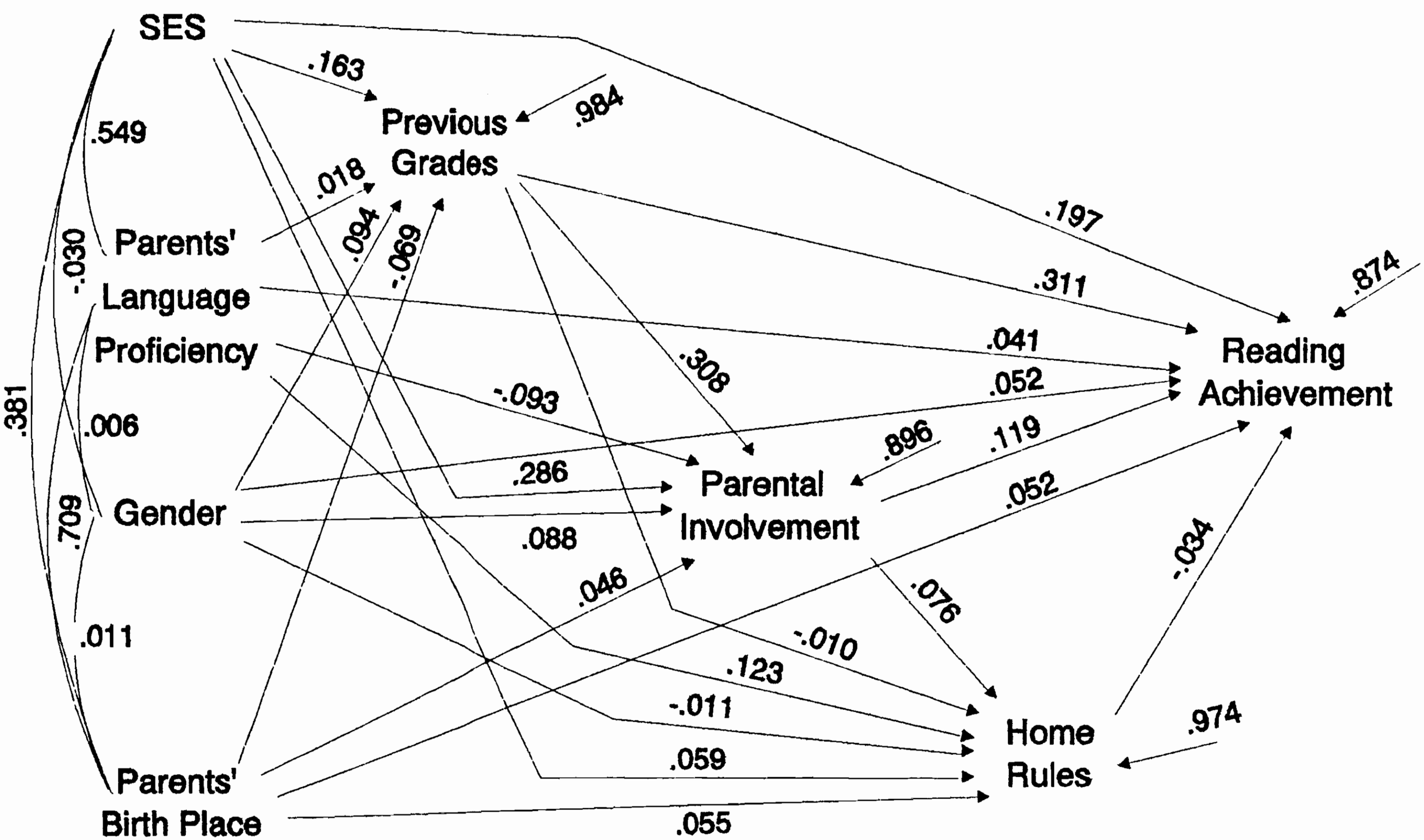


Figure 9. Effects of Parental Involvement on Eighth Grade Mexican-American Children's Reading Achievement.

Table 2
Direct, Indirect, and Total Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth Place, Previous Grades, Parental Involvement, and Home Rules on Reading Achievement.

	Effects		
Variable	Direct	Indirect	Total
SES	.197 *	.088 *	.285 *
	(2.567)	(-.035)	(3.692)
Parents' L. Prof.	.041	-.009	.032
	(.252)	(-.051)	(.201)
Gender	.052 *	.043 *	.095 *
	(.930)	(.765)	(1.695)
Parents' Birth Pl.	.052	-.020	.032
	(1.026)	(-.405)	(.621)
Previous Grades	.311 *	.036 *	.347 *
	(3.727)	(.414)	(4.141)
Parental Inv.	.119 *	-.003	.116 *
	(1.321)	(-.028)	(1.293)
Home Rules	-.034	.000	-.034
	(-1.152)	(.000)	(-1.152)

Note: Standardized coefficients are listed first; unstandardized coefficients are listed in parentheses underneath. * $p < .05$. $R = .486$, $R^2 = .237$.

Effects of Parental Involvement on Math Achievement

Figure 10 presents the influences of the variables on each other and Table 3 presents the direct, indirect, and total effects of each variable on math achievement. The $\underline{R}^2$ and $\underline{R}$ are found on Table 3.

