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EFFECT OF PARENT INVOLVEMENT ON MATH AND READING ACHIEVEMENT OF YOUNG CHILDREN: EVIDENCE FROM THE EARLY CHILDHOOD LONGITUDINAL STUDY

A Dissertation

Submitted to the School of Graduate Studies and Research

In Partial Fulfillment of the

Requirements for the Degree

Doctor of Education

Nurun N. Begum

Indiana University of Pennsylvania

August 2007

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Parental involvement and home cognitive stimulation have been advocated as strong indictors to the academic achievement of a child. A growing body of literature indicates that parental education, parenting pattern and socio-economic status of the family have an influence on the academic achievement of a child.

The purpose of this study was to examine the parenting practices in families of different income and ethnicities, and their impact on the math and reading achievement of young children across the school years by using existing data from the Early Childhood Longitudinal Study (ECLS), Kindergarten class of 1998-99 (NCES 2006-035). Theoretical and conceptual frameworks were drawn from Social capital theory and Ecological perspectives.

The findings of this research indicate that family SES has a significant influence on the math and reading achievement of all children in kindergarten, first grade, third grade and fifth grade. Math and reading performance of the children in kindergarten, first grade, third grade and fifth grade have varied and related to the parent participation in home enrichment activities. Involvement in both inside and outside home enrichment activities did not bring the same benefit for the children in below the poverty or above the poverty category in all ethnic groups. No parent involvement variable indicates any significant relation for the Asian children's' math and reading performance. For the

African American and Hispanic children the parent involvement variables were as significant as for the European American children. However, it seems to be that the minority children would benefit more by a higher level of parent involvement in the education process of their children.

The home (parent involvement), school, and community partnership could create a wide range of opportunity for the poor and minority children. From the policy intervention perspectives, the importance of home, school and community partnership is discussed, and suggestions are provided to increase a success through home, school and community collaborative effort.

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I am delighted to have a very supportive dissertation committee and would like to say thanks to my committee members. My dissertation advisor Dr. Wenfan Yan inspired me and gave me rare opportunity to use ELCS- K to fifth data for my dissertation. He guided my thinking and gave me ideas and literature to shape my dissertation work. Without his support, motivation, encouragement and help, it was impossible for me to carry on this work. My heart-full thanks goes to him.

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CHAPTER I

INTRODUCTION

America is a land of immigrants (Gay, 2004; Ogbu, 1994) and people from different parts of the world come to America and create diversity in the American society. For that reason, it is impossible to protect the school and social institutions in America from the pressure of the diversity. The relationship of diverse communities with schools demands attention by the administrators, practitioners, teachers, and policymakers (Barrera & Warner, 2006; Paul, 2006; Giacchino-Baker & Piller, 2006; Glenn, 2005). Education has been considered as a powerful weapon against poverty and social inequality (Lee & Bowen, 2006). However inequality itself exists within the education system in America. Teachers, educators, and policymakers continuously express concerns about the crisis of the public school system in America (Yan & Lin, 2005; Lee & Bowen, 2006).

Research has indicated that there is a high achievement gap among the school children in America (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994; 1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001). The large achievement gap among American children and low international ranking of American students' achievement push educators and policymakers to think about an urgent solution to the present crisis.

Parent involvement has been advocated as a resource for the academic success of children (Yan & Lin, 2005; Barrera & Warner, 2006; Paul, 2006; Giacchino-Baker & Piller, 2006; Glenn, 2005). A small number of researchers indicated that parent involvement is highly associated with the school achievement of children (Yan & Lin,

2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller, Stage & Kinzie 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998; Schneider & Lee, 1990). Parent motivation, attitude, support, and commitment influence children to do well in the school (Ogbu, 1994; 1987, Yan & Lin, 2005; Lee & Bowen, 2006). Although parent involvement is equally important for all children the nature of parent involvement differs according to race/ethnic status, parent education, economic status of parents, and family structure (Schneider & Lee, 1990; Paratore, Hindin, Krol-Sinclair, & Duran, 1999).

Decades of research has provided the evidence that the minority children do not enjoy the social benefits that the majority children do. Low academic performance (Yan & Lin, 2005; Kao, 1995; Schneider & Lee, 1990), negative attitudes towards the majority culture (Ogbu, 1994; 1987), less parent connectedness (Goyette & Xie, 1999), low level of parent education (Yan & Lin, 2005; Lee & Bowen, 2006; Kao, 1995), less education expectation (Kao, 1995), and high crime rate put minority ethnic groups in a risk situation. A handful of research has indicated that parent's high level of education, family income, and family structure are highly associated with the academic performance of the children (Yan & Lin, 2005; Padilla & Gonzaalez, 2001; Lee & Bowen, 2006; Porter, 1999).

Parent involvement is very important to the academic life of a child. A Low level parent education and economic status do not work against the performance of the children if parents have high motivation and aspiration (Ogbu, 1994; 1987). For example: "Life is so good" is an autobiography where George Dowson, an African American man,

described how as an illiterate person he has reared his child. He never let his child understand his inability to read and write. He created a home learning environment in a way where his child was responsible to report his homework to him everyday. He always asked his son either to read the homework to him or he acted in a way that his son thought he was reading his paper. His role in the home influenced his son to do well in school. His son became academically and economically successful in his life. Later in his life, his son came to know that his father was illiterate and his son helped him to become literate at the age of 98. As a parent Dowson was able to transfer his power to his child which helped his child do well in the school.

According to research parent's involvement in home, school and community positively and strongly influences the children to do well in school (Yan & Lin, 2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller, Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998). However, we need to know what types of activities in home, school, and community influence the academic performance of children. We need to find out how parents can get involved more in school and community activities. We also need to explore what types of parent activities are most effective in which cultural framework. We need to examine the academic performance of a child by considering home, school, and community and the social contexts.

Statement of the Problem

Parent involvement and its impact on the educational attainment of the children have been discussed in education research for the last couple of decades. However, most

of the research about parent involvement emphasizes children in secondary education or adolescents (Yan & Lin, 2005; Okagaki, Frensch, & Gordon, 1995; Padilla & Gonzaalez; 2001; Rumberger & Larson, 1998). Only a very few researchers gave emphasis to young children. Moreover, only a small amount of research looked at the issue of parent involvement and childen's education attainment in different ethnic groups. (Ogbu, 1994; 1987; Okagaki, frensch, & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Scheider & Lee, 1990; Stanton-Salazar & Downbrust, 1995; Paratore, Hindin, Krol-Sinclair, & Duran, 1999; Rodriguez-brown, Li, & Albom, 1999). Again most of these research considered European American, Asian, and Mexican ethnic groups; only a few research studies have been conducted on African American children. Research indicated that African American children reported lower family connectedness and poorer academic performance than European American and Asian ethnic groups (Ogbu, 1994; 1987; Yan & Lin 2005).

The expectation and aspiration of children depends on the norms and values of the family and culture. Ogbu (1994) noted that the African American community and culture works against the school performance of their children. The American public school and its curriculum are developed within a European American cultural framework and African American children show difficulty in accepting the norms of European American culture. Though research has shown that the acceptance of public school norms is associated with the academic performance of the children (Ogbu, 1994; 1987), African American parents show very negative attitude towards the public school norms in America. For example: if an African American child speaks proper English, peer and community show very negative attitude towards the child. They consider that the child is

acting like White people and neglecting his/her own culture. This creates a psychological pressure for the child which also has a negative impact on the performance of that child. Because of this type of situation more research should be done on African American children. The policymakers need more information about African American ethnic groups to create a more appropriate intervention policy which will best fit them. At the same time the information about the nature of the parenting, home resource, family values, school involvement and community networks and their association with the academic performance of the children in different ethnic groups will help policymakers to create new intervention policies for all children in different ethnic groups.

The economic status and academic performance of children from different ethnic groups are highly associated (Schneider & Lee, 1990; Paratore, Hindin, Krol-Sinclair, & Duran, 1999). However, there is little research that has investigated the nature of parent involvement by the economic status across different racial and ethnic groups. Research has indicated that parents in low economic status give less time and are involved less in different activities with their children in home, school and community (Lee & Bowen, 2006; Muller, Stage & Kinzie, 2001; Orland, 1990; Porter, 1999; Rummberger & Larson, 1998). However, most of the research have been conducted based on small sample data. The data of these research are not nationally representative and comprehensive. There is a urgent need to describe how low economic status of parents affects the nature of parent involvement and the academic performance of the children by using national level data. Not only that, more explanation needs to be given about how parenting differs in different ethnic groups based on the nature of their economic status.

Rationale of the Study

At present in America, parents, educators, policymakers and researchers assert the value of positive partnerships between home, school and community. Research has constantly reflected the positive view of active parent involvement, and the American government increased the support for parent involvement in early childhood and elementary education (Barrera & Warner, 2006; Paul, 2006; Giacchino-Baker & Piller, 2006; Glenn, 2005; Yan & Lin, 2005). Many children in public school in America come from single parent households, poor families, less educated parents, and drug abused and alcoholic parents. Recently the reality of American family structure has demanded an increase in family involvement to facilitate the social, emotional and academic growth of young children.

One of the vital components of successful programs for the education of young children is connecting parents in the classroom (Barrera & Warner, 2006; Paul, 2006; Giacchino-Baker & Piller, 2006; Glenn, 2005). This connection usually gives parents a foundation for continued parent involvement throughout the educational life of the children. Currently it is widely recognized that parents play an essential role in the educational achievement of their children. Research indicated that many types of parent involvement have been related to the cognitive development of the children. However, the nature of parent involvement is not the same in different ethnic groups. The level of education, cultural norms and values, nature of the ethnic groups, and nature of the immigration has lead parents to play different types of role in the life of their children.

The academic performance of the children not only depends on what happens in school, it is also highly and positively associated with what happens in home and

community (Barrera & Warner, 2006; Paul, 2006; Giacchino-Baker & Piller, 2006; Glenn, 2005; Yan & Lin, 2005; Lee & Bowen, 2006). The American government has given emphasis on the issue of parent involvement and created new goals by approving GOALS 2000: Educate America Act. The goal is "every school will promote partnerships that will increase parent involvement and participation in promoting the social, emotional, and academic growth of children" (US Department of Education, National Educational Goals: 2000).

Purpose of the Study

The purpose of this study was to examine the relationship between parenting practices in families of different income and ethnicities and their impact on the math and reading achievement of young children across the school years (the kindergarten, first grade, third grade and fifth grade). European American, Asian, African American and Hispanic ethnic groups are considered for this research and the existing data Early Childhood Longitudinal Study (ECLS), Kindergarten class of 1998-99 (NCES 2006-035) was used. This study a) examined the family involvement from a wide range of perspectives both inside and outside of the home, b) described how specific types of parent involvement are related to the reading and math achievement at the end of the kindergarten, first grade, third grade and fifth grade, c) determined which child and family contextual factors affect the cognitive competence of the children in the kindergarten, first grade, third grade and fifth grade and d) investigated how the relationship between parent involvement and academic performance of the children differs in terms of the race, ethnic background and socio-economic status of the children in the kindergarten, first grade, third grade and fifth grade.

Definition of Terms

Math and Reading Achievement

This refers to the math and reading outcomes at the end of the school year in the kindergarten, first grade, third grade and fifth grade. This study also uses the term interchangeably as “academic performance”, “school achievement”, “school performance”, “student achievement” and “cognitive skills”.

Parent Involvement

This is an umbrella term used to describe the activities that parents take to support, encourage, assist, help, recognize, and contribute to the cognitive development of the children. This study measures parent involvement as using home resources, enrichment activities inside and outside of the home and community, and parent participation in school related activities.

Parenting Practices

“Parenting practices” refers to the values, beliefs, attitudes and actions of parents to support the learning of their children at home, school and community. Based on the ECLS-K survey, parenting practices are operationally defined as: a) parent involvement at home, including home resources and home enrichment activities, b) parent involvement outside of the home which includes extracurricular activities and use of community resources and c) parent involvement in school which includes parent participation and voluntary service in school related activities.

Risk Factors

Conditions that cause the negative development of a child. This study uses three major risk factors: minority groups, single parents and low income.

Research Questions

This is a secondary analysis study about parent involvement and math and reading achievement of young children. The study mainly examines the relationship between particular types of parent involvement and student achievement across the school years. The study also tries to determine how student achievement differs according to the ethnicity and income level of the family in the kindergarten, first grade, third grade and fifth grade. Therefore the research questions are:

1. How much variance in the math and reading achievement of young children in K to fifth grade can be explained by the child and family contextual factors?
2. What types of parenting practices contribute to the reading and math skills of a child at the end of the kindergarten, first grade, third grade and fifth grade school years?
3. How does the relationship between parent involvement and children's math and reading achievement vary for children from different racial/ethnic groups?
4. How does the relationship between parent involvement and children's math and reading achievement vary for children from different socio-economic groups?

Significance of the Study

By examining the available literature, the present research topic should be considered as an important issue for the American education system. Parent involvement and the academic performance of the children are highly and positively related. Considerable research has been done about parent involvement and its impact on the performance of children in school (Yan & Lin, 2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller,

Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998). However, all of these studies have some limitations. This study addresses the weaknesses and gaps of the previous parent involvement research. Most of the existing research is focused on either students in secondary and higher education or adolescents. This study focuses on the impact of parent involvement for young children. The emphasis of this research is on how parent involvement makes a difference in the performance of children in elementary education. This study also looks at the relationship between different types of parent involvement and the math and reading achievement of young children.

Every ethnic group is different. They are different based on their cultural heritage, family values, tradition, adaptive ability and other characteristics. These issues have an impact on children and their educational performance. There is little research that puts emphasis on the children in minority groups and the socio-economic status of their group/family. This research also addresses this gap. This study has the following characteristics:

- This study uses new and ongoing data the Early Childhood Longitudinal Study (ECLS), Kindergarten class of 1998-99 (NCES 2006-038) of the national representative sample of the fifth grade students. The complex design and multiple methods of data collection of ECLS-K to fifth grade allow educators and researchers to explore the rich information and gain a national picture about the cognitive development of young children. The ECLS-K to fifth grade dataset is comprehensive and allows the researcher to examine the association of the academic performance of the kindergarten, first grade, third

grade and fifth grade students with different types of parenting practices. The researcher also has a chance to determine to what extent the association varies according to the kindergarten, first grade, third grade and fifth graders' ethnic and economic backgrounds.

- Parent involvement is very important. A child's future is determined by the role played by the family members especially by parents. Although there are other factors that also have an impact on the academic performance of the children, a handful of research (Yan & Lin, 2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller, Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998) found that parent involvement is the factor that plays a most powerful and strong role on the academic performance of the children. Parent involvement can make a difference in the performance of the children in the early school years.
- The focus of this research is parent involvement and math and reading achievement of the young children. If the research indicates a strong association between parent involvement and cognitive development for the young children across the school years, it will help policymakers and school administrators to set up a timely and appropriate policy for the parent intervention. The findings of this research will also help parents to determine to what extent parent involvement can make difference on the cognitive development of young children. This study will guide the parents in different

ethnic groups to help their children in a developmentally and culturally appropriate way.

- This research reviews an extensive body of literature which helps guiding parents, teachers, educators and policymakers understand the impact of parent involvement on the academic performance of the children. The parent involvement related theory and research framework help and guide other researchers to conduct more research about the issue. The findings of this research will guide the policymakers to make more appropriate family intervention policy for all ethnic groups.
- People in different immigrant communities will be benefited from the result of the study. It will help them to better understand the performance of their children. It will also assist them to analyze the factors that have an impact on the performance of their children and provide them with a comparative picture to analyze the performance of their children

Limitations of the Study

This study has some limitations. This study uses only quantitative data. Research (Brempechat & Drago-Severson, 1999) indicated that the mixed method is most appropriate to find the relationship and the real picture about parent involvement and educational attainment of children in school. Issues such as parent influences, cultural norms and values are not possible to measure using quantitative data. Another limitation is that this study is not experimental research. The non-experimental nature of the data can not establish a true causal relationship between variables and outcomes. The ECLS-K data are comprehensive but do not fit exactly what this study is looking for. There are

many other ways for parents to get involved with their children in home, school and community. The selected variables of the study may not capture the broad scope and complexity of parent involvement and academic achievement of the children.

Delimitation of the Study

This study determines the parent involvement in home, school and community by using some selected variables. Parents can get involved in other ways which this study does not consider. The study compares differences between the groups which increases the possibility of cultural bias. To get comprehensive information about parent involvement and cognitive development, we should consider the within group difference and majority and minority group difference, which would allow us to get less cultural bias in the research findings.

Organization of the Study

The first chapter of this research report states the problem of the study, purpose and significance of the study, and limitation and delimitation of this study. It also defines different terms that are used in this study.

The second chapter provides the conceptual framework of this research. By reviewing existing research about parent involvement, the second chapter guides and shapes this research.

The third chapter explains the method of this research. The Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K) is described in terms of its sample design, data collection method and design weights, followed by a discussion of research questions, measures of dependent and independent variables and analysis procedures of this study.

The fourth chapter describes the findings of the statistical analyses for each of the research questions. Chapter five provides a discussion, an interpretation of results, policy implications and also suggestions for future research.

Summary

This is an important study which addresses many gaps in previous research. The results of this study provide more appropriate and timely information for the educators and policymakers to create more appropriate intervention programs which will fit the needs of the children in all ethnic groups. The next chapter reviews the related literature and explains the conceptual framework of the study.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

This is a research study on the significance of parent involvement on the math and reading achievement of children in K to fifth grade education. The purpose of this study is to examine the level of parents' involvement in their children's school, community and home, and its impact on the math and reading performance of the children in different ethnic groups. This chapter provides the conceptual and theoretical framework which guided the research. This chapter also examines a portion of the existing research related to the math and reading performance of the children in different ethnic groups. The focus of this review is the methodology of the research, variables, theoretical frameworks, techniques of data analysis, and the research findings as well as the limitations of the study. A matrix is provided based on the existing research that summarizes the issues that are emphasized in existing research and what other issues need to be explored in the future.