Parental involvement had a small positive influence (direct = .079, total effects = .076) on math achievement. Previous grades had the largest direct (.348) and total effect (.372) on math achievement, followed by SES, with a moderate direct (.228) and large total effect (.307). It appears that parents who are involved, who discuss school activities and who have high educational aspirations - can have a small positive influence on their children's math achievement.

Interestingly, Mexican-American students whose parents were born outside of the U.S. had better math achievement than those students whose parents were born in the U.S. (direct effect = -.054 and total effect = -.079). This is a surprising finding because the correlations between the five achievement areas and parents' birth place was positive, implying that students whose parents were born in the U.S. achieve at higher levels than students whose parents were born outside of the U.S. A review of the model helps explain these paradoxical findings. The correlations between exogenous variables are high (parents' birth place and parents' language proficiency (.709); parents language proficiency and SES (.549); and parents' birth place and SES (.381)). This implies that there is a strong relation between a parents' birth place, their language proficiency and their SES. But, when controlling for all other variables in the model, students whose parents were born outside of the U. S. achieve at slightly higher levels in math

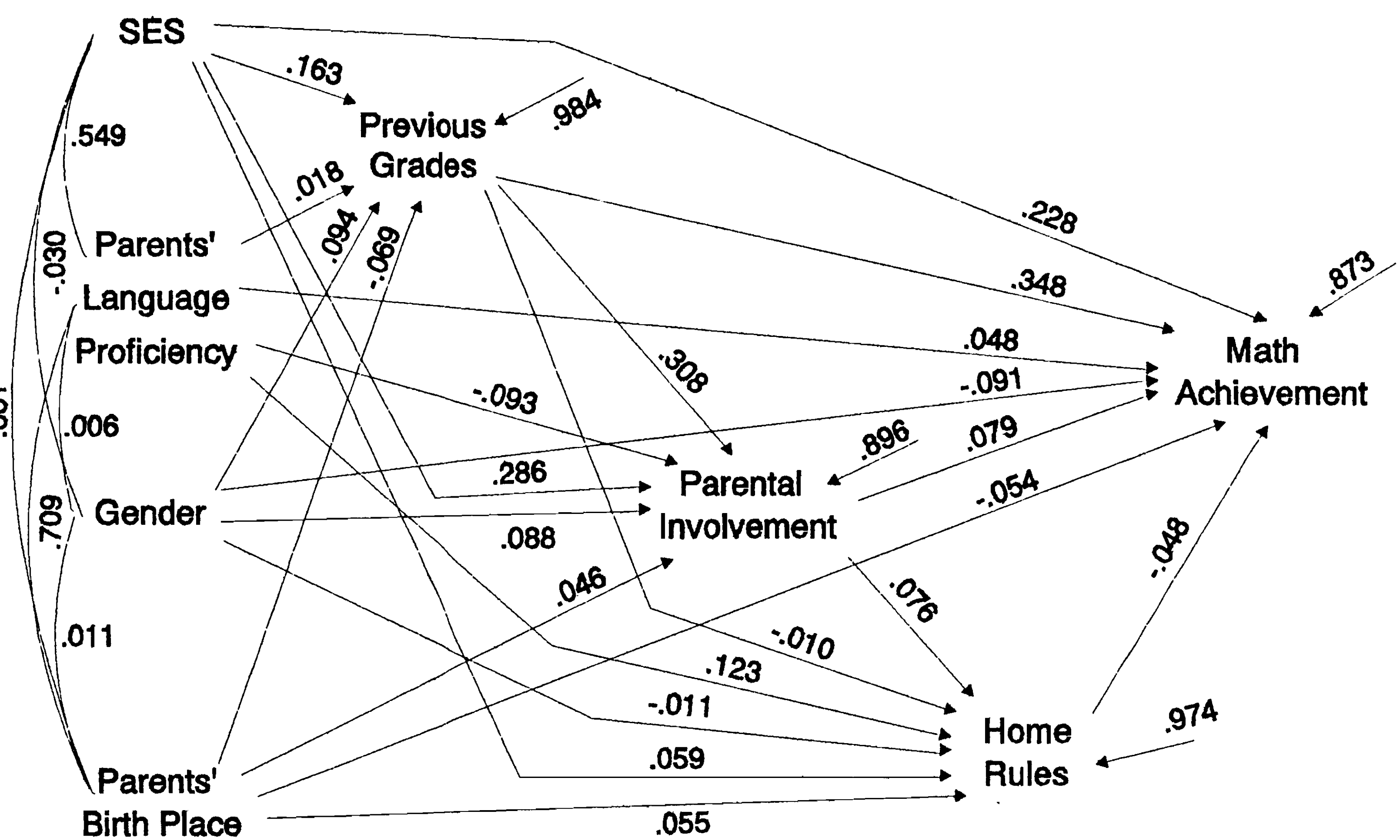


Figure 10. Effects of Parental Involvement on Eighth Grade Mexican-American Children's Math Achievement.

Table 3
Direct, Indirect, and Total Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth Place, Previous Grades, Parental Involvement, and Home Rules on Math Achievement.

	Effects		
Variable	Direct	Indirect	Total
SES	.228 *	.079 *	.307 *
	(2.786)	(.970)	(3.756)
Parents' L. Prof.	.048	-.006	.042
	(.280)	(-.035)	(.245)
Gender	-.091 *	.042 *	-.049
	(-1.550)	(.722)	(-.828)
Parents' Birth Pl.	-.054	-.025	-.079
	(-1.009)	(-.460)	(-1.469)
Previous Grades	.348 *	.024 *	.372 *
	(3.922)	(.264)	(4.186)
Parental Inv.	.079 *	-.003	.076 *
	(.855)	(-.037)	(.818)
Home Rules	-.048	.000	-.048
	(-1.550)	(.000)	(-1.550)

Note: Standardized coefficients are listed first; unstandardized coefficients are listed in parentheses underneath. * $p < .05$. $R = .487$, $R^2 = .237$.

than students whose parents were born in the U.S. One possible explanation for lower achievement of Mexican-American students whose parents were born in the U.S. may be their SES and not where their parents were born. Further research is warranted regarding this finding.

Gender of the student (direct = -.091, total = -.049) does not influence math achievement. This finding is somewhat different from overall academic and reading achievement. Previous results showed that males' overall academic achievement was higher than for females', and that females' reading achievement was higher than for males.

Parent's language proficiency (.048) and home rules (-.048) did not influence math achievement. This finding is consistent with the results of overall academic and reading achievement.

Effects of Parental Involvement on Science Achievement

Parental involvement influenced science achievement (direct effect = .099, total effect = .097). Consistent with other models previous grades had the largest direct (.295) and total (.325) effect on science achievement. SES had a moderate direct (.155) and total (.234) effect on science achievement. Again, these results are similar with those found when the dependent variables were overall academic achievement, reading achievement, and math achievement.

Males had higher science achievement than females (direct effect = -.119), yet when all other variables were controlled the effect (-.080) was reduced. Gender differences are similar to that found for overall academic achievement gender result and for math achievement, but not similar to those for reading and math achievement.

Parents' language proficiency (.039), parents' birth place (.024), and home rules (-.030) did not demonstrate any meaningful influence on science achievement. Again, these results are generally similar to those found when overall academic achievement, reading, and math achievement were the dependent variables.

Figure 11 presents the influences of the variables on each other and Table 4 presents the direct, indirect, and total effects of each variable on science achievement. The $\underline{R}^2$ and $\underline{R}$ are found on Table 4.