Conceptualization of Parent Involvement and Cognitive Development of Children Belonging to Different Ethnic Groups

The theory that guides this research was synthesized from the broad research areas in education, sociology, and psychology. The conceptual framework for this research has been drawn from the ecological perspectives and also from the social capital theory. Both of the theories describe the academic achievement of children as a partnership between home, school and community. The outline of the conceptual framework is shown in figure 1:

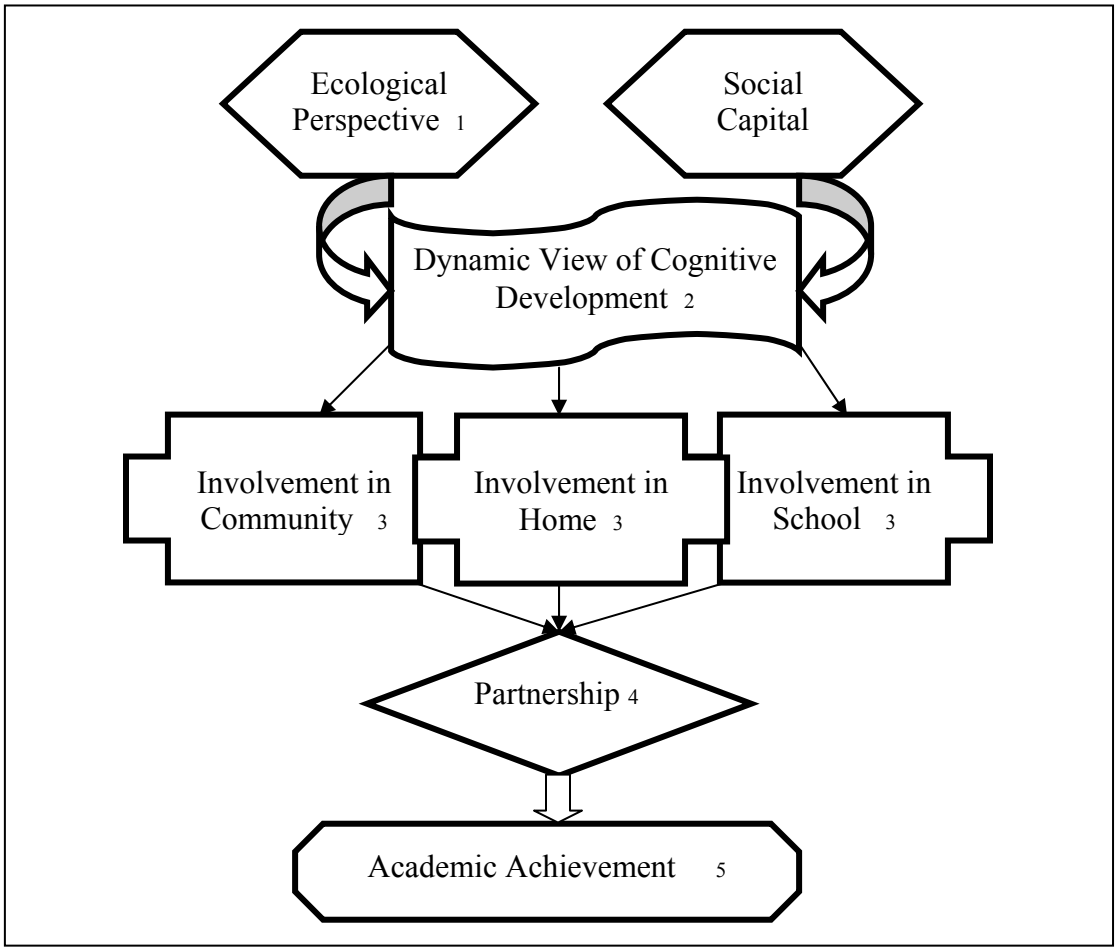
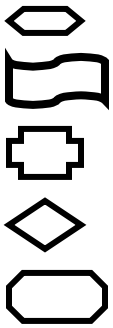


Figure 1: Conceptual framework of the research.

Interpretation

1. Theoretical Perspectives
2. The two perspectives about the cognitive development of the children
3. A dynamic view of academic achievement of children consists of parents' involvement in community, home and school
4. The home, school and community partnership helps a child to do well in school

Key



Theory

Perspectives

Components

Link

Outcome

Ecological Perspective

The ecological perspective was developed based on the philosophical teachings of Bronfenbrenner in 1976. The ecological model explores the external and internal influences on a child's growth and development. According to Bronfenbrenner (1976), a child is born and grows up in a social and cultural setting. Every social and cultural setting is nested in the influence of other social and cultural settings. For an example: a child is born in a family and every family has its own social norms and cultures, histories, values and disciplines; the family is connected to the school, community and other institutions. All of the connecting agents have a great impact on the child's family which in turn influences the child.

The ecological perspective emphasizes the interconnections of the events and bi-directionality of effects between organism and environment. The principle of all growth and development take places within the context of the relationship of home, school and community. In order to understand a child we must look at the child's family. At the same time in order to understand the family we must look at the context of the community and the larger society.

The classic definition of ecology of human development came from Bronfenbrenner (1976, p. 21):

> "The ecology of human development involves the scientific study of the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing persons lives, as this process is affected by the larger contexts in which the setting are embedded."

This definition has three components;

1. Environment makes its own impact

2. Interaction between person and environment is viewed as two directional
3. Environment has external influences.

Human abilities and their realization depend significantly on the larger social and institutional context in which an individual acts. The performance of a child in the school is greatly influenced by the connection among home, school and community and Bronfenbrenner (1976) placed a great deal of emphasis on parent involvement. According to him, in the modern industrialized society, the development of young children depends on the conditions of parent involvement.

The ecological theory examines different subcultures that human beings belong to. The subcultures are: micro-system, meso-system, exo-system and macro-system. *Micro* is a setting, such as home or family, daycare center, playground, where people can readily engage in face to face interaction. In these settings people can interact and engage with others in different activities face to face or directly. *Meso-system* refers a person who moves into a new setting but also participates in different activities in both new and old settings. For an example: when a child goes to school the child participates in activities in school, but the child also acts as an active member in home. *Exo-system* refers to a person who belongs to more than one group, but does not actively participate in all of the groups. The activities that occur in the groups, however, have a long term effect on the person's life. For example, a child belongs to a family. The family has a direct connection with different institutions such as parents' work organization, parent's socio-economic group, and the community. All of these institutions have a great influence on the growth and development of a child although a child does not interact directly with other people in these institutions. If a parent lives in a poor community, the

children of that parent are likely to attend in poor school districts. Being member of a poor community, the children of the family face a range of social and cultural problems that occur within the community. *Macro-system* refers to consistencies. Each person belongs to different subcultures. People's own belief system and ideology lead them to become involved in different activities that occur within these subcultures. In the last stage Bronfenbenner emphasizes the ideology, norms, values, and belief system of each cultural setting. At this stage a child interacts in different institution based on the norms, ideologies and beliefs of the child. For example a child belongs to a family, a religion, a culture, and a church. The child participates in all of these institutions based on his/her norms and belief system. A child goes to catholic school or a specific church because his/her belief system dive him/her to the process.

The micro, meso, exo and macro change over time. Bronfenbrenner used the term "chronosystem" to explain the process. This "chronosystem" can occur at any level. For example: in micro-system the relationship of parents and child changes based on the different growth stage of the child. In each stage Bonfenbrenner emphasizes the parents' involvement. According to ecological theory, educational policies and the educational reform movement will not bring fruitful results unless parents care about their children.

The main concept of ecological perspective lies in the involvement of family, school and community. According to Bronfenbrenner, early intervention programs such as daycare, Head Start would have no lasting constructive impact on the development of a child unless they affect not only the child himself but the people who constitute his enduring day to day environment in the family, neighborhood and community. It is very important, therefore, for parents to participate in the classroom and other settings.

Bronfenbrenner encourages parents to talk more with the children and pay more attention to them. If parents do not talk with their children they will not be aware of the problems of their children. If parents do not know the needs and the problems of their children, parents will not be able to help their children. For that reason parents need to participate in activities with the child at home, in school, and in the community. This interaction will create opportunities for parents to know the child and help the child in the growth process. Bronfenbrenner developed his theories based on his own life experiences. His mother and father's occupation greatly influenced his life. For that reason he sought to explain how educational policy should target parents. In order to help the child, parents should also be helped. Parents provide the classic example of discipline. If we want to rediscover moral identity as a society and as a nation, parental and community contributions do not have any alternative.

Social Capital Theory

Social capital theory is one of the most popular theories in educational research, appearing in research studies extensively since 1986 (Dika &Singh, 2002). Social capital theory is proposed by the political and the educational leaders as a solution to persistent educational and social problems. At present, social capital theory has gained popularity because of its critical examination of the existing literature to determine the role of social capital in educational and psychological development of children and youths. Dika and Singh (2002) analyzed the use of social capital as an explanatory variable in educational research and noted, "Social capital did not travel far in its journey in education" (Deka & Sing, 2002, p. 34).

Theoretical aspects of social capital theory were developed by Bourdieu (1986) and Coleman (1988). According to Dika and Sing, "Bourdieu (1986) had developed the theory of "cultural reproduction and cultural and social capital as an alternative explanation of unequal academic achievement to skill deficit and human capital theories" (p.34). Coleman (1988) noted that greater amount of social capital such as siblings, higher parent's educational expectations, and intergenerational closure lead to lower incidence of dropping out in school. According to Dika and Singh, Boudieu and Coleman explored two different streams of educational research using social capital theory. The authors noted that from 1990 to 2001, three different research studies showed that social capital is positively linked with the educational achievement (grades, test scores), educational attainment (graduation, college enrollment), and psychological factors that affect educational development (engagement, motivation, self concept). Dika and Singh noted that a large number of researchers used Coleman's stream of social capital theory. Some more recent researchers also examined social networks and social reproduction theories based on more theoretically redefined models.

Coleman (1988) described three components of social capital theory: (1) the obligations and expectations of reciprocity in social relationships, (2) norms and social control and (3) the information channels. Coleman (1988) viewed social capital as a means by which parents can promote the school and educational attainment of their children. According to Coleman, parents have various resources: financial capital, human capital, and cultural capital which they can invest for their children. Coleman (1988) defined the family background based on a) financial capital, measured by the income of the parents, b) human capital measured by the education of the parents, c) social capital

in the family measured by the relation between parents and children and d) social capital in the community measured by the relationship of parents with their neighbors in the community. Economic status, family, school and community, all of these forms of social capital, have an impact on the academic attainment of the children in school (Coleman, 1988; Lee & Bowen, 2006). In 2006, Lee and Brown described social capital and explained that parents should visit the school in order to gain important information such as upcoming events, available enrichment activities, how to help their children in homework, books and resources, study guides, assistance, parenting tips, reading guides, school-home agreements on student behavior and expectations, and instilling educational values. According to Lee and Brown, all of these resources can help parents promote the increased educational attainment of their children. Coleman (1988) also emphasized the importance of social networks. For an example: parent-teacher association provides a communication network where parents have an opportunity to interact with other parents. While volunteering at school or attending parent-teacher association meetings, parents can get additional information which may help them to improve their parenting skills and become knowledgeable about the available resources in the social network represented by other parents. Coleman (1988) explains active participation of parents in school and community and its impact on the performance of their children. Those parents who devote more time to their children in the home, at school and in the community provide their children with better opportunities for educational attainment in school.

Socio-economic status of the family, school, and the community are the essential elements for the academic success of the children in school. The social capital of the middle class family is very strong and therefore contributes greatly to the successful

education of their children. However, if we look at a wide range of educational research we will see that some children who are born in disadvantage families or neighborhoods do well in the school and are able to improve the condition of their life. In that case we have to reexamine how social capital contributes to their achievements. They may be born in poor families but the strong relationship between the children with their parents can be very important. We can explain the issue in two different ways. One explanation is that parents might have high educational expectation; though the parents are poor they devoted more time to the child's education. Parents may have created a supportive learning environment in home and be able to use the resources in the community to provide advantages to their children. High educational values of these parents helped their children to succeed (Caplan, Choy, and Whitmore, 1992). Another explanation is that poor children who do well in school may have received a better education and more attention from their school even though the social capital of their family is low.

The theory of social capital can be extended to include the concept of cultural capital which came from Bourdiew (1977). Bourdiew's concept of social capital also involved parent's social relationships or networks that provide access to resources, and the relationship or network must be actively maintained by the parents (Lee & Bowen, 2006). Bourdiew viewed social capital as a means to gain socially described ends (Lareau, 2000). Brourdiew gave emphasis to the culture of an individual and the culture of the larger society or the institutions of the society. He used the terms "habitus" and "field" to describe the issue. Habitus is a system of dispositions that come from social training and the past experience (Lareau, 2000). The disposition means "to act in a certain way, to grasp experience in a certain way, to think in a certain way" (Lee & Bowen,

2006, p. 197). A field is a structure or a system of the social relations at the micro and macro level (Lareau &Horvat, 1999). A person can enjoy the social advantages if the field is understood and familiar to the person (Lareau & Horvat, 1999).

According to Lee and Bowen (2006) cultural capital is related to the educational system in three different ways: (1) personal dispositions, (2) attitudes and knowledge gained from experience and (3) connection to the education related objects such as books, computer, academic credentials, and connection to the education related institutions such as school, universities and libraries.

The cultural capital of individual is very powerful. Through financial cultural capital an individual can purchase the educational materials. Individual or human capital can motivate and encourage someone to use the materials. The value and ideology of an individual can influence someone to change her/his life. Through this kind of social capital parents can encourage their children to have a better educational attainment in school.

Parents with different cultural background may be involved in different ways in school. The financial resources, level of education, beliefs and values, experiences, and knowledge about educational systems allow the parents to play different types of roles in the schooling process of their children. For an example, some parents do not speak English very well and they may not be very knowledgeable about the American education system. In that case parents may feel less confident in getting involved in different activities in school and the community. In some cases parents from some specific cultures value education more; culturally some parents sacrifice more for the education of their children than parents in other cultures; and some parents may have

very high educational expectations for their children. All of these various forms of cultural capital contribute to the difference in the level and the nature of parent involvement, and have an impact on the educational attainment of the children of different cultures.

Conceptualization of Academic Achievement of a Child from the Ecological and Social Capital Perspectives

From the ecological and social capital perspectives academic achievement can be viewed as a dynamic and interactive process. This dynamic and interactive process focuses on the abilities and skills of an individual and assumes that a child must change to fit into the static school context. For that reason this view is different from the traditional view. The traditional view does not recognize the contextual factors that have an impact on the academic performance of a child. The ecological and social capital theories acknowledge the contextual factors that have a long-term impact on a child's life and understand that the academic performance of a child is an integrated process.

Under the ecological and social capital theoretical frameworks the academic achievement of a child can also be considered as a transitional process and, therefore, demands more responsibilities on the part of parents, schools and communities. Both of the theories view parents as the most influential factor in a child's life, and acknowledge that they can contribute more than anyone else to the physical, social, emotional, cognitive and cultural development of the child. A limited amount of research indicates that the academic performance of a child greatly depends on the specific roles played by parents in home, at school and in the community (Yan & Lin, 2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995;

Muller, Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998; Schneider & Lee, 1990).

The ecological and social capital theories recognize the academic performance of a child within the larger social and cultural contexts. The role parents play at home, school, community and other social institutions has a great impact on a child's life. That impact may not be viewed immediately but it has a long-term effect (Bronfenbrenner, 1973). For example, when Bronfenbrenner was a child he visited different places with his father, and he heard different terms in psychology from his mother. Although at that point of his life he did not understand any of the terms, when he grew up and went to the college he was able to understand the meaning of those words easily; his previous experience helped his comprehension. The experience he had with his parents influenced and led him to work with children both in the United States and former USSR.

When we examine the academic performance of children in school there are several questions that come to mind. Theses questions are: what have they learned, how did they learn, and what are the social and cultural contexts of learning? These questions, in fact, look at the role of the classroom teacher which also is very important. The classroom teacher plays a very complex role in the cognitive, emotional, cultural, physical and social development of a child. But the role a teacher plays in the classroom also depends on other factors and again the involvement of parents is one of the most influential factors (Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller, Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998; Schneider & Lee, 1990). Parents can help the teacher to understand the strengths, weakness and needs of a

child. Parent participation in school allows parents and teachers to discuss and share their thoughts about the child. It helps teachers to know the expectations of the parents for the child and also helps the teacher to understand why a child behaves in a certain way in the classroom.

Parent involvement in school also helps parents understand the school system and help the child through the education process. The information parents get from the school can help them to assist their child in a developmentally appropriate way. The information can also help parents understand the relationship between parents and their children. When parents participate in the different activities in school, it helps parents to interact with other parents. In the parent teacher conference, parents get an opportunity to share their experience with other parents. Parents also get tips on how they can help their children to improve in math, reading and science knowledge. Also, parents can become knowledgeable about the community resources and also gain an understanding of how best to utilize these resources for their children. Parents can get advice from the school and other parents about supplemental activities that they can do with their children in home. The parent involvement in school can improve the quality of teaching in school, which in turn promotes the physical, social, emotional and psychological, and cognitive development of a child. Overall it has a beneficial impact on the performance of the child.

The relationship between parents, children, schools, teachers and communities are not static. It changes over time. The academic performance of a child depends on the transition of this relationship. The academic performance of a child in a school is subjective and context related and also has a transition. If any changes occur in any

setting (home, school and community), it might have an impact on the academic performance of the child (Bonfenbrenner, 1976; Ogbu, 1994; 1999; Spencer, 1999). For that reason, in order to understand the academic performance of a child in school, we have to consider all other contextual factors that occur in home, family, community or other social and cultural institutions.

History of Parent Involvement in the Education System in America

Federal school policies started to focus on the child and family after the World War II in the United States. In 1960's federal government used two approaches to involve parents in education (Gordon, 1977). One was psychotherapeutic approach which targeted the middle class family, and the other targeted the people outside of middle class family and of mainstream American society (Gordon, 1977). During the1960's some researchers focused on the school, family, home, parents, community and other social conditions (Coleman, 1988). As a result of their work many government programs were developed such as Head Start, Home Start, Parent Child Development Center, Title I of the Elementary and Secondary Education Act (ESEA) of 1965 etc. (Gordon, Olmsted, Rubin, & Ture, 1979).

A number of evaluation research studies looked at the impact of these programs and reported that parent involvement has a greater impact on the academic performance of a child (Gordon, 1977). In the 1980's, research began to explain the impact of parent involvement in the school, home, community and other social institutions. The findings of the research showed a positive relation between parent involvement and education attainment of their children in school and were, therefore, able to convince the policymakers to take some initiatives to create family intervention programs. In the

1990's the federal government created the Action Center for Families, Communities, and Schools and the Children Learning Center for children from birth through high school (Epstein, 1996).

The most recent federal initiative is the No Child Left Behind (NCLB) Act of 2002. This law acknowledges parents' contribution to the academic performance of their children. This law creates opportunity for parents to get involved at the national, state, district, and the individual school level for developing the educational policies that encourage parents to participate in school activities. NCLB recognizes the role of parents in education more than any other laws ever before.

Existing Research about Parent Involvement in Education

A great amount of research has been conducted in order to better understand the role of parent involvement in the school, community, and home, and the impacts on the academic achievement of the children (Yan & Lin, 2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller, Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998; Schneider & Lee, 1990). Most of the research indicated that the home environment and home leaning opportunities help children to do well in school. Parents must decide how much difference they can or are willing to make in the life of their children (Honing, 1979). Parents can be involved with the children in formal and informal ways. Honing (1979) indicated that informal help includes watching a child doing activities, which helps parents to understand the social, intellectual, emotional and motor development of the child. It also helps parents to understand what

the needs and the problems of the child are and how parents can best meet the needs of the child.

Lee and Bowen (2006) conducted a study about parent involvement, cultural capital, and the achievement gap among elementary school children. The study examined the level of five types of parent involvement and their impact on the academic achievement of children in elementary education. The background variables of this research were race/ethnicity, poverty, and parent education attainment. The research sample comprised of 415 third through fifth grade students who completed elementary school successfully in an urban setting in the Southern United States. Data were collected in the spring of 2004 as a part of a study designed to determine the psychometric properties of the elementary school success profile.

Forty percent of the students included in the Lee and Bowen study received free or reduced price lunches at school. Fifteen percent were Hispanic, thirty four percent were African American, and fifty percent were European American. The average parent educational attainment was 3.52 (SD = 1.45) which corresponded to the educational attainment level between "some college, or vocational training and completed a 2 year degree". The theoretical framework of this research was conceptualized based on the social capital theory.

Five categories of parent educational involvement at home and school were examined. Parent involvement at the child's school was assessed with a composite of six items. Chi-square statistics and t test were used to examine the differences of parent involvement and school performance by demographic characteristics. Hierarchical

regression analyses were used to examine the effects of demographics and different types of parent involvement on academic performance.

The result of Lee and Bowen research indicated that the levels of parent involvement and child achievement varied significantly across demographic groups. The academic performance of European American was higher than African American and Hispanic children. The academic achievement of African American students was higher than Hispanic children. The socio-economic status and the level of parent education are highly associated with the academic performance of the children. The research also found that a high level of homework was associated with the high academic achievement of the children.

Lee and Bowen's study had some limitations. The study was based on co-relational data and therefore the result could not support causal claims. The data used in Lee and Brown's study were part of a dataset in a larger study, so the researcher did not have the opportunity to design the questionnaire which might have best fit the contexts of the research. In the absence of longitudinal study design, it was not possible to determine if some types of parent involvement preceded or occurred in response to children's academic performance. Another potential limitation of Lee and Brown study was its reliance on ordinal frequency scales. Response choices on such scales may be biased to the extent that parents with higher expectations may rate themselves at the appropriate level of involvement which might seem to be lower when compared with the expectations of parents whose expectations are not as high for the same level of involvement.

In 2005, Yan and Lin conducted a study on parent involvement and mathematics achievement. The researchers examined the relationships of three types of parent

involvement: family obligations, family norms, and parent information networks. In the Yan and Lin study, parent involvement has been conceptualized as a form of social capital. The researchers used the NELS: 88 data which were based on a sample of 24, 599 eight and twelve grade students and their parents and teachers. Completed information was available for 19,386 students on all variables. The data were analyzed and compared in four different ethnic groups: Asian, European American, African American and Hispanic.

Three different components were used to analyze the data of this research. First one is factor analysis which yielded nine distinct factors that were grouped into three components according to social capital theory. The second one is descriptive analyses which showed the dependent and independent variables that were used in Yan and Lin's study. The third and final one is a series of ordinary least squares (OLS) regressions. Several variables were controlled for the family of the adolescents and characteristics of an individual such as female, eight grade mathematics, family income and parent education.

The findings of Yan and Lin research indicated statistically significant difference in math performance of the 12^{th} grade students as a result of parent involvement. For European American students, parent involvement is a powerful element on the highest level of math performance. On the other hand, family involvement is not a powerful factor for African American students as it is for other groups. Hispanic parents are not aware of the ways to assist their children. Asian students had the highest level of mathematics achievement. European American students' math scores were higher than African American and Hispanic students. Hispanic and African American students had

lower 8th and 12th grade mathematics achievement. Family obligations had positively and statistically significant effects on the mathematics achievements of European American students in 12th grade. The findings of the research also indicated that European American parents participated more in family obligation activities (participating in PTO activities, attending school programs, and discussing school topics) because they felt more confident in their communications with others. This confidence also transfers to the child which has an impact on the performance of the child.

Yan and Lin's study had some limitations though. The main focus of their study was parent involvement and mathematics achievements. In their study, they did not answer questions concerning whether parent involvement contributed in the difference in reading and science achievement on 8th and 12th grade learners. The study also did not examine the performance of different ethnic groups based on socio-economic status. Yan and Lin's study used the national database which is comprehensive but might not fit the exact needs of their research.

In 1994, Ogbu conducted a research on cultural differences. For more than 20 years he studied education of minority children from comparative or cross-cultural perspectives. His research mainly focused on the issues of school or academic performance and social and economical adaptation of minorities. His research looked at the minorities in America and other urban industrial societies. According to the results, intelligence differs in different ethnic groups based on their socio-cultural positions and political boundaries. For an example: for the techno-based societies, like America, the knowledge of technology is very important because without the knowledge of technology someone will not be able to be successful in that society. On the other hand, if the society

is not techno-based, like Bangladesh, people do not need the knowledge of technology to survive or to be successful in the society.

According to Ogbu, the ability of an individual depends on the nature of the society and cultures. To explain the ability of an individual he gave emphasis on verbal, numerical, spatial- perceptual, memorizing, reasoning, and mechanical intelligence. Ogbu looked at the intelligence characteristics of the members of different immigrant groups. He defined intelligence as a genealogical tree. According to Ogbu, in America, some children from different immigrant groups do not do well in Intelligence Quotient test. Their low performance has usually been attributed to cultural bias in the tests. However, some children from the same groups do well in IQ tests. Ogbu provided an explanation for this. According to him, both the failure of the first group of children and the success of the second group of children are related to their own culture. According to Ogbu, "In the case of first group minority culture works against the performance and on the other hand in the case of second group the minority culture enhances the performance" (p. 372). The minorities who do well in IQ tests are influenced by their ancestral cultural practices in socialization and social orientation. He also noted that IQ tests discriminate against the voluntary minorities like Asian Americans.

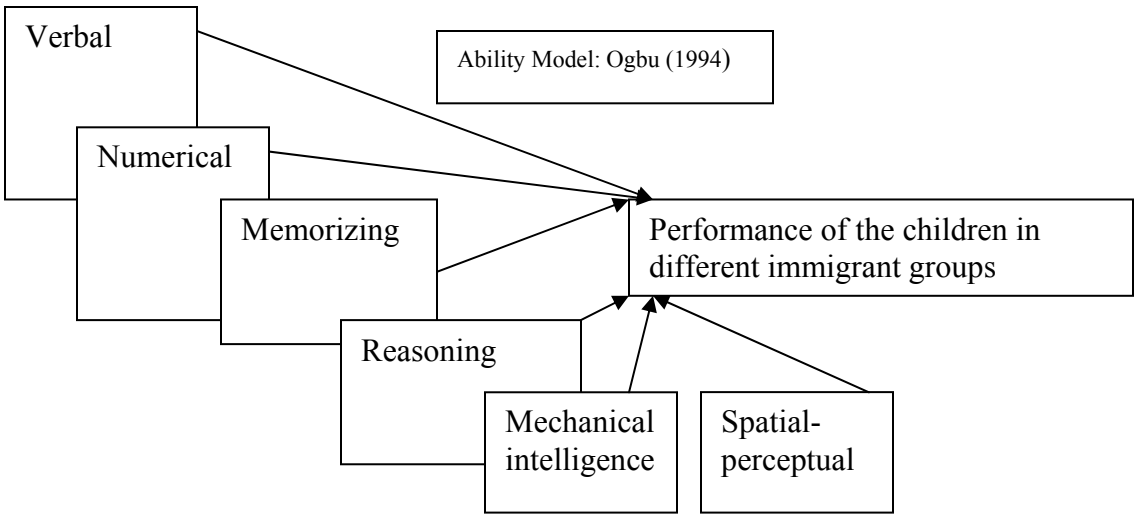


Figure 2: Abilities that have an impact on the performance of the children of different ethnic groups.

Ogbu also gave emphasis on family and community in his research. He considered the family and community as playing very important role to the academic performance of a child. The role of the family and community may be positive, but it depends on the nature of the culture and community. He gave example of an African American child who adopts the academic appropriate attitudes and behaviors (the academic appropriate behaviors and attitudes are developed under European American cultural framework) such as talking in the proper way, speaking Standard English rather than using ethnic dialect, etc. According to him, there is a psychological pressure for the child in the form of "affective dissonance" against the adoption of behaviors from European American cultures. The child may get pressure from the family members and peer groups. The family members of the child may show less interest in him, or the child may get less peer support as a result of adopting appropriate academic attitude and behavior. According to Ogbu, the academic appropriate behavior and attitude have an

impact on the performance of the child but in this case family and community culture work against the performance of the child.

Ogbu (1987) conducted another study on the performance of minority students in the school. His research questions were why some minorities successfully cross cultural boundaries and perform well in the school and why some other minorities do not succeed in crossing cultural boundaries and do not perform well in the school? In this research he discussed the relationship among social adjustments, academic learning's and different cultural backgrounds. He found that the community of minority groups contributes to both school success and failure. He discussed how society at large and school contribute to the school performance of the children. The school can influence the academic performance of the minority children intentionally or unintentionally. The school provides education based on the norm of the American society and the community. Ogbu mentioned comparative and historical research which showed that there have always been factors related to the school and the classroom which work against the performance of the minority children. He presented the concepts of voluntary and involuntary minority. According to him "Voluntary or immigrant minorities are people (and their descendants) who have moved more or less voluntarily to the United States or to any other society because they believe that this will lead to more economic well-being, better overall opportunities, and greater political freedom" (p. 372-373). On the other hand "involuntary minorities are those groups (and their descendants) who were initially incorporated into U.S. society (against their will by Euro-Americans) through slavery, conquest or colonization; Thereafter, these minorities were relegated to menial positions and denied true assimilation in to mainstream of U.S society (as were the non- European

American immigrants); Native Americans, African Americans, Mexican Americans, and Native Hawaiians are examples" (p. 373). Ogbu noted that "the voluntary minorities try to overcome all difficulties in school, because they strongly believe that there will be a pay off later. Culturally the voluntary minority valued education higher and consider education as a means to be succeed in their life. With this kind of attitude voluntary minorities relatively do well in school" (p. 385). He also noted that children of immigrant parents do well in school because the primary cultural difference makes it easy for them to overcome the cultural/language discontinuities that they encounter in school. He gave some examples which enhance the academic success of the children of voluntary minority at school and promote social adjustment. At the community and family levels children are encouraged and guided to develop good academic work habits and perseverance, get support from the parents and other members of the respective cultures, and get support from peers. Family and community tend to insist the children to follow the rules of the school and adopt the behavior that enhances the academic success. Immigrant minority children respond positively with their parents and communities. The children try to follow the school rules and invest a good deal of time and effort in their school work. If the language problem persists, older children tend to take the courses where they have to use less language. They also consider those jobs where their groups are not discriminated.

In the case of involuntary minority, the psychological pressure from the family and the society work against the performance of their children. They have a problem to cross the cultural boundaries. They hold an opposite view to the other cultures. Their children felt pressure against "acing White". American public schools are controlled by

the framework of the European American cultures and involuntary people have difficulty to adjust and perform better under that cultural framework. They tend to blame others for their failure and do not follow the survival strategies that the voluntary minorities do.

There are some cases where children of both voluntary and involuntary minority groups face the same kinds of difficulties in school and that also has an impact on their academic performance. The academic performance of the children in different ethnic groups depends on different cognitive, interaction, communication, and socialization styles. Parents are the most important factor who can control and manipulate all of these styles. The controlling and manipulative power of parents differs based on the values and the pattern of the cultures of the parents. Parents can help the children to adjust in the school environment and perform well in the academic arena.

To understand the performance of different minorities, Spencer (1999) conducted a study about social and cultural influence on the school adjustment. The researcher defined school adjustment as the degree of school acculturation which gave emphasis on adjustment between quality of the student and the environment in the school. Social and cultural factors are great contributors in school adjustment of children. Spencer's study used one longitudinal project data which consisted of both qualitative and quantitative data. The researcher considered school adjustment as a part of the process of human development. Spencer's study identified at least two prerequisites: one was performance of minorities in contemporary societies and another one was cognitive and academic behavior of minorities. The second type put emphasis on different types of cultural differences. When a child goes to school, the child first makes a transition from home culture to school culture. It does not matter where the student comes from or what is the

class status, the student must adjust with: a) new cultural and lingual behavioral requirements, b) new social relations, c) new style of language use or communication, and d) new style of thinking. The researcher noted that a body of literature indicates that communication and language use at home is related to student's performance; especially when mothers have more school education. Spencer (1999) used Ecological perspective to understand social and cultural influences on school adjustment. The author defined school adjustment as the degree of school acculturation or adaptations. The study noted that "children as young as 2 years have a tendency to act in a number of ways like their parents" (p. 52). In later school years they incorporate their own value system with the values, beliefs, restrictions and ideals of their parents. The research indicated that the school performance or academic achievement of the children is highly related to level of parent involvement in home and community.

Spencer's study also has some limitations. The researcher assessed the ethnic and racial attitudes of children and interpreted the findings from the adult perspectives. The research did not focus on the developmental variables of the children. It is not clear how this research overcame the cultural misconceptions and stereotypic view about different ethnic and minority groups.

Steinberg, Dornbusch and Brown (1992) conducted a study about ethnic differences in adolescent achievement. During 1987-88 data were collected from 15,000 American high schools. The study examined the superior school performance of Asian-American students and inferior performance of Hispanic American adolescents based on the differences in parenting practices and familial value about education and beliefs about the occupational rewards of academic success. Many of the items in the questionnaire

asked students directly about the extent to which their friends and parents encouraged them to perform well in the school. The research found that there are interesting ethnic differences in the relative influence of parents and peers on the achievement of the student. Students who received support from parents and peers did significantly better in school than those who did not receive any support from parents or peers. The research also found that European American students received more parents and peer supports; on the other hand Hispanic students received low parent and peer supports. African American students received more parent support and lees peer support. Asian American students received more support both from their parents and peers. Steinberg, Dornbusch and Brown's study also found that European American and Asian American students received very strong support from their family which also had a very strong influence on their school performance.

However, Steinberg, Dornbusch and Brown's study did not look at the variables from the multiple perspectives (such as community and school perspectives). It is not clear what kinds of activities in home contributed to the school performance of the children and to what extent. At the same time the sample of the research might not have represented the total demographics in America.

In 1999, Goyette and Xie conducted a study about educational expectations of Asian American youths. Asian American students constantly scored higher on standardize tests, have higher grade point average, and they also attended in four-year college more. The educational and economical success of Asian American students marked them as "Model Minority". Goyette and Xie's research explored three factors that may explain the higher educational attainment of Asian Americans. The factors are: a)

socio-economic and other background characteristics, b) tested academic abilities and c) parents' education expectations for the children. The study used NELS sample of 24,599 US eight grade students who were surveyed in 1988, and re-interviewed in 1990, 1992, and 1994. Linear and logistic regressions were used to analyze the data of this research. The researchers noted that Asian American students had higher education expectations than European American students. The study also found that parents' education expectation is highly and positively related to expectations and academic performance of their children. The limitation of this study is that this study gave emphasis only on the academic performance of European American and Asian American students.

Kao (1995) also conducted a study about the academic performance of Asian American model minorities using NELS:88 data. Kao's study included the factors about family background, family structure, home educational resource, and student characteristics. Multivariate analysis was used to analyze the data of this research. The result of this study indicted that socio-economic status and home resources were positively related to the academic performance of the Asian American children. Asian American people are not an educationally and economically advantage group but the children of this immigrant group comparatively do better in the school than other groups (European American, African American and Hispanic). Though Asian American parents get involved less in school activities because of their low English proficiency, their style of involvement in home and community is different than that of other ethnic groups, and it also has a significant impact on the performance of their children. Parents of Asian American children have high education expectation which motivate their children to do well in the school. Asian parents consider education as a means to become economically

successful in American society. Kao also indicated that the nature of immigration of Asian parents also motivates their children to do well in the school.

Machamer and Gruber (1998) conducted a study about interaction among family connectedness, educational commitment, and the risk taking behavior in American Indian adolescents. Minnesota Student Survey (MSS) was administered to 91,175 of the 6th, 9th and 12th grade students enrolled in 433 public school districts. Machamer and Gruber's study used 149 self report 5 point Likert type scale questionnaire which was developed by the Minnesota Department of Education to gather data about student's health-risk behaviors, substance use, educational attitude and behavior, and family environment. Descriptive statistics and chi-square statistical analysis were used to analyze the data of this research. The result indicated that low family connectedness is strongly associated with the low academic performance of the American Indian adolescents. Low family connectedness is also associated with the decreased educational commitment and increased the risk of absenteeism, substance use before and during school hours and the purchase of alcohol or drugs on campus. American Indian youths reported lower level of connectedness to family and poorer level of educational performance than African American youths.

Muller, Stage & Kinzie, 2001 conducted a study to understand the factors that are related to the science achievement in different ethnic groups. Muller, Stage & Kinzie's study mainly focused on gender and ethnic difference. The sample was drawn from the data of first three waves of NELS:88. Hierarchical Linear Model (HLM) was used to analyze the data. The findings of this research indicated that socio-economic status and previous grade are strongly and positively related to the achievement for the students in

eighth grade in all subgroups except for Asian American males. African American and Latino students perform far below the European Americans and Asian Americans in terms of pre-college science achievement. The research also indicated that student achievement and growth varied across all racial and ethnic and gender subgroups. The differences between racial and ethnic groups were generally larger than the gender differences within the groups.

Okagaki, Frensch, and Gordon (1995) conducted a study about school achievement of Mexican American children. Parents of fourth and fifth grade students in three neighboring suburban school districts in Northern California participated in Okagaki, Frensch, and Gordon's study. Parents of 33 high achieving and 49 low achieving fourth and fifth grade Mexican American children completed the questionnaire related to the beliefs and values of education and childrearing. The Home School Connection Questionnaire (HSCQ) was used to assess parents' beliefs about education and school achievement. The HSCQ have five sections: a) educational expectations, b) parent efficacies, c) parents' perceptions of racial barriers, d) self-reported parent's behavior, and e) demographic information. Descriptive statistics was used to analyze data. The result of this research indicated some underlying processes that may be related to the school achievement of Mexican American children. The result indicated that all of the five parenting related factors were highly associated with the school achievement of Mexican American students. Parents of low achievers are satisfied with the low achievement of their children in school. This can be explained in two ways: children may not report the actual grade that they received in school to parents, or parents have very low expectations and also do not consider education as a means to become economically

successful in their life. The study also found that parents of low achievers invest less time in helping their children with schoolwork than the parents of high achievers.

Okagaki, Frensch, and Gordon's study had some limitations as well. The sample size of this research was limited. The self reported parent's beliefs and behaviors questionnaire is questionable because of its reliance issue.

Orland (1990) conducted a study about childhood poverty and educational achievement. Panel Survey of Income Dynamics (PSID) questionnaire was used to collect data for this research. Data were collected from 6,000 nationally representative families. Data were analyzed based on different ethnic groups, their primary languages and economic status. Descriptive statistics was used to analyze the data. The result of this research indicated that high level of poverty is associated with the school achievement of the children in different ethnic groups. Orland's study had some limitations. Multiple linear regression analysis might have given us more correlated factors about the connectedness of school achievement and the poverty level of the children.