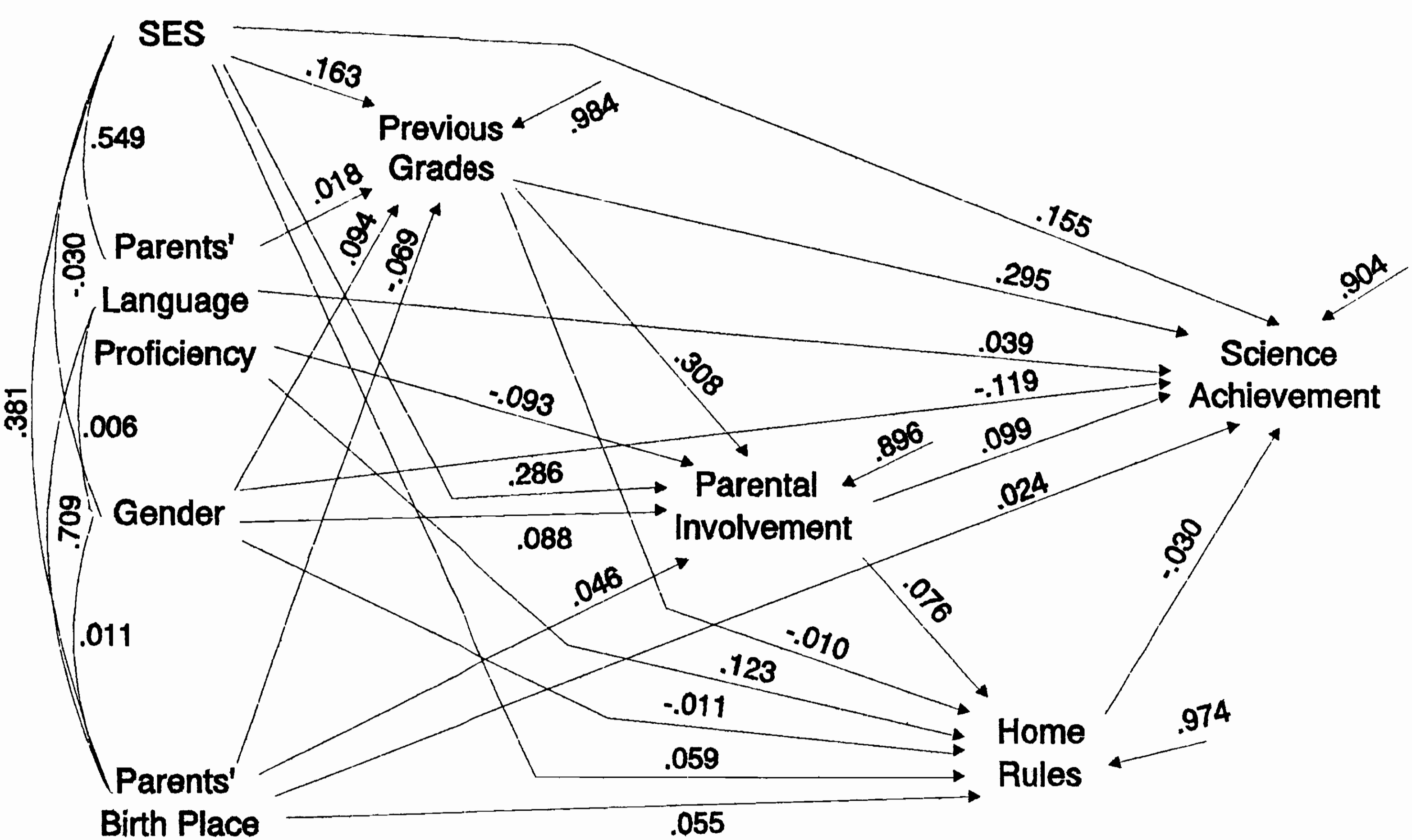


Figure 11. Effects of Parental Involvement on Eighth Grade Mexican-American Children's Science Achievement.

Table 4
Direct, Indirect, and Total Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth Place, Previous Grades, Parental Involvement and Home Rules on Science Achievement.

	Effects		
Variable	Direct	Indirect	Total
SES	.155 *	.079 *	.234 *
	(1.955)	(.985)	(2.944)
Parents' L. Prof.	.039	-.007	.032
	(.252)	(.050)	(.194)
Gender	-.119 *	.039 *	-.080 *
	(-2.076)	(-.681)	(-1.395)
Parents' Birth Pl.	.024	-.020	.005
	(.462)	(.375)	(.087)
Previous Grades	.295 *	.030 *	.325 *
	(3.421)	(.343)	(3.764)
Parental Inv.	.099 *	-.002	.097 *
	(1.092)	(-.024)	(1.068)
Home Rules	-.030	.000	-.030
	(-.998)	(.000)	(-.998)

Note: Standardized coefficients are listed first; unstandardized coefficients are listed in parentheses underneath. * $p < .05$. $R = .428$, $R^2 = .183$.

Effects of Parental Involvement on Social Studies Achievement

Figure 12 presents the influences of the variables on each other and Table 5 presents the direct, indirect, and total effects of each variable on science achievement. The $\underline{R}^2$ and $\underline{R}$ are found on Table 5.

As for most other achievement areas parental involvement had a moderate direct (.124) and total (.120) effect on social studies achievement. Previous grades had the largest direct (.276) and total effect (.314) on social studies achievement, and SES had a moderate direct (.186) and large total effect (.268). Again, these results are consistent with those found when the dependent variables was overall academic achievement, and with those for reading, math, and science achievement.

Gender of the student had mixed results. Based on the direct effect (-.071), males had higher social studies achievement than females, but when other variables in the model were controlled, there was no meaningful gender difference (total effects -.031).

Parents' language proficiency (direct effect = .060) and parents' birth place (direct effect = .007) did not effect social studies achievement.

Finally, and paradoxically, fewer home rules appear to lead to higher social studies achievement (-.053), when other variables are controlled. Social studies was the <u>only</u> outcome that was influenced by home rules and its influence was negative.