Padilla and Gonzalez (2001) conducted a study about academic performance of immigrant and US born Mexican heritage students. Padilla and Gonzalez's study examined generation differences in academic achievement among 2,167 high school students who identified themselves as Mexicans. In the study, the reseearchers used two perspectives to draw the conceptual framework. One was familial and cultural interpretations and the other was poverty, limited English proficiency, and school practices. This study was a secondary analysis of an existing dataset of 7,140 students. The researchers of Stanford Center for the Study of Families, Children, and Youth developed the questionnaire to gather information about student, family, and school

variables that contributed to academic performance of children. The questionnaire had 300 items. Students between 9th and 12th grades were asked to complete the questionnaire which took approximately one hour to complete. Descriptive analysis, t test, ANOVA and stepwise regression were used to analyze the data of this research. Padilla and Gonzalez's study found that US born Mexican students perform poorly in the general academic track than immigrant Mexican students in the same general track classes. The finings of their research clearly indicated that immigrant status alone does not lead to higher achievement; rather the educational capital available to Mexican origin students, prior school history in Mexico, academic track, bilingual assistance, and home culture allowed them to excel academically.

The questionnaire that Padilla and Gonzalez research used, did not distinguish among the learners based on their receiving the instruction of ESL and bilingual education. To understand the reasons that contribute to the low academic achievement of the American born Mexican heritage youth, more factors such as home cognitive stimulation activities, parenting practices at home, extracurricular activities should be considered in future research.

Portes (1999) examined the various factors that contribute to the performance of immigrant children using secondary data. The Youth Adaptation and Growth questionnaire is an interview instrument which was developed for the second generation project in Miami and San Diego. A total of 4,288 second generation immigrant students were grouped into nine ethnic categories for the purpose of the study. The interview questionnaires had 100 items which took approximately one hour to complete. The variables of Portes's research were demographic information, psycho-cultural and

ethnicity indicators such as age, grade, English language proficiency, and parent's SES. A multiple regression was used to analyze the data. The findings of Portes research indicated that nature of the immigrants and socio-cultural status were significantly related to the school performance of the children of immigrant parents. However, the study did not analyze the factors that contributed to the academic achievement in different ethnic groups. To gain a better understanding, we need to examine the achievement differences between the children of voluntary minorities and involuntary minorities based on the community and the home contexts.

In 1998, Rumberger and Larson conducted a study to understand the underlying factors that contribute to the success or failure of some minority students in American schools. The socio-cultural and socio-economical perspectives provided the conceptual framework of this research. Rumberger and Larson's study used the institutional data from a large urban middle school in California. 574 students from seventh grade cohort and 577 students from ninth grade cohort participated in the study. The variables of Rumberger and Larson's research were limited to English proficiency, female, free launch program in school, foreign born, educational commitment, school engagement, and educational achievement. A descriptive analysis and a multiple regression were performed to analyze the data. The findings of this research indicated that students who had limited English proficiency performed lower than the students who had high English proficiency or who were from English only backgrounds. The findings also indicated that educational commitments affect grades. However, in the research, the researchers did not make it clear what kinds of activities in home and in the community contributed to

promote the academic performance of the children in different ethnic groups in the school.

In 1990, Schneider and Lee conducted a study to compare the academic performance of East Asian and Anglo American elementary school students. Ethnographic techniques were used to collect information for Schneider and Lee's research. The data were collected by using five techniques: a) review of school records, b) student census, c) participant and non participant observation, d) semi-structured, in-depth interviews with parents, teachers and administrators, and e) collection of student essays. The variations of academic performance were viewed as the result of the relationship between socio-cultural factors and interpersonal interactions. The result of this research indicated that East Asian students did well in the school because they shared the values and aspirations with their parents in home through the learning activities. The findings of his research also indicated that Asian students did well in the school because their parents and peer groups expected them to do well in school. Parent expectations were extremely powerful and transmitted through a cultural context where education is highly valued. Education leads to increase self-esteem and self-improvement among Asian American students. Asian parents help their children to structure their out of school time which help their children to practice and to improve the academic related skills. One of the major findings of Schneider and Lee research was that East Asian students spent much time studying in home rather than playing with their friends in outside.

Ogbu (1987) conducted another study that searched the variability in minority school performance. The researcher considered cultural differences as domains of culture which includes cognition, communication, interaction, teaching and learning and

socialization skills. He noted that cultural and language differences were not the only factors that have an impact on children's performance. Cognitive style, communication style, motivation style, classroom social organization and social relation, interaction style and literacy and writing style have an impact on the academic performance of the minority children in school.

The learning style of an individual is very important. A small amount of research found that learning styles of a learner have an impact on the performance of the learner (Goyette & Xie, 1999; Hidi & Harackiewicz, 2000; Kao,1995; Machamer & Gruber,1998; Ogbu, 1999; Okagaki, Frensch, & Gordon,1995; Portes, 1999; Rumberger & Larson,1998; Schneider, Hieshima, Lee, & Parks, 1994). All of these studies discussed the academic performance of immigrant students from learning perspectives. Banks & Banks (2001) explained the individual learning pattern. They noted that "individuals learn the values, symbols, and other components of their culture from their social group" (p. 13). According to them, behavior of individuals is shaped by group norms. The knowledge of group characteristics enables us to predict individual's behavior as well as individual learning style. Here parents are the persons who can help the teacher to understand the individual learning style and need of their children. At the same time parents can help their children to explore their own learning style.

Ogbu (1994) discussed how society at large and the school particularly contribute to the academic performance of the children. According to him, "Comparative and historical research shows that there have always been factors within the schools and classrooms operating against minority children's adjustment and academic performance" (p. 319). He noted that sometimes school does not understand the values of minority

children, which poses a threat to the adjustment and learning of the children in school. Different research has been done to understand whether teaching perspectives and attitudes of a teacher have an impact on the performance of a learner (Lewis, 2001; Cook, Habib, Phillips, Settersten, Shagle, & Degirmencioglu, 1999; Hamilton & Richardson, 1995; Paratore, Hindin, Krol-Sinclair, & Duran; 1999; Quiocho & Rios, 2000; Stipek, 1996; Alexander, 2002). These studies focused on how the beliefs, experiences, and adaptations of a teacher shape the implementation of curriculum. Ditnow & Castellano (2002) conducted a study about the responses of teachers regarding the success for all students. The study noted that, culturally diverse children who found similarities between home learning styles and school learning styles were able to perform better in school. Hwa-Froelich & Deborah (2003) used ethno-methodology to understand the frameworks of South Asian families. Ethno-methodology helps to understand and analyze the meaning of different behavior of those people who live in a different socio cultural world (Hwa-Froelich & Deborah, 2003). Different research found that many parents and children, for whom English is the second language, have difficulty in understanding the school culture (Ogbu, 1994; 1999; Hamilton & Richardson, 1995; Kao, 1995; Lee & Brinton, 1996; Rodriguez-brown, Li, & Albom, 1999; Carbonaro & Gamoran, 2002). Research also found that lack of English proficiency creates communication problem for many parents and children who speak English as a second language (Epstein, 2000; Portes, 1999; Anderson & Roit, 1996). Lack of the knowledge of school culture and lack of commutation skills have a direct impact on the low performance of a learner of an immigrant community (Ogbu, 1999; Scheider & Lee, 1994). Ogbu (1999) noted that a positive attitude of a teacher increases the academic

success of a learner. Other research also supported similar findings (Lee & Brinton, 1996; Goyette & Xie, 1999; Hidi & Harackiewicz, 2000; Kao,1995; Machamer & Gruber,1998; Ogbu, 1999; Okagaki, Frensch, & Gordon,1995; Portes, 1999; Rumberger & Larson).

The curriculum and school environment are also directly associated with the achievement of a learner (Ogbu, 1994; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999). Bempechat & Drago-Severson (1999) noted that curriculum has a direct impact on the performance of a learner. They reviewed different international educational research and found a positive correlation between the curriculum and the performance of a learner. While choosing or developing a curriculum, if the teacher considers the need, ability, interest, and cultural value of immigrant learners, then it helps immigrant learners to perform well in school. Parents can help teacher to understand the ability, interest, and cultural values of their children. Parents' involvement in school activities creates opportunity for parents to have a voice in school curriculum and school environment.

Other research found a strong relationship between family and community influence and the performance of a learner (Goldenberg, Gallimore, & other 2001; Paratore, Hindin, & other 1999; Kawakami, 1999; Lareau & Horvat, 1999). Family and community play an important role in the success of a learner. Kao (1995) focused on the cultural beliefs of Asian model minorities and noted that cultural beliefs and values have an impact on the success of an individual in an industrialized and commercial society. Bempechat & Drago-Severson (1999) also supported a similar idea. They pointed out factors that have an impact on the academic success of immigrant Asians. They noted that Asian mothers are very much devoted to their children. Suter (2000) found a strong correlation between the dedicative nature of Asian mothers and the performance of Asian

children. Supportive home environment is another important factor that is directly related to the achievement of a learner (Bempechat & Drago-Severson, 1999; Lee, 1999; Suter, 2000). These studies found a strong correlation between the achievement of a learner and the positive home environment. Different research noted that Asian students do well in school because they get more support from their home (Bempechat & Drago-Severson , 1999; Ogbu, 1999; Suter, 2000).

Some research also emphasized the cultural and community values as motivation factors of learning achievement. (Ogbu, 1999; 1994; Bempechat & Drago-Severson, 1999; Suter, 2000). Income, education, occupation, values, and life style are among the most frequently used variables to determine the social class status in the United State. Different cultures define social class and status in different ways. Research found that social class and status have an impact on the performance of a learner (Spencer, 1999; Ogbu, 1994). Kim and Choi (1994) noted that cultural philosophy played an important role on the performance of a learner. They explained how the Confucian philosophy influences the Chinese, Japanese, and Korean students to perform well in school.

Bempechat & Drago-Severson (1999) examined the ability and effort models. They noted that family and community motivate learners to increase their ability and effort. Kim & Choi (1994) explained that motivation from the family and the community comes in three different ways: learner itself, family, and community. According to this idea, learners do well because they like to perform well; learners do well because their parents want them to perform well; learners do well because they like to see their friends perform well. They also noted that the last one is a form of collective effort.

Shortcoming of the Previous Research

As mentioned a lot of research examined the role of parent involvement in home school and community (Yan & Lin, 2005; Lee & Bowen, 2006; Goyette & Xie, 1999; Bryant et. al 2000; Ogbu, 1994; 1987; Spencer, 1999; Kao, 1995; Muller, Stage & Kinzie, 2001; Okagaki, Frensch & Gordon, 1995; Padilla & Gonzaalez, 2001; Porter, 1999; Rumberger & Larson, 1998; Schneider & Lee, 1990) and the main goal of that research was to help the policymakers develop policies that directly helped the families in all categories help their children to succeed academically in American society.

However, most of the existing research put emphasis on the impact of parent involvement in secondary education. Few research put emphasis on parent involvement and its impact in elementary education. Although a number of studies examined the impact of parent involvement on children in elementary education, most of them looked at the home to school transition, and school readiness, factors that contributed to the academic achievement of the children in third and fourth grades. Only a small amount of research considered the impact of parent involvement on the academic performance of students in fifth grade. It is not clear how much variance parents can make by becoming involved in different activities with their children at home, school or community. Elementary education is the foundation of education. The academic achievement of the children in elementary education is very important. There is strong research support about the impact of parent involvement on the academic performance of older children and adolescents. But for the younger children, the relationship of parent involvement and school achievement is not clear. More research needs to be done to understand parent involvement and its impact on the math and reading achievement of the children in

elementary education.

The focus of most of the existing research is to understand the parent involvement and its impact on the academic performance of the children in European American, Asian, and Hispanic ethnic groups. Very little research has paid attention to African American children. More research should be done to know the impact of parent involvement on the academic performance of the African American young children.

The review of existing research helps us to recognize the background variables that they considered. To better explain the current topic of research we need more information about whether demographic variables, family structure, home environment, socio-economic status, level of education of parents and expectations of parents affect certain types of parent involvement. Still it is not clear what kind of parent involvement worked best for the low income and minority students. Although many studies looked at the parent involvement in different ethnic groups, income, parent education or other demographics variables, we still need to examine and compare variables with each other to see the variance of parent involvement and math and reading achievement of young children.

Socio-economic status is very important and research showed that it has an impact on the academic performance of children. We need more information about how socio-economic status varies in different ethnic groups and how much relationship can be explained between the parent involvement and socio-economic status of the children in different ethnic groups.

This study will address many of the weakness and gaps of the existing research. This research will provide information about the impact of parent involvement and its

impact on the academic performance of the students in fifth grade in American public schools. The parent involvement and academic performance will be explained based on the school, home and community contexts. This study will provide information for the educators and policymakers to create a strong family involvement program that benefit all students in all ethnic groups.

Table 1: *Matrix of Studies Included in the Review*

Author	Method	Indicators	Analysis/Criteria	Outcome
Brempechat & Drago-Severson (1999)	Review of educational research	Ability model & effort model, culture & meaning making ability	Compare research findings	Suggest to combine qualitative and quantitative research
Bryant, et.al.(2000)	Quantitative study, N = 521	Family child characteristics, family activities, child outcomes (literacy, innumeracy, social and behavior problem	Multiple regression	Parent involvement does not contribute to the cognitive development of a child
Cook, Habib, Philips, & other (1999)	4 year study, questionnaires, school records	School planning and management, social support, parent's involvement	Co-operation, children's need, problem solving, and decision by consensus	Did not improve parent involvement in school
Goyette & Xie (1999)	Quantitative study, NELS: 88, 90, 92 & 94 N = 24,599	Asian American and European American ethnic groups, SES, academic ability, parent education	Linear & Logistic multiple regression	Asian American ethnic group have higher educational expectations than European Americans
Hwa-Froelich & Westby,	Ethno-methodology (Interview,	South Asian immigrants, frameworks of	South Asian parents need more support,	Head start staffs need intensive training about

(2003)	Observation)	education & family	head start staffs are not aware about the cultural issues	multicultural issues
Kao (1995)	Quantitative study, NELS: 88 European American, Asian American, African American	Family background, family structure, home educational resources, student characteristics	Multivariate regression	Socio-economic status and home resources are positively related to the academic performance of the Asian American children
Kim & Choi (1994)	Comparative study	Child development and cultural context	Individualism, collectivism, socialization and Korean culture, acculturation	Kim & Choi (1994)
Lee & Bowen (2006)	Quantitative study, N = 415 Third to fifth grade	Ethnicity, poverty, parent education, social capital theory	Multiple regression, chi-square	Parent involvement has a significant impact on the child achievement
Lee & Brinton (1996)	N= 3 (elite universities) 397 male students, Survey	Father's education, Job search channels, employment outcomes	Characteristics of university graduates, the proportion of university graduates, multivariate analysis	Job search channels play most effective role. At least 22% fathers have university degree
Machamer & Gruber (1998)	Quantitative study, MSS N = 91,175 6^{th} , 9^{th}, 12^{th} grade student, 5 point Likert Type Scale American Indian Adolescents	Family connectedness, educational commitment, risk taking behavior, academic performance	Descriptive analysis, chi-square analysis	Low family connectedness is strongly associated with the low academic performance of American Indian Adolescents
Muller, Stage & Kinzie,	Quantitative, NELS: 88 African	Socio-economic status,	Hierarchical linear model	Socio-economic status and previous grade

(2001)	American, Latino, Asian American, European American	previous grade, gender, ethnicity		are strongly and positively associated with the academic performance of students in eighth grade
Okagaki, Frensch, & Gordon (1995)	Quantitative, High achievement N = 33, Low achievement N = 49 HSCQ questionnaire, Mexican America	Educational expectation, parent efficiency, racial barriers, parent behavior, demographics information	Descriptive analysis	Five levels of parenting practices are highly and positively associated with the academic performance of Mexican American children
Ogbu (1994)	Review of research	Minority children, economic adaptation, academic performance	Comparative and cross cultural perspectives,	The ability of an individual depends on the nature of society and culture
Ogbu (1987)	Qualitative study	School adjustment, academic learning, cultural background	Comparative and cross cultural perspectives	The community and society of minority groups contributes to school success or failure of their children
Orland (1990)	Quantitative, PSID survey, N = 6, 000	Ethnic groups, primary language, poverty level	Descriptive analysis	High poverty level is strongly associated with the academic performance of children in all ethnic groups
Padilla & Gonzaalez (2001)	Quantitative, N = 2,167 Mexican American high school student	Poverty, limited English proficiency, school practices,	Descriptive analysis, t test, ANOVA and Stepwise Regression	US born Mexican students perform lower than immigrant Mexican students in the school
Paratore,	66%=Bilingual	Unfamiliarity	Descriptive	Home portfolio

Hindin, Krol-Sinclair, & Duran (1999)	85%= Low income family, Ethnically diverse community, Interview	of American culture, lack of English proficiency, limited formal education, lack of parent ability to help their children	analysis	empowers parents to do more to support their children
Porter (1999)	Quantitative, N = 4,288 Second generation, Nine ethnic groups	Age, gender, English language proficiency, SES	Multiple regression	Nature of immigration and socio-economic status are strongly associated with the academic performance of the children
Rodriguez-brown, Li, & Albom (1999)	N= 60 (Hispanic family), Interview	Low English proficiency, 9 year school experience out side of U.S.A, cultural difference	Descriptive analysis	Low English proficiency is negatively related to the academic performance of the children
Rumberger & Larson (1998)	Quantitative, N = 574 (7^{th} grade students) N = 577 (9^{th} grade students)	Limited English proficiency, female, school launch program, foreign born, educational commitment, school engagement, educational achievement	Descriptive analysis	Students who have a limited English proficiency performed lower than the students who have high English proficiency or are from English only background
Schneider & Lee (1990)	Ethnographic study, Asian students	review of school records, student census, participant and non participant observation, semi-structured interviewed,	Socio-cultural factors and interpersonal interactions	East Asian students do well in the school because they share the values and aspirations of their parents through the home learning activities

		student essays		
Spencer (1999)	Qualitative & Quantitative	Social and cultural influence, school adjustment	Ecological perspectives	School adjustment is a part of human development process
Stanton-Salazar & Downburst (1995)	N = 205 (students), 6 schools, Mexican students, survey	Institutional support, school settings, communities and organizations	Descriptive Analysis	Social capital has an impact on the performance of immigrant students
Steinberg, Dornbusch & Brown (1992)	Quantitative study, N = 15,000 Asian American students, Hispanic adolescents	Parenting practices, family values, beliefs, academic success, parent's education	Descriptive analysis	Students who received support from peers and parents did significantly better in the school than those who did not receive any support from parents and peers
Yan & Lin (2005)	Quantitative study, NELS: 88 data base	Social capital, parent involvement, math achievement, ethnic groups	Multiple regression	Parent involvement has a significant impact on student achievement

Summary

This chapter synthesizes the related literature to provide the conceptual framework of the research. This chapter also identifies the gaps of existing research and clarifies the importance of this research. The extensive literature review indicates that parent involvement is strongly and positively related to the academic performance of the children. The next chapter will provide information about the methodology of this research.

CHAPTER III

METHODOLOGY

Introduction

This is a study about parent involvement and the math and reading achievement of young children. The purpose of this chapter is to discuss the methodology of this study. The chapter discusses the data, sample design, data collection method, and weighting procedure. This chapter also explains the statistical techniques that will be used for weighting, factor analysis, and reliability analysis to create a valid and truthful model of parent involvement composites. The chapter also focuses on the limitations associated with the methodology of this study.