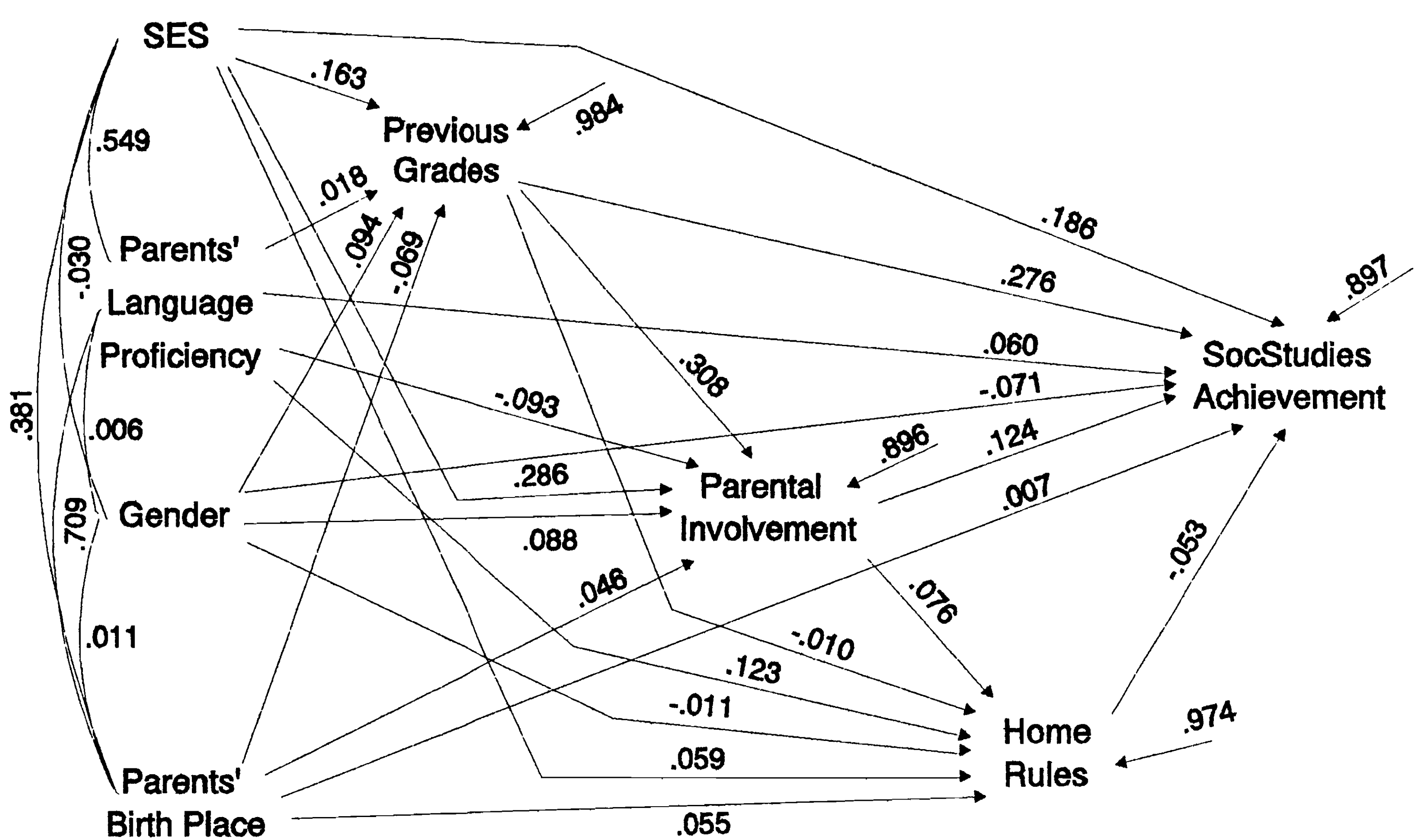


Figure 12. Effects of Parental Involvement on Eighth Grade Mexican-American Children's Social Studies Achievement.

Table 5
Direct, Indirect, and Total Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth Place, Previous Grades, Parental Involvement, and Home Rules on Social Studies Achievement.

	Effects		
Variable	Direct	Indirect	Total
SES	.186 *	.082 *	.268 *
	(2.598)	(1.188)	(3.786)
Parents' L. Prof.	.060	-.012	.048
	(.404)	(-.075)	(.325)
Gender	-.071 *	.040 *	-.031
	(-1.385)	(.785)	(-.599)
Parents' Birth Pl.	.007	-.019	-.012
	(.163)	(.083)	(-.246)
Previous Grades	.276 *	.038 *	.314 *
	(3.589)	(.552)	(4.141)
Parental Inv.	.124 *	-.004 *	.120 *
	(1.524)	(-.231)	(1.293)
Home Rules	-.053 *	.000	-.053 *
	(-1.977)	(.000)	(-1.977)

Note: Standardized coefficients are listed first; unstandardized coefficients are listed in parentheses underneath. * $p < .05$. $R = .423$, $R^2 = .196$.

In conclusion, when examining the influences of parental involvement and other variables on specific academic areas the majority of the results are similar. Parental involvement does positively influence all specific academic areas, along with SES and previous grades. Gender differences were evident; males with slightly higher math, science, and social studies achievement than with females and females with slightly higher reading achievement than males. Parents' language proficiency influenced math achievement, although it did not influence other academic areas. Home rules appeared to have a small influence on social studies achievement.

Influences on Parental Involvement

The previous five sections of this chapter have demonstrated that parental involvement does appear to have a positive influence on Mexican-American eighth graders' academic achievement. If parental involvement improves Mexican-American achievement, we need to know what affects Mexican-American parental involvement. Table 6 presents the direct, indirect, and total effects of the preceding variables in the model on parental involvement. Figures 8 through 12, previously presented, display the path coefficients between all variables and parental involvement. It should be noted that the effects on parental involvement are the same for all models. The only differences are for the achievement outcomes.

Previous grades (.305) and SES (.286) had strong positive influences on parental involvement. This finding suggests that students who have in the past received high grades and come from high SES homes tend to have parents who

Table 6
Direct, Indirect, and Total Effects of SES, Parents' Language Proficiency, Gender, Parents' Birth Place, Previous Grades, on Parental Involvement.

	Effects		
Variable	Direct	Indirect	Total
SES	.286 *	.050 *	.336 *
	(.324)	(.056)	(.380)
Parents' L. Prof.	-.093 *	.005	-.088 *
	(-.050)	(.003)	(-.047)
Gender	.087 *	.029 *	.116 *
	(.137)	(.045)	(.182)
Parents' Birth Pl.	.045	-.021 *	.024
	(.077)	(-.036)	(.041)
Previous Grades	.305 *	.000	.305
	(.318)	(.000)	(.318)

Note: Standardized coefficients are listed first; unstandardized coefficients are listed in parentheses underneath. * $p < .05$. $R = .423$, $R^2 = .196$.

discuss school activities <u>with</u> their children and have high educational aspirations <u>for</u> their children. Also, parents of girls appear more involved than parents of boys (.087). Interestingly, parents' birth place did not influence their parental involvement (.045).