The Early Childhood Longitudinal Study

Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) is a multisource and multimethod data file which focuses on the early school experiences beginning with kindergarten up to the fifth grade. It is a longitudinal data file that combines data from the base-year (kindergarten), first-grade, third-grade, and fifth-grade school years. This data file helps researchers to easily examine the growth and development of children between kindergarten and fifth grade without having to go through the process of merging several different data files. All children included in the longitudinal K-1 data file (released in 2002) and the K-3 data file (released in 2004) are also included in this ECLS-K to Fifth grade file which allow users to conduct K-1 and K-3, as well as K-5 analyses. Thus, this file can be used to study children's learning process and experience across school years.

The ECLS-(K to Fifth grade) is conducted by Westat under the sponsorship of the U.S. Department of Education, National Center for Education Statistics (NCES). Testing Service (ETS) in Princeton, New Jersey provided assistance to Westat to conduct this study.

Data were collected for the ECLS-K following a nationally representative cohort of children from kindergarten through high school. In the fall and spring of the 1998-99 school year, data were collected from the sample children in kindergarten. A total of 21,260 kindergartners throughout the nation participated in this study.

Sample Design in ECLS-K

The ECLS-(Kindergarten to Fifth grade) used a multistage probability sample design to select a nationally representative sample in the 1998-99 school year. There were about 220,000 children enrolled in 1,000 kindergarten programs during the 1998-99 school year who participated in the study. Children from both private and public schools participated in the study. The K–5 longitudinal data file is a child-level file. Each child's records were attached to all data that had been collected for that child from parent, teacher, and school, and from each round of data collection. The study is designed to provide comprehensive information about the school experience of young children.

The ECLS-(K to Fifth grade) used a dual frame, multi-stage sample design. In the first stage 100 Primary Sampling Units (PSU) were selected (PSUs were counties or group of counties). Both public and private schools were selected within the PSUs; children were then selected from these schools. In the fall of 1998, about 23 kindergarteners were selected within each of the sample schools.[1] In this study data were collected from children, parents, and teachers. The data collection instruments gave

[1] Most of the information is directly taken from ECLS-K handbooks.

emphasis on the cognitive, social, emotional, and psychomotor development of the child. The home, school and community contexts were considered in the data collection process.

Data Collection Method in ECLS-K

Data were collected from the parents, teachers, children and school administrators in six phases: fall 1998 and spring 1999 (Kindergarten), fall 1999 and spring 2000 (first grade), spring 2002 (third grade), and spring 2004 (fifth grade). The direct child assessments, parent interviews, teacher and school questionnaires, student record abstracts, and facilities checklists were included in the data collection instruments. The computer-assisted personal interviewing (CAPI) method was used for child assessments, telephone and in-person computer-assisted interviewing (CAI) was used to conduct the parent interview, and self-administered questionnaires were used to gather information from teachers, school administrators, and student records. Several in-person training sessions were conducted to prepare staffs for the purpose of data collection.

Trained supervisors and assessors managed the data collection activities within their assigned work areas. Each responsible supervisor within assigned work areas was responsible for supervising the assessors who conducted the child assessments and parent interviews. In order to ensure that the work of the supervisors was conducted in a standardized manner, field staff members who conducted the child assessments were required to complete certification exercises.

Usually the field supervisor contacted the school coordinator to confirm the dates of the assessment visits, identify the information of the ECLS-K sample children who were no longer enrolled at the school, identify the reading and mathematics or science

teachers and special education teacher for each sample child, review parental consent status, obtain information on special accommodations during assessment for the enrolled sample children, and answer any questions that the school coordinator might have.[2]

All children who were assessed during the base year (kindergarten) or whose parent interviews were completed in the base year (kindergarten) were eligible to be assessed in the first grade data collection process; all children who were assessed during the first grade or whose parent interviews were completed in the first grade were eligible to be assessed in the third grade data collection; and all children who were assessed during the third grade or whose parent interviews were completed in the third grade were eligible to be assessed in the spring fifth grade data collection. However, there were four exceptions: (1) children who became ineligible in an earlier round (because they died or moved out of the country); (2) children who were sub-sampled out in previous rounds because they moved out of the original schools and were not-sub sampled to be followed; (3) children whose parents emphatically refused to cooperate (hard refusals) in any of the data collection rounds since spring-kindergarten; and (4) children in the third-grade sample for whom there were neither first-grade nor third-grade data.[3]

Eligibility for the ECLS-(K to fifth grade) study was not dependent on the child's current grade, that is, children were eligible whether they had been promoted to fifth grade or retained in fourth grade.

Child Assessment

Several types of scores were used in the ECLS-(K to fifth) to describe the physical, social and cognitive development of the children in kindergarten, first grade,

[2] Most of the information is directly taken from ECLS-K handbooks
[3] Most of the information is directly taken from ECLS-K handbooks

third grade and fifth grade. The direct cognitive assessment contained items in reading and math in kindergarten, first grade, third grade and fifth grade; it contained items in general knowledge in kindergarten and first grade; and science was added to the assessment in fifth grade. There are five types of scores which can be used to describe the cognitive performance of the children. The present study will use Item Response Theory (IRT) scale scores to see the cognitive performance of the children in kindergarten, first, third and fifth grades. IRT scores were calculated by using IRT procedure. IRT used the pattern of right, wrong and omitted responses to the items actually administered in a test, and the difficulty, discriminating ability, and "guess ability" of each item to place each child on a continuous ability scale. [4]

Children who did not have enough proficiency in English were able to take their test in languages other than English. Children who spoke Spanish received a Spanish proficiency test in math (direct assessment), but they did not receive a direct assessment in math and reading. If children spoke a non-English language other than Spanish, data directly collected from the child were limited to their height and weight. The English proficiency of all children who were unable to complete the assessment in English language was continuously reassessed until it was judged to be adequate for them to be administered the ELCS-K to fifth grade assessments in English language.

Over periods of time, some students were tested and found to have disabilities that affected their learning. The ECLS-(K to fifth grade) provided one-to-one nature assessments for children with disabilities. In order to accommodate them in the direct cognitive assessment test, the ECLS-V (K to Fifth Grade) also allowed these children to use communication boards and pointing devices, and permitted a school-assigned person

[4] Most of the information is directly taken from ECLS-K handbook.

to sit with children during the assessment. A field test was conducted to verify reliability and validity of the direct cognitive assessment instruments before administrating it to the sample.

Parent Interview

Parent interviews were conducted both in the fall and spring in kindergarten and first grade; they were conducted only in the spring for third through fifth grades. Most of the interviews were conducted through computer assisted telephone interviewing (CATI). Computer assisted personal interviewing (CAPI) was conducted for those who did not have a telephone in their home or who were not comfortable in giving interviews over the telephone. Parents who did not speak English were able to give their interviews in a language other than English. Parents were asked to provide key information about their children: demographic information including age and gender; their relation to the child; race/ethnicity; family structure such as household members and compositions; parent involvement; home educational activities; child care experience; health of the child; education and employment status of the parents; and social skills and behavior of the child.

Data Analysis

Selecting Samples and Specifying Variables

Altogether 17,565 students were in the ECLS-(K to Fifth Grade) data file and 5,234 students were selected for this study. The following criteria were used for the sample selection: a) children who completed the ECLS-fifth grade cognitive battery in the spring; b) children who have both fall and spring round parent interviews; and c) children who are in fifth grade. Information about the home educational activities of the

children, school involvement of parents, extracurricular activities and use of community resources were taken from the interview of the parents during the fifth grade school year. Chosen variables in the conceptual framework and the hypothesized relationship of the variables with each other (for more information see the next section on factor analysis) were derived from previous research on parent involvement and student achievement that were discussed in the literature review in chapter II (also see figure 1 and figure 2).

Student Performance Variables

Cognitive outcomes of the children in math and reading for spring are the dependent variables of this research. The outcome was determined by eight IRT (Item Response Theory) scores: spring math and spring reading in kindergarten, first grade, third grade and fifth grade.

Reading Assessment

The reading assessment included questions about the skills of letter recognition (identifying upper and lower case letters by name), beginning sounds (associating letters with sounds at the beginning of words), ending sounds (associating letters with sounds at the end of words), sight words (recognizing common "sight" words), comprehension of words in context (reading words in context), literal inference (making inferences using cues that are directly stated with key words in text, e.g., recognizing the comparison being made in a simile), extrapolation (identifying clues used to make inferences, and using background knowledge combined with cues in a sentence to understand use of homonyms), evaluation (demonstrating understanding of author's craft, i.e., "how does the author let you know…," and making connections between a problem in the narrative and similar life problems), and evaluating non-fiction (critically evaluating, comparing

and contrasting, and understanding the effect of features of expository and biographical texts). The reliability of the overall reading ability was estimated to be .90.

Math Assessment

The math assessment questions included items about number and shape (identifying some one-digit numerals, recognizing geometric shapes, and one-to-one counting of up to ten objects), relative size (reading all single-digit numerals, counting beyond ten, recognizing a sequence of patterns, and using nonstandard units of length to compare objects), ordinality, sequence (reading two-digit numerals, recognizing the next number in a sequence, identifying the ordinal position of an object, and solving a simple word problem), addition/subtraction (solving simple addition and subtraction problems), multiplication/division (solving simple multiplication and division problems and recognizing more complex number patterns), place value (demonstrating understanding of place value in integers to the hundreds place), rate and measurement (using knowledge of measurement and rate to solve word problems), fractions (demonstrating understanding of the concept of fractional parts), and area and volume (solving word problems involving area and volume, including change of units of measurement). The reliability of the overall math ability was estimated to be .90.

Parent Involvement Variables

From the parent interviews questionnaire for the parents of the children in fifth grade during the spring semester, this study obtained the information about home educational support for the children, school involvement of the parents, extracurricular activities of the children, and use of community resources. Each type of activity used

different response scales. The selected independent variables and their original appearance in the survey questions are presented in Appendix B.

Home Educational Support

Home educational supports include home cognitive stimulation activities and home resources of the children. Home educational support questions asked about the number of books and records available to the children in the home, and about the availability of computer and Internet in the home. Home cognitive stimulation activities included questions about engagement of children in home learning activities, telling stories to children, singing to/with children, doing art activities, playing games, talking about nature, building things and playing with children. Parents were asked to describe how often they do such activities with their children on a weekly basis (i.e. not at all, once or twice in a week, 3 to 6 times in a week, every day).

Involvement at School

To understand the degree of their involvement in school, parents were asked about four types of involvement spanning from the beginning of the school year to the present. Parents were asked if they have attended a school or class event, have participated in the fund raising programs of the school of the children, have given voluntary service in the school, have served on committees, or have attended an open house or back-to-school night.

Involvement in the Community

This item explores the degree to which families make use of extracurricular activities and community resources available to their children. Parents were asked whether the child took any extracurricular lesson during the fifth grade school year.

Extracurricular activities included music lessons, art lessons, dance lessons, involvement in organized clubs like scouts and organized art performance. Use of community resources by children was determined by asking parents about the participation of the child in different activities over the course of the past month. Activities include visiting the library, attending playground activities, concert or other live shows, visiting an art gallery, museum or historical site, and going to a zoo, an aquarium, or a petting farm.

Background Variables

Background variables of the children were used as control variables that included gender and family background characteristics of the children; income and ethnicity were excluded from this group of variables. Gender was indexed by a dummy variable that identifies female children. The education level of parents, SES score and poverty level—labeled as below poverty level and upper poverty level—were considered to be background variables. The parent SES score was a continuous score that considered the most recent job held by the parents. Family type was indexed by a dummy variable identifying single parent families. Race and ethnicity were classified into four categories: African American, Hispanic, Asian and Others. As mentioned earlier, all background variables except ethnicity and income variables were controlled. Ethnicity and income played dual functions; when ethnicity served as an independent variable, income was the control variable, and vice versa.

Analysis Procedure of the Study

Weighting

This study uses a secondary data file (ECLS-K to fifth) which represents a national sample. The data are comprehensive and have some positive benefits. First, the

large sample decreases the standard error of the mean. It also decreases the chances of rejection of this study's null hypothesis (t and F value required). Finally, the size of the sample represents a population better than a small sample group (Gay & Arasian, 2000).

Though the ECLS (K to fifth grade) sample is nationally representative, it cannot be assumed that the sample exactly replicates the larger national population. Each person is different. The unique identity of human beings causes sample error. In turn, sample error may yield a different mean of the sample than of the population; this sampling error becomes a threat to the validity of the result (Gay, 1987).

The ECLS (K to fifth grade) data may cause sampling error for five reasons. First, there is a nonresponse in each stage of data collection. Second, ECLS (K to fifth grade) used a multistage sampling process. The schools were selected under the 100 PSUs and children were directly sampled to the PSUs. Parents of the sample children and teachers in sample schools were automatically included in the survey. Special teachers were included in the sample if they taught any of the sample children. The third cause of sampling error is the fact that, to meet the sample goal, the APIs (Asian Pacific Islanders) were over sampled at 2.5 times than the rate of non API students. In order to obtain correct estimates of this and other groups, it will be necessary to weight the data. A fourth issue is that sample characteristics may be different from the population. Finally, sampling error can occur when it is necessary to adjust the differential selection probabilities and coverage biases.

All of these issues are considered before conducting the data analysis of the research. To indicate the relative strength of the data, C2_6FPO was suggested to do longitudinal data analysis. The data are adjusted for interpretation with the design effect

associated with the data. The design effect is the ratio of the sampling variance on the basis of the complex design. In the ECLS (K to fifth grade) data, the mean design effect associated with the data of this study is 2.018. The researcher created a relative weight with the child level weight (C2_6FPO) by the ratio of its mean, then by its design effect. The new adjusted weight was used for subsequent analysis.

Factor and Reliability Analysis

Parents can be involved with their children in different ways. Parents can participate in different activities with their children at home, at school, and in the community. These activities can be measured and classified. ECLS (K to fifth grade) data include many parent involvement variables. In this study, the researcher used a large number of parent involvement variables in order to assess their impact on the math and reading achievement of the children. To use a large number of variables and to deal with them in a manageable way in the analysis, factor analysis was conducted. Factor analysis involves grouping a large number of variables into a small number of clusters called factors (Gay, 1987). Factor analysis computes the correlations among all the variables and derives factors by finding groups of variables that are highly correlated with each other (McMillan & Schumacher, 1997).

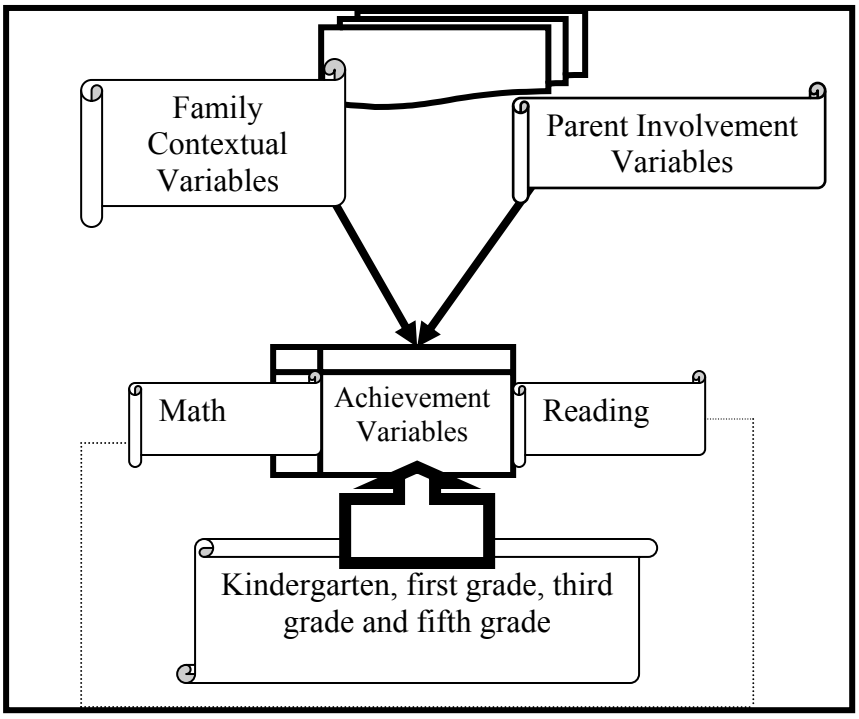


Figure 3: Initial measurement model of parent involvement and math and reading achievement of the children.

This study considered 37 variables related to parent involvement. The selection of variables was based on the literature review which is described in figure 3 (page 72) as a preliminary measurement model and in figure 4 as a final measurement model. The parent involvement questionnaires are a combination of parent's activities that school personnel design to increase parental involvement in the educational process of their children.

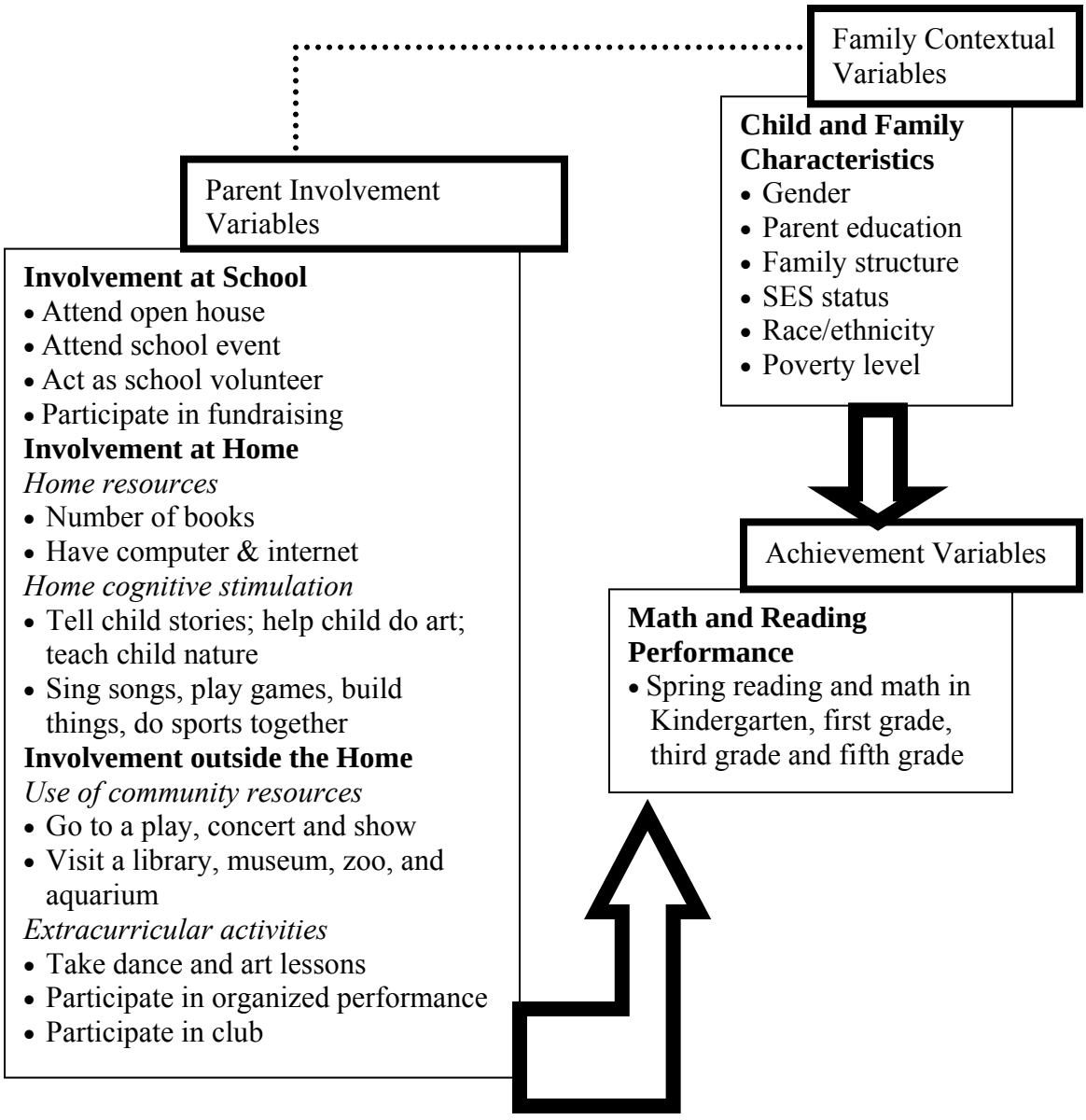


Figure 4: Final measurement model of parent involvement and math and reading achievement of the children.

The principal component analysis and varimax rotation with Kaiser normalization on the items were used for the factor analysis of the study. Using this rotation, a series of models was tested, starting with one factor and continuing until the model was built to include all five factors and 36 tested variables. These five factors were used to measure parent involvement. In social science research, factor loading greater than .50 is

considered a good fit with the data. In this research, the factor loading was greater than .50 and had an eigenvalue greater than 1.

The five factors considered in this study were home resources, home cognitive stimulation, use of community resources, extra-curricular activities, and parent participation and volunteering in school-related activities. These five factors were grouped into three dimensions: parent involvement at home, parent involvement in the community, and parent involvement in school. Table 1 represents the cognitive performance variables, Table 2 represents the child and family characteristics or

Table 2: *Math and Reading Performance Variable List and Description*

Number	Name of the variables	Description of the variables
C1	C2R3RSCL	Spring reading IRT scale score
C2	C2R3MSCL	Spring math IRT scale score
C3	C4R3RSCL	Spring reading IRT scale score
C4	C4R3MSCL	Spring math IRT scale score
C5	C5R3RSCL	Spring reading IRT scale score
C6	C5R3MSCL	Spring math IRT scale score
C7	C6R3RSCL	Spring reading IRT scale score
C8	C6R3MSCL	Spring math IRT scale score

background variables, Table 3 represents the parent involvement variables of this research, and Table 4 represents the results of the factor loadings. Factors greater than .05 are marked in bold and italic faced types.

Table 3: *List of the Control Variables/Background Variables of the Research*

Number	Name of the variables	Description of the variables
1	GENDER	Child Composite Gender
2	RACE	Child Composite Race
3	W5PARED	Parent Highest Education
4	W5POVRTY	Poverty Level
5	P6HFAMIL	Family Type
6	W5SESL	SES Prestige Score

Table 4: *List of Parent Involvement Variables*

Category	Name of the variables	Description
Home Resources	P6CHLBOO P6INTACC	About how many children's books does {CHILD} have in your home now, including library books? Do you have access to the Internet at home?
Home Cognitive Stimulation	P5TELLST P5SINGSO P5GAMES P5NATURE P5BUILD P5SPORT	In the past weeks, how often • told the child stories • sang songs with child • played games or do puzzles with child • talked about nature or do science project with the child • built something or play with construction toy with child • played sports or exercise together
Parent Involvement in School	 P6ATTENB	Since the beginning of this school year have you or the other adults in your household…. • attended an open house or back-to-school night?

	P6ATTENS P6VOLUNT P6FUNDRS	• attended a school or class event, such as a play, sports event, or science fair? • volunteered at the school or served on a committee? • participated in fundraising for {CHILD}'s school?
Extracurricular Activities	 P6DANCE P6ARTCRF P6ORGANZ P6CLUB P6MUSIC P6ATHLET P6HOMECM	Outside of school hours in the past year, has {CHILD} participated in: • dance lessons • art classes or lessons, for example, painting, drawing, sculpturing • organized performing arts programs, such as children's choirs, dance programs, or theater performances • organized clubs or recreational programs, like scouts • music lesson • participate in athletic event Do you have a home computer that {CHILD} uses?
Use of Community Resources	P6LIBRAR P5MUSEUM P5ZOO P5CONCRT	In the past month, that is, since {MONTH} {DAY}, has anyone in your family done the following things with {CHILD}? • visited a library with {CHILD}? • visited an art gallery, museum, or historical site? • visited a zoo, aquarium, or petting farm? • gone to a play, concert, or other live show?

After the factor analysis, a reliability check was conducted for the variables that had enough potential to be grouped under one factor. A factor with alpha lower than .5 was removed from the model. Table 5 represents the reliabilities, eigenvalues, and percent of variance for each factor. Each of these factors was computed using average

score and standardized for all subsequent analysis with a mean of 0 and a standard deviation of 1.

Table 5: *Factor Matrix for the Parent Involvement Variables*

Variables Description	**Indicators and Factors**				
	F1	F2	F3	F4	F5
Home Learning Climate					
V1 How many books child has(P6CHLBOO)	.055	-.048	-.054	.083	**.849**
V2 Have internet access (P6INTACC)	-.010	.207	-.117	.102	**.894**
Home Cognitive Stimulation					
V3 How often you tell stories(P5TELLST)	**.771**	-040	-.060	-.026	.113
V4 How often you all sing songs (P5SINGSO)	**.725**	-.038	-.045	-.057	.092
V5 How often you all play games (P5GAMES)	**.814**	-.006	-.026	.005	.056
V6 How often you teach nature (P5NATURE)	**781**	-.004	-.036	.012	.110
V7 How often you all build things(P5BUILD)	**.769**	.008.	014	-.023	.102
V8 How often you all build sports (P5SPORT)	.**766**-	.008	-.055	.014	.036
V9 How often you do art together (P5HELPAR)	**.788**	-.013	-.020	-.016	.099
Outside of Home Enrichment Activities					
Extracurricular Art Lessons and Performance					
V 10 Take Music lesson (P6MUSIC)	013	**.712**	.041	-.056	-.117
V11 Takes dance lessons (P6DANCE)	-.003	**.714**	.024	.127	.034
V12 Takes art lessons (P6ARTCRF)	-.006	.**752**	-.015	.087	.010
V13 Organizes club (P6CLUB)	-.007	**.613**	.078	-.017	-.030
V14 Participates in organized perfor.(P6ORGANZ)	-.011	**.744**	.015	.078	-.057
V15 Have home computer (P6HOMECM)	.013	.**634**	.037	-.638	.018
V16 Participate in athletic event (P6ATHLET)	.013	**.712**.	041	-.056	-.117
Use of Community Resources					
V17 Visited the library (P6LIBRAR)	.001	-.007	**.569**	.000	.026
V18 Went to the concert, play, show (P5CONCRT)	.065	.040	.**768**	.025	-.295
V19 Visited a museum (P5MUSEUM)	080	.035.	**.770**	.020	-.305
V20 Visited a zoo, aquarium (P5ZOO)	.014	.038	.**793**	.047	-.257
Parental Participation in School-related Activities					
V21 Attended school event (P6ATTENS)	-.021	.064	-.015	**.752**	-.022
V22 Attended open house (P6ATTENB)	-.006	.034	-.083	**.689**	.087
V23 Acted as school volunteer (P6VOLUNT)	-.018	.096	-.025	.**742**	-.142
V24 Participated in fundraising (P6FUNDRS)	-.024	.050	-.002**.**	**.714**	-.019

Table 6: *Measures of Parent Involvement Predictors*

Factors and Indicators	**Cronbach's Alpha**	**% Variance Explained**
Home Cognitive Stimulation	.925	76.3
How often you tell stories(P5TELLST)		
How often you all sing songs (P5SINGSO)		
How often you all play games (P5GAMES)		
How often you teach nature(P5NATURE)		
How often you all build things(P5BUILD)		
How often you all build sports (P5SPORT)		
How often you do art together (P5HELPAR)		
Involvement at School		
School Participation and Volunteering	.702	62.6
Attended school event (P6ATTENS)		
Attended open house (P6ATTENB)		
Acted as school volunteer (P6VOLUNT)		
Participated in fundraising (P6FUNDRS)		
Involvement Outside of the Home		
Use of Community Resources	.754	57.4
Visited the library (P6LIBRAR)		
Went to the concert, play, show (P5CONCRT)		
Visited a museum (P5MUSEUM)		
Visited a zoo, aquarium (P5ZOO)		
Extracurricular Activities	.829	62.6
Takes music lesson (P6MUSIC)		
Takes dance lessons (P6DANCE)		
Takes art lessons (P6ARTCRF)		
Organized club (P6CLUB)		
Participates in organized perfor.(P6ORGANZ)		
Has home computer (P6HOMECM)		
Participates in athletic event (P6ATHLET)		

Descriptive Analysis

The first step of data analysis is to describe or summarize data by using descriptive statistics. Descriptive statistics permits the researcher to meaningfully describe or characterize many scores within a small number of indices (McMillan & Schumacher, 1997). Descriptive statistics is sometimes referred to as a summary of statistics which permits a researcher to summarize, organize and reduce the large numbers of items in an observation (McMillan & Schumacher, 1997). In this research descriptive statistics will be performed to summarize the data.

t Test

t test is used to see whether there is a meaningful significant difference at a selected probability level (McMillan & Schumacher, 1997). t test compares the mean of two different groups and describes whether there is a significant difference between the two groups. This research attempts to see whether there is a significant difference between the performance of the children in upper poverty level and children in lower poverty level, and also between male and female students. Bonferroni probability level was set at .05 for the two income groups, and for gender, to avoid the Type I error.

ANOVA

ANOVA allows a researcher to test the differences between all groups and make more accurate probability statements than what could be done through a series of t tests (McMillan & Schumacher, p. 368, 1997). ANOVA uses the variances of the groups to calculate F value that reflects the degree of differences of the mean. This study will use ANOVA to compare the math and reading performance of the children based on their ethnic identity and parent education. If the result shows a significant difference, a post –

hoc analysis will be conducted to find the mean of the group that is different from the others.

Multiple Regression Analysis

Multiple regression is a method that investigates the pattern among many variables (McMillan & Schumacher, 1997). It is a complex statistical procedure that allows the researcher to understand and analyze a complex situation by dealing with many variables simultaneously (Gay, 1987). To determine the relationship between parent involvement variables, background variables and math and reading performance variables this study will use multiple regression.

A total of 37 (25 by race and 12 by income levels) Ordinary Least Squares Regression Models were conducted to test the relationships between parent involvement and the academic achievement of the children and how the relationships varied according to race and economic backgrounds of the children. The regression models for these are described in table 7.

Table 7: *Multiple Regression Measurement Model*

Measure	**Model 1**	**Model 2**
For Race and Ethnic Groups	$\hat{Y} = \beta_0 + \beta_1 \textit{female} + \beta_2 \textit{single parent} + \beta_3 \textit{parent education} + \beta_4 \textit{parent occupation} + \beta_5 \textit{below poverty} + \varepsilon$	$\hat{Y} = \beta_0 + \beta_1 \textit{female} + \beta_2 \textit{single parent} + \beta_3 \textit{parent education} + \beta_4 \textit{parent occupation} + \beta_5 \textit{below poverty} + \beta_6 \textit{home resources} + \beta_7 \textit{home cognitive stimulation} + \beta_8 \textit{school involvement} + \beta_9 \textit{extra curricular activities} + \beta_{10} \textit{use of community resources} + \varepsilon$
Here, $\hat{Y}$ = Spring IRT score, the dependent variable, β_0 = Constant or intercept, or the value for achievement when all predictor variables equal zero, β_1 =The average slope when a child's gender – Female is used to predict achievement, β_2 =The average slope when a child family type – single parent is used to predict achievement, β_3 = the average slope when a child's *parent education* – is used to predict achievement, β_4 = The average slope when a child's *Parent occupation* – is used to predict achievement, β_5 = The average slope when a child's *family income* – is used to predict achievement, β_6 = The average slope when a child's *home resources* – is used to predict achievement, β_7 =The average slope when a child's *home cognitive stimulation* – is used to predict achievement, β_8 = The average slope when a child's *school participation and volunteering* – is used to predict achievement, β_9 =The average slope when a child's *extracurricular activities* – is used to predict achievement, β_{10} =The average slope when a child's *community resources* – is used to predict achievement and ε = Error term, the unexplained variance associated with the model.		
Measure	**Model 4**	**Model 5**
Two Income Groups	$\hat{Y} = \beta_0 + \beta_1 \textit{female} + \beta_2 \textit{single parent} + \beta_3 \textit{parent education} + \beta_4 \textit{parent occupation} + \beta_5 \textit{African American} + \beta_6 \textit{Hispanic} + \beta_7 \textit{Asian} + \beta_8 \textit{Others} + \varepsilon$	$\hat{Y} = \beta_0 + \beta_1 \textit{female} + \beta_2 \textit{single parent} + \beta_3 \textit{parent education} + \beta_4 \textit{parent occupation} + \beta_5 \textit{African American} + \beta_6 \textit{Hispanic} + \beta_7 \textit{Asian} + \beta_8 \textit{White} + \beta_9 \textit{home resources} + \beta_{10} \textit{home cognitive stimulation} + \beta_{11} \textit{school involvement} + \beta_{12} \textit{extra curricular activities} + \beta_{13} \textit{use of community resources} + \varepsilon$
$\hat{Y}$ = Spring IRT score, the dependent variable, β_0 = Constant or intercept, or the value for achievement when all predictor variables equal zero, β_1 = The average slope when a child's *gender* – Female is used to predict achievement, B_2 = The average slope when a child *family type* – single parent is used to predict achievement, β_3 =The average slope when a child's *parent education* – is used to predict achievement β_4 =The average slope when a child's *Parent occupation* – is used to predict achievement, β_5 = The average slope when a child's *ethnicity –AFRICAN AMERICAN* is used to predict achievement, β_6 = The average slope when a child's *ethnicity –HISPANIC* is used to predict achievement, β_7 = The average slope when a child's *ethnicity –ASIAN* is used to predict achievement β_8 = The average slope when a child's *ethnicity –OTHERS* is used to predict achievement, β_9 =The average slope when a child's *home resources* – is used to predict achievement, β_{10} = The average slope when a child's *home cognitive stimulation* – is used to predict achievement, β_{11} = The average slope when a child's *school participation and volunteering* – is used to predict achievement, β_{12} = The average slope when a child's *extracurricular activities* – is used to predict achievement, β_{13} =The average slope when a child's *community resources* – is used to predict achievement, and ε = Error term, the unexplained variance associated with the model.		

Summary

This chapter introduced the ECLS (K to Fifth grade) data and described the methodology of the research. A factor analysis was conducted to select the variable of this research. This study used t test, ANOVA, multiple regression to analyze the data. The next chapter will present the result of the data analysis.

CHAPTER IV

FINDINGS OF THE RESEARCH

Introduction

The purpose of this study was to examine the impact of different types of parenting practices at home, as well as variances in school and community, on the math and reading achievement of young children over periods of time. This study also investigated the variance in different types of parenting practices based on the SES and ethnic identity of parents. This chapter describes the findings of this research.

The findings of this research are presented in three parts. The first part discusses the impact of parent involvement from a wide range of perspectives both inside and out side of the home. The second part examines how specific types of parent involvement influence the reading and math achievements of the children at the end of the kindergarten, first grade, third grade and fifth grade school years. In the third part, multiple contextual factors are analyzed to see their impact on the overall academic achievement of children at the end of the kindergarten, first grade, third grade and fifth grade school years.

Results of the Descriptive Analysis by Income

Background Variables

Table 8 showed the mean and standard deviation of the background variables of two income groups defined by the terms “below poverty level” and “above poverty level.” For simplicity, only the weighted mean and standard deviation were analyzed and discussed. The findings indicated that 47% of the children belonging to single parent families lived below the poverty level. The mean of the parent education for the below

poverty level group was 1.75 which means parents of the children who lived in below the poverty level had either 12th or below 12th grade education. On the other hand parents of the children who lived above the poverty level had bachelors or higher professional degrees (mean = 2.16, SD =.45).

Findings also revealed that a higher number of Hispanic and African American students lived below the poverty level than did European American and Asian students. 27% of African American, 33% of Hispanic and 2% of Asian children lived below the poverty level. In contrast, 70% of European American children lived above the poverty level. The findings also indicated that 51% of the female children lived below the poverty level.

Parent Involvement Variables

Table 8 depicts the weighted mean and standard deviation for parent involvement variables in below and above poverty level groups. Five variables were tested to explore the impact of parent involvement. Five parent involvement variables were selected through a factor analysis. The parent involvement variables were coded on standard score where 0 represents mean, +1 represents above the mean and –1 represents

Table 8: *Summary of Descriptive Statistics: Background and Parent Involvement Variables by Income*

Variables	Below Poverty Mean (SD) N = 998	Above Poverty Mean (SD) N = 3833	t
Single Parent	.47(.50)	.20(.40)	16.31***
Parent Education	1.75(.48)	2.16(.45)	-24.50***
Asian	.02(.15)	.02(.16)	-.74

Hispanic	.33(.47)	.15(.35)	11.18***
African American	.27(44)	.12(.32)	10.04***
White	.37(.48)	.70(.46)	-19.11***
Female	.51(.50)	.51(.50)	-.22
Home Resources	-.77(1.31)	.13(.83)	-20.44***
Home Cognitive Stimulation	.06(.70)	-.01(.96)	2.37
Use of Community Resources	.14(.68)	-.03(1.01)	5.64**
Involvement at School	.53(.92)	-.07(1.18)	17.30**
Extracurricular Activities	.18(.99)	.01(.76)	5.03

*p<.05, **P<.01, ***P<.001, ****P<.0001,
Standard deviation are presented in the parenthesis,
All the scores in parent involvement variables are standardized factor scores with a mean of 0 and standard deviation of 1.
Mean and Standard deviation were computed by using normalized weight.

the below the mean. Results indicated a significant difference in the variables of availability of home resources, use of community resources and parent involvement at school, and between children in below poverty and above poverty level groups. The findings also indicated that children belonging to the below poverty level group had less home resources than children belonging to above poverty level group. No significant difference was found for the home cognitive stimulation and extra-curricular activities variables between students below the poverty level and students above the poverty level. However parents who lived above the poverty level were involved in less extracurricular activities, used less community resources and were involved less in school activates than the parents who lived below the poverty level The standard deviation for the variable of

home resources in below poverty and above poverty level was 1.31 vs. .83; in the use of community resources variable, the standard deviation was .68 vs. 1.01; and the standard deviation of the involvement at school variable was .02 vs. 1.18.