Perhaps most interesting is the path from parents' language proficiency to parental involvement. The path from parents' language proficiency (-.093) suggests that as parents become more proficient in English their parental involvement decreases! This result suggests that parents who are less proficient in English discuss school activities more frequently and have higher educational aspirations for their children than do parents who are proficient in English. The correlations between parents' language proficiency and parents' birth place (.709) and SES (.549) are high, indicating the important role that parents' language proficiency, SES, and parents' birth place play in unison. Mexican-American persons born outside of the U.S. tend to belong to lower SES groups and tend to be less proficient in English. But the negative effect of parents' language proficiency suggest that these parents are indeed involved in discussing school activities and have high educational aspirations for their children.

Summary and Conclusions

The most salient finding of this research is that parental involvement does appear to influence positively the academic achievement of eighth grade Mexican-American students. Mexican-American parents who spend time discussing school activities with their children and who have high educational aspirations for their children may influence their children's academic achievement. This type of parental involvement appears to affect overall academic achievement, as well as reading, math, science, and social studies achievement. Therefore, parental involvement is one factor which should be considered in an effort to increase the academic achievement of Mexican-American children.

Parental involvement is, in turn, strongly influenced by parents' SES and by students' previous achievement. Parents who have high SES and whose children obtain high grades tend to be more involved: they discuss school activities and have high educational aspirations for their children. Parents are also more involved with female children than with male children.

Lynch and Stein (1987) believe that parents' language proficiency will influence parental involvement and academic achievement. In contrast, this research suggests that parents' language proficiency does not influence academic achievement to any meaningful extent, but does influence parental involvement. However, these results suggest that as parents become more proficient in English their parental involvement decreases rather than increases. These effects are small, however, and require further study.

By far the strongest influence of academic achievement for Mexican-American students was previous grades, a common indicator for previous learning and achievement, learning aptitude, and cognitive ability. These results are consistent with other research, which suggests that previous learning affects future learning (Duncan et al., 1972).

As with other research, the SES of the family is another influence on academic achievement. Contrary to recent claims by the U. S. Department of Education (1987), the SES of a family does appear to influence a child's academic achievement, and is not canceled out by parental involvement. But the influence of SES on academic achievement may be reduced by increasing parental involvement.

Although it is commonly believed that family rules about studying, GPA, TV, and chores will increase student's academic achievement (cf. Dornbusch et al., 1987), this research offers little support for that notion. The family rules variable did not influence most measures of academic achievement and rules may even have a small <u>negative</u> influence on social studies.

Much has been written concerning the effects of gender on academic achievement (e.g. Ethington, 1991; Wolfle & Ethington, 1986). This research found Mexican-American males had higher overall academic, math, science, and social studies achievement, whereas females had higher reading achievement.

Parents' birth place only influenced math achievement; children whose parents were born outside of the U. S. had slightly higher math achievement than children whose parents were born in the U.S. A closely related variable, parents' language proficiency, did not influence <u>any</u> area of academic achievement.

Implications and Recommendations for Future Research

The research findings presented here suggest that parental involvement is indeed an important influence on Mexican-American students' overall academic achievement and on achievement in specific academic areas. It is important for parents and educators to acknowledge the value of parents discussing day to day activities with their children and of having high educational aspirations for their children. It appears that parents indeed can make a difference in a child's academic achievement. Educators and policy makers need to continue to support parents in discussing school activities and encourage parents to have high educational aspirations for their children.

Parents need to understand the educational processes of the school that their child attends, and stay abreast of classroom activities. By communicating with teachers and their children, parents can gain knowledge about "daily activities" and about how their children are doing. Teachers and administrators need formally and informally to keep parents up-to-date about children's progress in order to encourage greater academic skill development and assist in guiding Mexican-American students into appropriate choices of academic coursework (higher level math and science courses). Although Mexican-American parents may have high educational aspirations for their children, without appropriate college preparation course work it is unlikely that those aspirations will be realized.

Another result that has educational implications is that as parents become more proficient in English, controlling for SES and previous grades, academic achievement does not increase. In fact, this research suggest that as parents become more proficient in English their parental involvement slightly decreases. Therefore, programs designed to assist Mexican-American parents to increase their English speaking skills should not be viewed as a means of increasing parental involvement or increasing academic achievement for Mexican-American children.

Limitations of this research should be noted. First, this research used a structural equations model to investigate the influence of parental involvement on academic achievement. The effects of parental involvement were estimated by studying existing variations. The research presented did not study parental involvement by manipulating or varying parental involvement treatments between a control group and an experimental group, rather it reports results from analyses where no manipulation was done. When using this method it is necessary to note that there may be some variables outside of the model that influence both parental involvement and academic achievement, leading to problems or threats to internal validity which threaten the causal conclusions. Therefore, models should always be based on strong theoretical bases and previous research. NELS 88 is an extant data set that is well designed and offers much to the researcher, but as noted previously, it does not have the commonly used indicators of cognitive ability that other extant data sets have. Finally, the Mexican-American students used in this research may be the largest sample used in research which focuses only on this group. NELS 88 oversampled Hispanics students (due to previous NCES difficulty in follow up), therefore these Mexican-American students may not be representative of students in general.

This research, using a structural equations model, has answered a number of research questions but has also generated questions for future research. For example, the model used in this research could be analyzed using latent variable structural equation analysis (e.g. LISREL). LISREL would allow a test of the model to the data and would control for one of the limitations of this research - the unreliability of the variables in the model.