Table 9: *Summary of Descriptive Statistics: Math and Reading Achievement by Income*

	Math			Reading		
Variables	Below Poverty Mean (SD)	Above Poverty Mean (SD)	t	Below Poverty Mean (SD)	Above Poverty Mean (SD)	t
Kindergarten	26.25(9.32) N= 997	34.42(11.90) N= 3826	-23.19***	30.17(14.46) N= 997	41.26(15.43) N= 3826	-21.26
First grade	47.94(13.58) N= 995	59.85(16.70) N= 3828	-23.44***	55.44(23.34) N= 995	74.09(23.58) N= 3828	-22.40
Third grade	77.14(20.14) N= 992	94.99(21.02) N= 3815	-24.64	97.49(28.69) N= 992	121.32(26.23) N= 3815	-23.71
fifth grade	97.81(22.76) N= 993	115.95(20.53) N= 3813	-22.82***	120.16(26.90) N= 993	142.24(22.48) N= 3813	-23.79***

*p<.05, **P<.01, ***P<.001, ****P<.0001,
Standard deviation are presented in the parenthesis,
All the scores in parent involvement variables are standardized factor scores with a mean of 0 and standard deviation of 1.
Mean and Standard deviation were computed by using normalized weight.

Outcome Variables

Table 9 illustrates the mean and standard deviation of reading and math achievements in below poverty level and above poverty level groups. For simplicity only weighted mean and standard deviation were presented in the table.

With respect to the academic achievement of young children, there was a significant difference between two groups, children in below and above poverty level, in

math performance in kindergarten, first grade, and fifth grade. No significant difference was found in the math achievement in third grade between the two poverty level groups. However, a further investigation explained that children who lived above the poverty level scored higher in math than children who lived below the poverty level. The mean and standard deviation in the math achievement for the children in a below the poverty level family in kindergarten was 26.25(9.32), in first grade 47.94(13.58), in third grade 77.14(20.14), and in fifth grade 97.81(22.76). In contrast, the mean and standard deviation in the math achievement for the children above the poverty level families in kindergarten was 34.42(11.90), in first grade was 59.85(16.70), in third grade was 94.99(21.02), and in fifth grade was 115.95(20.53).

For the reading achievement, a significant difference was found in the reading achievement among fifth grade students, but no significant difference was found in kindergarten, first grade, and third grade. However, a further investigation indicated that children who lived above the poverty level scored higher in reading than children who lived below the poverty level. The mean and standard deviation to the reading achievement for the children below the poverty level families in kindergarten was 30.17(14.46), in first grade was 55.44(23.34), in third grade was 97.49(28.69), and in fifth grade was 120.16(26.90). In contrast, the mean and standard deviation to the reading achievement for the children above the poverty level families in kindergarten was 41.26(15.43), in first grade was 74.09(23.58), in third grade was 121.32(26.23), and in fifth grade was 142.24(22.48). It should be noted that the mean difference in reading and math achievement increases as the grade level of the children increases.

Result of Descriptive Statistics by Race/Ethnicity

In the following section the result of descriptive statistics will be analyzed and discussed based on children in different ethnic groups.

Background Variables

Table 10 shows the weighted mean and standard deviation for the parent involvement and background variables of the four ethnic groups and of the total sample. The mean of the total sample indicated that 21% of children came from families with a single parent, 51% of them were female, and 19% lived in the below poverty level group. The total sample mean for parent education was 2.10, which showed that most of the parents of the sample children had at least a college or an associate degree.

African American, Hispanic and Asian children were compared with European American children in terms of single parent, parent education, and poverty level. Findings showed a significant difference between European American and African American, as well as between European American and Hispanic ethnic groups in the number of single parent families, level of parent education, and number of families below the poverty level. No significant difference was found among the female students in the four ethnic groups. In terms of parent education, Asian and European American parents had comparatively higher education than Hispanic and African American parents. The lowest number of Asian children (mean .12) and the highest number of African American children (mean .51) came from single parent families. Parents of Asian children had comparatively higher SES (mean .70) than that of the parents of all other ethnic groups. Hispanic and African American children lived below the poverty level more than Asian and European American children. The mean for students in the below poverty level group

Table 10: *Summary of Descriptive Statistics: Parent Involvement and Background Variables by Race*

Variables	White With Other Race N= 7,040		African American N= 1,165		Hispanic N= 2,063		Asian N= 708		Total N= 10,976	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Parent SES	.19	.75	-.45***	.72	-.46***	. 71	.70	.89	-.01	.81
Single Parent	.16	.37	.51***	.50	.23***	.42	.12	.32	.21	.41
Parent Education	2.20	.46	1.9***	.43	1.86***	.54	2.15	.56	2.10	.50
Female	.51	.50	.50	.50	.51	.50	.49	.50	.51	.50
Below Poverty Level	.10	.30	.41***	.49	.35***	.48	.22	.42	.19	.39
Use of Community Resources	.02	.83	-.04**	1.31	.01	1.03	-.21	1.74	-.01	1.00
Parent Involvement in School	-.14	.94	.29***	1.06	.25***	1.07	.27*	.93	-.01	1.00
Extracurricular Activities	-.03	.78	.01	1.51	.14***	1.02	-.08	1.6	-.01	1.00
Home Resources	.16	.83	-.45***	1.24	-.34***	1.22	.12	.89	-.01	1.00
Home Cognitive Stimulation	.04	.84	-.05	1.27	-.06	1.04	-.28	1.68	.01	1.00

*p<.05, **P<.01, ***P<.001, ****P<.0001,
Standard deviation are presented in the parenthesis,
All the scores in parent involvement variables are standardized factor scores with a mean of 0 and standard deviation of 1.
Mean and Standard deviation were computed by using normalized weight.

for African American children was .41; for Hispanic children was .35; for Asian children was .22; and for European American children the mean was .10.

Parent Involvement Variables

Five parent involvement variables have been chosen for this study. In terms of using community resources, the findings indicated a significant difference between European American and African American children; the mean difference between these two groups is .50. In the parent involvement at school variable, a significant difference is found between European American and African American, between European American and Hispanic, and between European American and Asian children. The mean difference in the parent involvement at school variable for European American was -.14, for African American children was .29, for Hispanic children it .25, and for Asian children was .27. For the extracurricular activities, a significant difference was found between European American and African American groups, and between European American and Hispanic ethnic groups.

Outcome Variables

Table 11 illustrates the findings of the outcome variables. The findings indicated a significant difference in math and reading achievements in kindergarten, first grade, and fifth grade between European American and African American, and European American and Hispanic children. Asian children showed a significant difference in math achievement only in kindergarten. There was no significant difference found in reading achievement in third grade among the ethnic groups. European American and Asian students' math achievement was comparatively higher than African American and Hispanic students'. One noticeable finding was that when the student's grade level went

Table 11: *Summary of Descriptive Statistics: Math and Reading Achievement Variables by Race*

Variables	European American			African American			Hispanic			Asian			Total		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Kindergarten:															
Math	35.36	11.86	10,593	27.93***	9.46	2,409	28.54***	10.15	2,950	30.78**	17.47	1,083	32.83	12.17	17,035
Reading	42.11	14.03	10,593	36.83***	11.65	2,409	29.45***	19.19	2,950	39.16	23.20	1,083	38.99	16.19	17,035
First Grade:															
Math	60.79	17.01	10,314	49.04***	13.93	2,350	52.01***	14.97	2,871	57.53	19.55	1,068	57.40	17.11	16,603
Reading	74.58	22.48	10,314	63.27	19.97	2,350	58.10	27.98	2,871	75.12	27.06	1,068	70.17	24.46	16,603
Third Grade:															
Math	96.36	20.92	8,900	78.24***	20.56	1,857	84.56***	21.43	2,581	95.61	22.57	951	91.82	22.17	14,289
Reading	122.57	26.37	8,900	1.2.56***	27.97	1,857	107.05***	27.39	2,581	118.87	24.02	951	116.92	27.81	14,289
Fifth Grade:															
Math	117.81	20.12	7,100	98.19***	22.72	1,281	107.15***	21.86	2,110	119.66	20.51	785	113.72	21.93	11,276
Reading	144.03	22.65	7,100	125.18***	25.36	1,281	130.00***	24.07	2,110	140.70	22.47	785	139.03	24.34	11,276

*p<.05, **P<.01, ***P<.001, ****P<.0001,
Standard deviation are presented in the parenthesis,
All the scores in parent involvement variables are standardized factor scores with a mean of 0 and standard deviation of 1.
Mean and Standard deviation were computed by using normalized weight.

higher, the standard deviation of the math and reading achievement of each ethnic group became larger. The standard deviation of math achievement for European Americans at kindergarten was 1.86 and at the fifth grade it became 20.12; for African Americans, in the kindergarten it was 9.46 and at the fifth grade it became 25.36; for the Hispanic group, at the kindergarten it was 10.15 and at the fifth grade it became 24.09; and for the Asian children, at the kindergarten it was 17.47 and at the fifth grade it became 22.47.

Result of the Multiple Regression

All the regression models of this research involved two steps: step one considered only the background variables and step two considered both parent involvement indicators and background variables. The first part of the analysis illustrated how well the background variables explained the reading and math achievement for the children in European American, African American, Hispanic and Asian ethnic groups as well as the achievement for poor children in kindergarten, first and third and fifth grades. The second part of the analysis highlighted the changes in relationship between achievement and background variables when parent involvement indicators were entered in to the model. For simplicity, the results of the step two are interpreted in the following section.

Analysis by Ethnicity

In the following section, the effects of parent involvement on the math and reading achievement in kindergarten, first grade, third grade and fifth grade will be discussed for the children in European American, Hispanic, African American and Asian ethnic groups.

Math Performance of the European American Children

Tables 12 to 15 indicate the result of multiple regression on the math performance for the European American children in kindergarten.

Effects of Parent Involvement on Math in Kindergarten

Table 12 depicts the result of multiple regression on the math performance for the European American children in kindergarten.

Background variables. The strongest predictor of the math achievement for the European American children in kindergarten was parent SES which contributed to .28 standard deviation increase in math achievement. The achievement of female European American students was a .05 standard deviation higher than the achievement of male European American students in math in kindergarten. Poverty, parent education and being with a single parent were negatively associated with the math performance of European American children in kindergarten which predicted a decrease of a .02, .01 and .03 standard deviation respectively.

Table 12: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Math Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	5.241***	.414	.339***
Single Parent	-.801	.550	-.026
Parent Education	-.499	.632	-.019
Below Poverty Level	-1.507*	.719	-.041*
Female	.961*	.406	.040*
R^2 = .13			
Step 2			
Parent SES	4.394***	.444	.284***

Single Parent	-.704	.580	-.022
Parent Education	-.222	.644	-.009
Below Poverty Level	-1.067	.769	-.028
Female	1.299***	.426	.054***
Use Community Resources	1.438***	.331	.098***
Parent Involvement at School	-.235	.165	-.026
Extra Curricular Activities	-1.238***	.347	-.068***
Home Resources	1.242***	.269	.089***
Home Cognitive Stimulation	-1.408***	.363	-.088***

$R^2 = .14$

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. The two strongest parent involvement predictors of the math achievement for European American children were use of community resources and home resources. Use of community resources contributed to a .10 standard deviation increase while home resources contributed to a .09 standard deviation increase. Parent involvement at school, in extracurricular activities, and home cognitive stimulation were negatively associated with the math performance in kindergarten and these indicators contributed to a .07, .09 and .03 standard deviation decrease respectively.

After entering the parent involvement variables for the math performance for European American children in kindergarten, the R^2 is changed only .01 which means parent involvement explained only 1% of the variance in math performance for European American children in kindergarten.

Table 13: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Math Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	7.258***	.583	.330***
Single Parent	-.587	.772	-.014
Parent Education	-.153	.889	-.004
Below Poverty Level	-3.669***	1.013	-.071***
Female	2.457***	.571	.072***
R^2 = .14			
Step 2			
Parent SES	5.972***	.623	.273***
Single Parent	-.378	.811	-.008
Parent Education	.075	.904	.002
Below Poverty Level	-2.862***	1.080	-.054***
Female	3.225***	.597	.095***
Use Community Resources	1.166*	.464	.056*
Parent Involvement at School	-.339	.231	-.026
Extra Curricular Activities	-2.413***	.486	-.093***
Home Resources	1.739***	.377	.087***
Home Cognitive Stimulation	-1.537***	.508	-.068***
R^2 = .16			

- ** P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Math in First Grade

Table 13 represents the result of the multiple regression on the math performance for the European American children in first grade.

Background variables. Like in the kindergarten, Parent SES also is the strongest predictor for the math performance for the European American children in fist grade;

parent SES predicted a .27 standard deviation increase in math. Female European American children performed better than male European American children in math in

Table 14: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Math Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.836***	.704	.396***
Single Parent	-1.591	.934	-.029
Parent Education	-1.958	1.072	-.043
Below Poverty Level	-5.693***	1.227	-.088***
Female	5.257***	.691	.124***
R^2 = .19			
Step 2			
Parent SES	8.942***	.747	.330***
Single Parent	-1.403	.974	-.025
Parent Education	-1.452	1.081	-.032***
Below Poverty Level	-4.545***	1.298	-.069***
Female	6.204***	.717	.147
Use Community Resources	.872	.558	.034
Parent Involvement at School	-.085	.278	-.005
Extra Curricular Activities	-2.893***	.583	-.090***
Home Resources	2.611***	.451	.106***
Home Cognitive Stimulation	-1.868***	.611	-.066***
R^2 = .21			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

the first grade. Coming from a poor family indicated a negative outcome in math performance for European American children in first grade with a .05 standard deviation decrease.

Parent involvement variables. Use of community resources was positively associated with the math performance for the European American children in first grade. Extracurricular activities, home resources and home cognitive stimulation were negatively associated with the math performance of the European American children in first grade. Use of community resources predicted a .06 standard deviation increase in math in first grade. Extracurricular activities, home resources and home cognitive stimulation contributed to a .09, .09, and .07 standard deviation decrease respectively to the math performance of the European American children.

After entering the parent involvement indicators the R^2 changed only 2% which means parent involvement variables explained only 2% of the variance in the math performance for the European American children in first grade.

Effects of Parent Involvement on Math in Third Grade

Table 14 shows the result of the multiple regression on the math performance for the European American children in third grade.

Background variables. Like in the kindergarten and the first grade, overall parent SES indicated the strongest positive association on the math performance for the European American children in third grade. Parent SES contributed to an increase of a 33% standard deviation to the math performance in third grade. Being from below the poverty level indicated a negative relation by contributing to decrease of a 7% standard deviation to the math performance in third grade. However, European American children whose parents have higher education scored a .7 standard deviation less than European American children whose parents have less education.

Parent involvement variables. Home resources and home cognitive stimulation predicted the strongest positive association to the math performance for the European American children in third grade. Home resources contributed to an increase of 11% standard deviation and home cognitive stimulation contributed to an increase of 7% standard deviation to the math performance for the European American children in third grade. Like in the kindergarten and the first grade, extracurricular activities indicated a

Table 15: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Math Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.163***	.700	.372***
Single Parent	-1.368	.927	-.025
Parent Education	-.316	1.066	-.007
Below Poverty Level	-7.323***	1.217	-.113***
Female	4.418***	.686	.104**8
R^2 = .20			
Step 2			
Parent SES	8.266***	.740	.305***
Single Parent	-.891	.964	-.016
Parent Education	-.034	1.072	-.001
Below Poverty Level	-6.386***	1.284	-.097***
Female	5.253***	.710	.125***
Use Community Resources	.276	.552	.011
Parent Involvement at School	.380	.275	.024
Extra Curricular Activities	-3.332***	.578	-.104***
Home Resources	2.864***	.448	.117***
Home Cognitive Stimulation	-1.372*	.604	-.049*
R^2 = .23			

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

negative association with a .09 standard deviation decrease to the math performance for the European American children.

After entering the parent involvement variables the R^2 changed only 2% which means parent involvement variables explained only 2% variance to the math performance for the European American children in third grade.

Effects of Parent Involvement on Math in Fifth Grade

Table 15 presents the result of the multiple regression on the math performance for the European American children in fifth grade.

Background variables. The result of the multiple regression on the math performance for the European American children in fifth grade indicated parent SES as one of the strongest predictors. Parent SES resulted in a 31% standard deviation increase in math. Male European American children performed better than female European American children in math in fifth grade. The below the poverty level group indicated a 10% standard deviation decrease in the math performance of the European American children in fifth grade.

Parent involvement variables. The findings of the parent involvement indicators for the European American children in fifth grade indicated that home resources had a strong positive association with the math performance. Home resources contributed to a .12 standard deviation increase in math. As in first grade, extracurricular activities and home cognitive stimulation predicted a negative association with the math performance for European American children in fifth grade. Extracurricular activities resulted in a decrease of .10 standard deviation and home cognitive stimulations resulted in a decrease of a .05 standard deviation in the math performance in fifth grade.

The entering of parent involvement variable models caused a R square changed of 3% which means parent involvement explained only 3% variance of the math performance for European American children in fifth grade.

Reading Performance of the European American Children

Tables 16 to 19 indicate the result of the multiple regression to the reading performance for European American children.

Effects of Parent Involvement on Reading in Kindergarten

Table 16 indicates the result of the multiple regression to the reading performance in kindergarten for European American children.

Table 16: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Reading Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	5.322***	.494	.289***
Single Parent	-.800	.656	-.022
Parent Education	.833	.754	.027
Below Poverty Level	-1.328	.858	-.031
Female	-2.513***	.485	-.088***
$R^2 = .12$			
Step 2			
Parent SES	4.651***	.532	.253***
Single Parent	-.680	.696	-.018
Parent Education	1.052	.773	.034
Below Poverty Level	-.771	.923	-.017
Female	-2.280***	.511	-.080***
Use Community Resources	.731	.397	.042
Parent Involvement at School	-.343	.198	-.031
Extra Curricular Activities	-.923*	.416	-.042*
Home Resources	.896**	.322	.054**
Home Cognitive Stimulation	-.745	.435	-.039

$R^2 = .12$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Background variables. The findings of the multiple regression on the reading performance of the European American children in kindergarten indicated parent SES as one of the most significant factors. Parent SES indicated a .25 increase of standard deviation in reading in kindergarten. Coming from a single parent family had a negative impact on the reading performance in kindergarten. There is a significant difference found between male and female European American student's reading performance in kindergarten. The performance for reading for male European American students was better than the performance for female European American students in kindergarten.

Parent involvement variables. There is a negative association found between the parent involvement at school and the reading performance in kindergarten. Parent involvement at school contributed to a decrease of .03 standard deviation in reading. Students who were involved more in extracurricular activities performed a .04 standard deviation less in the reading than students who were involved less in extracurricular activities. Home resources contributed to an increase of a .05 standard deviation in reading in the first grade.

After entering the parent involvement variables R square did not change, which means parent involvement variables did not cause any variance to the reading performance in kindergarten.

Effects of Parent Involvement on Reading in First Grade

Table 17 depicts the result of the multiple regression for the European American children's reading performance in first grade.