A multi-sample LISREL analysis would also be worthwhile. Other ethnic groups (e.g., white, black, other Spanish speaking groups or other minorities) could be analyzed using the model developed for this research. It could be determined if parental involvement has the same influence on academic achievement for other ethnic groups as the results reported here.

Results of this research suggest that parental involvement is influenced by the gender of the child. Further research using the LISREL multi-sample technique could help determine if the results reported here are equally valid for males and females.

When NELS 90 becomes available, these analyses could be expanded and reanalyzed in a number of ways. This analysis could use the new academic achievement test results as outcome variables, while using 88 achievement test results as a measure of previous achievement. A cognitive variable also could be developed using previous grades from 88 and 90 or by using achievement test results from 88 and 90 as a cognitive measure and 90 grades as the outcome variable.

This research raises as many questions as it answers. The influence that parents' birth place has on academic achievement could be refocused and analyzed by determining what generation (in U.S.) these students are and what role that has on parental involvement and academic achievement. The role that parents' educational aspirations has on academic achievement would be another fruitful research area. The lack of influence family rules has on academic achievement is troublesome and warrants further investigation.

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Appendix A

Description of NELS 88 Items and Values Used to Create Variables in the Models

Table A

Description of NELS 88 Items and Values Used to Create Composite Variables Included in the Models. Note: the number of survey items used in a composite follows the composite in brackets. Variables from parent file are noted.

Composite Variables	Nels 88 Items	Values
SES (5) (Primarily from parent file)	Father's Occupational Status Mother's Occupational Status Father's Education Mother's Education Family Income	Mean of z-scores Created by NCES
Parents' Language Proficiency (4) (From parent file)	How Well Respondent Understands English	1 = not at all well 2 = not well 3 = well 4 = pretty well 5 = very well
	How Well Respondent Speaks English	1 = not at all well 2 = not well 3 = well 4 = pretty well 5 = very well
	How Well Respondent Reads English	1 = not at all well 2 = not well 3 = well 4 = pretty well 5 = very well
	How Well Respondent Writes English	1 = not at all well 2 = not well 3 = well 4 = pretty well 5 = very well
Gender (1)	Sex of Respondent	1 = Male 2 = Female
Parents' Birth Place (2) (From parent file)	8th Grader's Mother's Birthplace	1 = Born outside the USA 2 = Born in the USA
	8th Grader's Father's Birthplace	1 = Born outside USA 2 = Born in USA

(table continues)

Composite Variables	Nels 88 Items	Value
Previous Grades (4)	English Grades from Grade 6 to Now	1 = mostly below D 2 = mostly D's 3 = mostly C's 4 = mostly B's 5 = mostly A's
	Math Grades from Grade 6 to Now	1 = mostly below D 2 = mostly D's 3 = mostly C's 4 = mostly B's 5 = mostly A's
	Science Grades from Grade 6 to Now	1 = mostly below D 2 = mostly D's 3 = mostly C's 4 = mostly B's 5 = mostly A's
	SStudies Grades from Grade 6 to Now	1 = mostly below D 2 = mostly D's 3 = mostly C's 4 = mostly B's 5 = mostly A's
Parental Involvement: Student-Parent Discussion of School Activities (5)	Talk to Father about Planning H.S. Program	1 = not at all 2 = once or twice 3 = 3 or more times
	Talk to Mother about Planning H.S. Program	1 = not at all 2 = once or twice 3 = 3 or more times
	Discuss Programs at School with Parents	1 = not at all 2 = once or twice 3 = 3 or more times
	Discuss School Activities with Parents	1 = not at all 2 = once or twice 3 = 3 or more times
	Discuss Things Studied in Class with Parents	1 = not at all 2 = once or twice 3 = 3 or more times

(table continues)

Composite Variables	Nels 88 Items	Values
Parental Educational Aspiration (2)	How Far in School Respondent's Father wants Student to Go	1 = Less than H.S. 2 = Finish H.S. 3 = Voc,Trd, Bus
after H.S.		4 = Attend College 5 = Finish College 6 = Higher Sch after college
	How Far in School Respondent's Mother wants Student to Go	1 = Less than H.S. 2 = Finish H.S. 3 = Voc,Trd, Bus after H.S. 4 = Attend College 5 = Finish College 6 = Higher Sch after college
Home Rules (7) (From parent file)	Family Rule about Pgms Child May Watch	1 = no 2 = yes
	Family Rule about How Early/Late May Watch TV	1 = no 2 = yes
	Family Rule about How Many Hrs Child May Watch TV	1 = no 2 = yes
	Family Rule about How Many Hrs Watch TV on School Days	1 = no 2 = yes
	Family Rule about Maintaining Grade Average	1 = no 2 = yes
	Family Rule about Doing Homework	1 = no 2 = yes
	Family Rule about Doing Household Chores	1 = no 2 = yes

(table continues)

Composite Variables	Nels 88 Items	Values
Overall Academic Achievement (4)	Reading Standardized Score Math Standardized Score Science Standardized Score SStudies Standardized Score	Mean of T-scores
Reading Achievement (1)	Reading Standardized Score	T-score
Math Achievement (1)	Math Standardized Score	T-score
Science Achievement (1)	Science Standardized Score	T-score
Social Studies Achievement (1)	SStudies Standardized Score	T-score

Appendix B

Correlations, Means, and Standard Deviations for Variables in the Model

Table B.1.
Correlations, Means, and Standard Deviations for Variables in the Model

Variable	1	2	3	4	5	6	7
1. Previous grades	1.000						
2. Parental involvement	.349	1.000					
3. Family rules	.032	.105	1.000				
4. SES	.144	.293	.169	1.000			
5. Parents' lang prof	.059	.115	.203	.549	1.000		
6. Gender	.090	.105	-.005	-.030	.006	1.000	
7. Parents' birth place	.005	.089	.172	.381	.709	-.011	1.000
M	3.702	.015	1.738	-.691	3.856	1.530	1.571
SD	.750	.782	.258	.690	1.450	.499	.455

Note. *N* = 1,714; minimum pairwise *N* = 1,359.

Table B.2.
Variable Correlations, Means, and Standard Deviations for all Academic Achievement Areas.

	Achievement				
Variable	Overall	Reading	Math	Science	SStudies
Previous grades	.433	.387	.401	.343	.342
Parental involvement	.310	.293	.253	.238	.268
Family rules	.030	.039	.012	.029	.015
SES	.343	.312	.301	.256	.292
Parents' lang prof	.214	.212	.154	.164	.187
Gender	-.028	.086	-.057	-.087	-.038
Parents' birth place	.141	.162	.068	.118	.125
M	46.010	46.199	45.796	46.096	45.929
SD	7.592	8.953	8.446	8.685	9.737

Note. See Table 1 for the correlations, means, and standard deviations for variables 1 through 7.

Appendix C

Standard Errors for Models

Table C.1.
Standard Errors for Variables in the Overall Achievement Model. These values correspond to Figure 8.

Influences	Outcome			
	PreGrads	ParInv	FRules	Overall
PreGrads		.025	.028	.025
ParInv			.029	.026
FRules				.024
SES	.032	.030	.033	.029
PELP	.042	.038	.042	.036
Gender	.027	.025	.027	.023
PBirthPl	.038	.035	.038	.033

Table C.2.

Standard Errors for Variables in the Reading Achievement Model. These values correspond to Figure 9.

Influences	Outcomes			
	PreGrads	ParInv	FRules	Reading
PreGrads		.025	.028	.025
ParInv			.029	.026
FRules				.024
SES	.032	.030	.033	.030
PELP	.042	.038	.042	.037
Gender	.027	.025	.027	.024
PBirthPl	.038	.035	.038	.034

Table C.3.
Standard Errors for Variables in the Math Achievement Model. These values correspond to Figure 10.

Outcomes Influences	PreGrads	ParInv	FRules	Math
PreGrads		.025	.028	.025
ParInv			.030	.027
FRules				.024
SES	.032	.029	.033	.030
PELP	.042	.038	.042	.037
Gender	.027	.024	.027	.024
PBirthPl	.038	.035	.038	.034

Table C.4.
Standard Errors for Variables in the Science Achievement Model. These values correspond to Figure 11.

Influences	Outcomes			
	Pregrads	Parinv	Frules	Science
PreGrads		.025	.028	.026
ParInv			.030	.027
FRules				.025
SES	.032	.029	.033	.031
PELP	.042	.038	.042	.039
Gender	.027	.024	.027	.025
PBirthpl	.038	.035	.038	.035

Table C.5.
Standard Errors for Variables in the Social Studies Achievement Model. These values correspond to Figure 12.

Influences	Outcomes			
	PreGrads	ParInv	FRules	SStudies
PreGrads		.025	.028	.026
ParInv			.030	.027
FRules				.025
SES	.032	.029	.033	.031
PELP	.042	.038	.042	.038
Gender	.027	.024	.027	.025
PBirthPl	.038	.038	.038	.035

VITA

Patricia Berg Keith

Patricia Berg Keith was born in St. Paul, Minnesota and educated in the parochial school systems of St. Paul and Duluth, Minnesota. After completing high school at Duluth Cathedral, she attended and graduated from the University of Minnesota with a Bachelor of Arts in Social Work, Criminology, and Psychology. Patricia traveled in throughout Europe, the Scandinavian Countries, Greece, and the Middle East, and then earned her Master of Science in School Psychology at the University of Wisconsin. She worked for a number of years as a school psychologist before entering the Peace Corps. Upon completion of her service in Quito, Ecuador, South America, she moved to Northern Virginia where she was employed by the Peace Corps Headquarters, the American Red Cross Headquarters, and various school systems.

During her doctoral studies Patricia was employed full time as a School Psychologist in Fairfax County, Virginia, and later employed by Virginia Tech. At Virginia Tech, she worked in the College of Education, teaching and supervising student teachers, instructing students in the Educational Research Statistics Lab, writing grants, and evaluating Even Start Programs for regional school systems. Currently she is employed by Virginia Tech as a Senior Research Associate in the College of Education at the Institute for the Study of Exceptionalities, where she is project director for the <u>Special Education Class Size and Class Mix Research Project</u>.

Patricia Keith's professional interests include educational research and program evaluation, educational outcomes, and international development.