Background variables. Like in the kindergarten, parent SES also predicted the strongest association with the reading performance in first grade for European American children. Male European American children scored higher than female European American children in reading in first grade. Coming from a single parent family and a below the poverty level family did not indicate any significant association to the reading performance for the European American children in first grade.

Parent involvement variables. Parent involvement at school, extracurricular activities, and home cognitive stimulation indicated a negative association to the reading performance for the European American children in first grade. Parent involvement at

Table 17: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Reading Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	9.606***	.800	.320***
Single Parent	-2.205*	1.060	-.037*
Parent Education	-1.049	1.220	-.021
Below Poverty Level	-4.469***	1.390	-.063***
Female	-3.435***	.784	-.074***
R^2 = .13			
Step 2			
Parent SES	7.690***	.856	.257***
Single Parent	-1.803	1.115	-.030
Parent Education	-.582	1.242	-.012
Below Poverty Level	-2.883	1.485	-.040
Female	-2.815***	.821	-.061***

Use Community Resources	1.179	.638	.042
Parent Involvement at School	-1.141***	.318	-.064***
Extra Curricular Activities	-2.350***	.668	-.066***
Home Resources	2.719***	.518	.100***
Home Cognitive Stimulation	-1.596*	.698	-.051*

$R^2 = .15$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

school, extracurricular activities, and home cognitive stimulation contributed to a decrease of .06, .07 and .05 standard deviation respectively to the reading performance. European American students who have more home resources performed a .10 standard deviation higher in reading than European American students who have less home resources in first grade.

After entering the parent involvement variables, the R square changed only 2% which means parent involvement variables explained only 2% of the variance to the reading performance for the European American children in first grade.

Effects of Parent Involvement on Reading in Third Grade

Table 18 presents the result of the multiple regressions for the European American children's reading performance in third grade.

Background variables. Coming from a below poverty family had a negative impact on the reading performance in third grade for the European American children. Below poverty caused a decrease of a .10 standard deviation to the reading performance in third grade for the European American children. As in kindergarten and first grade, female European American children scored a .05 standard deviation less than the male European American children in third grade. The strongest predictor for the reading

performance of European American children in third grade was parent SES which resulted in a .28 standard deviation increase in reading.

Table 18: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Reading Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	12.587***	.913	.358***
Single Parent	-1.198	1.211	-.017
Parent Education	-1.571	1.390	-.027
Below Poverty Level	-10.025***	1.590	-.120***
Female	-3.456***	.895	-.064***
$R^2 = .18$			
Step 2			
Parent SES	9.721***	.969	.279***
Single Parent	-1.235	1.263	-.017
Parent Education	-1.060	1.403	-.018
Below Poverty Level	-8.497***	1.683	-.100***
Female	-2.420**	.930	-.045**
Use Community Resources	-.309	.724	-.009
Parent Involvement at School	-.852**	.360	-.041**
Extra Curricular Activities	-4.004***	.756	-.097***
Home Resources	3.374***	.586	.107***
Home Cognitive Stimulation	-.845	.792	-.023
$R^2 = .20$			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. Parent involvement at school and in extracurricular activities indicated a negative association to the reading performance in third grade for the European American children. Parent involvement at school and in extracurricular

activities resulted in a .04 and .10 standard deviation decrease respectively in reading in third grade for the European American children. European American children who have more resources performed a .11 standard deviation higher in reading in third grade than European American children who have less home resources.

After entering the parent involvement variables the R square changed only 3% which means parent involvement variables impacted only 3% on the reading performance in third grade for the European American children.

Effects of Parent Involvement on Reading in Fifth Grade

Table 19 depicts the result of the multiple regressions for the European American children in reading in fifth grade

Background variables. Like in other grades, the strongest predictor to the reading performance for the European American children was parent SES. Parent SES contributed to a .27 standard deviation increase in reading in fifth grade. Coming from a below poverty level family had a negative impact on the reading performance in fifth grade which contributed to a .12 standard deviation decrease in reading for the European American children.

Parent involvement variables. Extracurricular activities and home cognitive stimulation indicated a negative association to the reading performance for the European American children in third grade. Extracurricular activities and home cognitive stimulation contributed to a .10 and a .03 standard deviation decrease respectively in reading in fifth grade for the European American children. European American children who have more home resources performed a .13 standard deviation higher than European American students who have less home resources in fifth grade.

After entering the parent involvement variables, the R square changed only 2% which means parent involvement impacted only 2% to the reading performance for European American children in fifth grade.

Table 19: *Result of Multiple Regression: Relationship between Parent Involvement and European American Children's Reading Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.808***	.791	.351***
Single Parent	-.320	1.048	-.005
Parent Education	.194	1.205	.004
Below Poverty Level	-10.113***	1.375	-.139***
Female	-2.463***	.775	-.052***
$R^2 = .20$			
Step 2			
Parent SES	8.215***	.834	.270***
Single Parent	-.266	1.086	-.004
Parent Education	.614	1.208	.012
Below Poverty Level	-8.772***	1.446	-.118***
Female	-1.482	.800	-.031
Use Community Resources	-.273	.621	-.009
Parent Involvement at School	-.542	.310	-.030
Extra Curricular Activities	-3.444***	.651	-.095***
Home Resources	3.612***	.504	.131***
Home Cognitive Stimulation	-.897	.680	-.028
$R^2 = .22$			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Math Performance of the Hispanic Children

Tables 20 to 23 indicate the result of the multiple regression on the math performance of the Hispanic children.

Effects of Parent Involvement on Math in Kindergarten

Table 20 shows the result of the multiple regressions for the math performance of Hispanic children in kindergarten.

Background variables. The result of the multiple regression for Hispanic children in math in kindergarten showed parent SES as one of the strongest predictors. Parent SES contributed to a .32 standard deviation increase in math in kindergarten for the Hispanic

Table 20: *Result of Multiple Regression: Relationship of Parent Involvement and Hispanic Children's Math Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	5.687***	.752	.384***
Single Parent	.867	.683	.039
Parent Education	-1.071	.836	-.057
Below Poverty Level	-1.647*	.772	-.080*
Female	-1.191*	.603	-.060*
$R^2 = .16$			
Step 2			
Parent SES	4.789***	.842	.322***
Single Parent	1.487	.770	.063
Parent Education	-1.161	.920	-.061
Below Poverty Level	-1.702*	.858	-.081*
Female	-1.023	.664	-.051
Use Community Resources	.448	.499	.049
Parent Involvement at School	-1.327**	.444	-.107**
Extra Curricular Activities	.108	.341	.011
Home Resources	.414	.304	.050
Home Cognitive Stimulation	-1.145*	.565	-.110*

$R^2 = .17$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

children. Coming from a poor family indicated a negative association with the math performance of the Hispanic children in kindergarten with a .08 standard deviation decrease. Male Hispanic children scored higher than female Hispanic children in math at kindergarten.

Parent involvement variables. Parent involvement at school and in home cognitive stimulation had a negative impact to the math performance for Hispanic children in kindergarten. Both parent involvement at school and in home cognitive stimulation contributed to a .11 standard deviation decrease in math in kindergarten. Use of community resources and home resources did not indicate any significant relation to the math performance of the Hispanic children at kindergarten.

After entering the parent involvement variables the R square changed only 1%, which means parent involvement variables explained only 1% variance to the math performance for the Hispanic children in kindergarten.

Effects of Parent Involvement on Math in First Grade

Table 21 presents the result of the multiple regression to the math performance of the Hispanic children in first grade.

Background variables. Like in the kindergarten, parent SES was the strongest predictor to the math performance for the Hispanic children in first grade. Parent SES predicted a .33 standard deviation increase to the math performance in first grade for the

Hispanic children. Coming from a single parent family or poor family did not show any significant association to the math performance for Hispanic children in first grade.

Parent involvement variables. Parent involvement at school and in home cognitive stimulation predicted a negative association with the math performance for the Hispanic children in first grade. Parent involvement at school and in home cognitive stimulation indicated a .09 and .22 standard deviation decrease respectively on the math performance for the Hispanic children. Use of community resources indicated a positive association with the math performance for the Hispanic children in first grade and it resulted in a .13 standard deviation increase in math. Extracurricular activities and home resources did not indicate any significant association to the math performance of the Hispanic children in first grade.

After entering the parent involvement models in step 2 the R square changed only 1% which means parent involvement variables explained only 2% variance to the math performance for the Hispanic children in first grade.

Table 21: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Math Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	7.775***	1.111	.359***
Single Parent	-.284	1.009	-.009
Parent Education	-.090	1.235	-.003
Below Poverty Level	-1.110	1.140	-.037
Female	-.445	.890	-.015
R^2 = .15			
Step 2			
Parent SES	7.102***	1.230	.330***

Single Parent	.277	1.124	.008
Parent Education	-.077	1.344	-.003
Below Poverty Level	-.661	1.253	-.022
Female	-.185	.970	-.006
Use Community Resources	1.703*	.730	.126*
Parent Involvement at School	-1.516*	.649	-.084*
Extra Curricular Activities	-.007	.498	-.001
Home Resources	.245	.444	.020
Home Cognitive Stimulation	-3.326***	.826	-.218***

$R^2 = .16$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Math in Third Grade

Table 22 shows the result of the multiple regressions on the math performance of the Hispanic children in third grade.

Background variables. Parent SES predicted the strongest association to the math performance for the Hispanic children in third grade, which resulted in a .23 standard deviation increase in the math performance. Coming from a below poverty level family had a negative association with the math performance for Hispanic children in

Table 22: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Math Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	9.182***	1.640	.289***
Single Parent	.338	1.487	.007
Parent Education	1.021	1.821	.025
Below Poverty Level	-4.317*	1.683	-.098*
Female	2.151	1.314	.051

$R^2 = .14$

Step 2

Parent SES	7.103***	1.807	.225***
Single Parent	1.621	1.649	.032
Parent Education	1.715	1.972	.042
Below Poverty Level	-4.070*	1.840	-.090*
Female	2.420	1.424	.056
Use Community Resources	1.669	1.069	.086
Parent Involvement at School	-3.249**	.953	-.123**
Extra Curricular Activities	-.016	.731	-.001
Home Resources	.743	.654	.042
Home Cognitive Stimulation	-3.717**	1.212	-.168**

$R^2 = .17$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

third grade and indicated a .09 standard deviation decrease. There is no significant difference found between the male and female Hispanic children's math performance in third grade.

Parent involvement variables. Parent involvement at school predicted a negative association to the math performance for the Hispanic children in third grade. Parent involvement at school indicated a .12 standard deviation decrease in the math performance in third grade. Use of community resources and home resources indicated a positive association; however the association was not significant. Extracurricular activities and home cognitive stimulation indicated a negative impact on the math performance for the Hispanic children in third grade with a .01 and .17 standard deviation decrease.

After entering the parent involvement variables the R square changed only 1% which means parent involvement variables explained only 1% variance to the math performance for the Hispanic children in third grade.

Effects of Parent Involvement on Math in Fifth Grade

Table 23 illustrates the result of the multiple regression on the math performance for the Hispanic children in fifth grade.

Background variables. As in the kindergarten, first grade and third grade, parent SES also was the strongest predictor for the math performance for the Hispanic children in fifth grade. Parent SES resulted in a .29 standard deviation increase in math performance for the Hispanic children in fifth grade. There is a significant difference found between the male and female Hispanic children's math performance in fifth grade. Coming from a below the poverty level family or single parent family did not have any significant impact on the math performance for the Hispanic children in fifth grade.

Parent involvement variables. Parent involvement at school and in home cognitive stimulation predicted a .19 and a .16 standard deviation decrease respectively to the math performance for the Hispanic children in fifth grade. Use of community resources indicated a positive impact on the math performance for the Hispanic children in fifth grade with a .11 standard deviation increase. Home resources and extracurricular activities did not indicate any significant association to the math performance for the Hispanic children in fifth grade.

Table 23: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Math Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.150***	1.662	.316***
Single Parent	.872	1.512	.018
Parent Education	.307	1.847	.007
Below Poverty Level	-2.289	1.706	-.051
Female	2.820	1.333	.066
R^2 = .13			
Step 2			
Parent SES	8.951***	1.789	.287***
Single Parent	2.117	1.639	.043
Parent Education	1.275	1.957	.032
Below Poverty Level	-1.039	1.823	-.023
Female	3.076*	1.412	.073*
Use Community Resources	2.126	1.060	.111
Parent Involvement at School	-2.803**	.944	-.108***
Extra Curricular Activities	.078	.725	.004
Home Resources	.320	.647	.018
Home Cognitive Stimulation	-3.450	1.203	-.158
R^2 = .16			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

After entering the parent involvement models, the R square changed only 3% which means the parent involvement models explained only 3% variance to the math performance for the Hispanic children.

Reading Performance of the Hispanic Children

Tables 24 to 27 indicate the result of multiple regression on the reading performance of the Hispanic children.

Effects of Parent Involvement on Reading in Kindergarten

Table 24 depicts the result of the multiple regression on reading for the Hispanic children in kindergarten.

Table 24: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Reading Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	11.511***	1.349	.418***
Single Parent	4.801***	1.225	.115***
Parent Education	.367	1.499	.010
Below Poverty Level	-1.921	1.384	-.050
Female	-3.531***	1.081	-.096***
R^2 = .22			
Step 2			
Parent SES	10.528***	1.501	.382***
Single Parent	4.713***	1.372	.108***
Parent Education	.980	1.641	.028
Below Poverty Level	-1.673	1.529	-.043
Female	-3.916***	1.184	-.105***
Use Community Resources	-1.425	.889	-.084
Parent Involvement at School	-1.720*	.792	-.075*
Extra Curricular Activities	1.136	.608	.062
Home Resources	-.023	.542	-.001
Home Cognitive Stimulation	1.066	1.008	.055
R^2 = .24			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Background variables. Parent SES showed the strongest association to the reading performance for the Hispanic children in kindergarten. Parent SES resulted in a .38 standard deviation increase for the reading performance in kindergarten. Belonging to a

single parent family indicated a negative association with the reading performance for Hispanics with a .11 standard deviation decrease. Parent education did not indicate any significant association with the reading performance for the Hispanic children in kindergarten.

Parent involvement variables. Parent involvement at school had a negative impact on the reading performance for the Hispanic children, which resulted in a .08 standard deviation decrease in the reading performance in kindergarten. Use of community resources indicated a positive impact with a .08 standard deviation increase on the reading performance in kindergarten. Home cognitive stimulation and home resources did not indicate any significant association to the reading performance for the Hispanic children in kindergarten.

After entering the parent involvement variables the R square changed only 2%.

Effects of Parent Involvement on Reading in First Grade

Table 25 presents the result of the multiple regression in reading for the Hispanic children in first grade.

Background variables. Like in the kindergarten, parent SES also indicated the strongest association to the reading performance for the Hispanic children in first grade. Parent SES resulted in a .38 standard deviation increase in the reading performance in first grade for the Hispanic children. Coming from a poor family had a negative association to the reading performance for the Hispanic children and resulted in a .09 standard deviation decrease. There is a significant difference found between male and female Hispanic children's reading performance in first grade. Male Hispanic children performed better than female Hispanic children in reading in first grade. Parent education

did not show any significant association to the reading performance of the Hispanic children in first grade.

Table 25: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Reading Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	13.911***	2.030	.339***
Single Parent	1.573	1.842	.025
Parent Education	1.661	2.255	.032
Below Poverty Level	-6.243***	2.082	-.110***
Female	-7.244***	1.626	-.132***
R^2 = .21			
Step 2			
Parent SES	12.564***	2.260	.306***
Single Parent	1.894	2.066	.029
Parent Education	3.511	2.470	.066
Below Poverty Level	-5.418**	2.303	-.093**
Female	-7.938***	1.782	-.142***
Use Community Resources	-.159	1.341	-.006
Parent Involvement at School	-2.851*	1.193	-.083*
Extra Curricular Activities	2.066*	.916	.075*
Home Resources	-.252	.817	-.011
Home Cognitive Stimulation	-1.363	1.519	-.047
R^2 = .22			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. Parent involvement at school showed a negative impact with a .08 standard deviation decrease on the reading performance for the Hispanic children in first grade. Extracurricular activities predicted a positive association

with the reading performance for the Hispanic children in first grade with a .08 standard deviation increase. However, home cognitive stimulation and home resources indicated

Table 26: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Reading Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.669***	2.044	.260***
Single Parent	.196	1.854	.003
Parent Education	4.067	2.270	.078
Below Poverty Level	-7.541***	2.098	-.132***
Female	-9.778***	1.637	-.178***
R^2 = .20			
Step 2			
Parent SES	8.824***	2.224	.218***
Single Parent	1.524	2.030	.024
Parent Education	6.052**	2.428	.116**
Below Poverty Level	-6.878***	2.264	-.119***
Female	-9.207***	1.753	-.168***
Use Community Resources	3.794***	1.316	.152***
Parent Involvement at School	-3.975***	1.173	-.118***
Extra Curricular Activities	-.416	.900	-.015
Home Resources	-.491	.805	-.022
Home Cognitive Stimulation	-6.144***	1.492	-.217***
R^2 = .23			

- ** P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

a negative association with a .05 and .01 standard deviation decrease respectively with the reading performance of the Hispanic children.

After entering the parent involvement variables, the R square changed only 1% which means parent involvement variables explained only 2% variance to the reading performance for the Hispanic children in first grade.

Effects of Parent Involvement on Reading in Third Grade

Table 26 illustrates the result of the multiple regression in reading performance for the Hispanic children in third grade.

Background variables. Parent SES predicted the strongest association to the reading performance for the Hispanic children with a .21 standard deviation increase. Parent education indicated a positive relation with a .12 standard deviation increase to the reading performance for the Hispanic children. Coming from a below poverty level family had a negative impact on the reading performance for the Hispanic children in third grade. Belonging to a below poverty level group resulted in a .12 standard decrease in the reading performance of the Hispanic children in third grade.

Parent involvement variables. Use of community resources indicated a positive association on the reading achievement of the Hispanic children in third grade that resulted in a .15 standard deviation increase in the reading performance. However, parent involvement at school, in home cognitive stimulation, extracurricular activities, and home resources indicated a negative association to the reading achievement for the Hispanic children in third grade with a .12, .22, .02 and .02 standard deviation decrease respectively to the reading performance.

After entering the parent involvement variables, the R square changed only 3% which means parent involvement variables explained only 3% variance to the reading performance for the Hispanic children in third grade.

Effects of Parent Involvement on Reading in Fifth Grade

Table 27 shows the result of the multiple regression on the reading performance for the Hispanic children in fifth grade.

Background variables. Parent SES predicted the strongest association to the reading performance for the Hispanic children in fifth grade with a .21 standard deviation increase. Coming from a single parent family was also positively associated with the reading performance for the Hispanic children and indicated a .06 standard deviation increase in the reading performance. Parent education also resulted in a .15 standard deviation increase in reading performance of the Hispanic children in fifth grade. Male Hispanic children performed better than female Hispanic children in reading in fifth grade. Coming from a below poverty level family predicated a negative association with a .14 standard deviation decrease to the reading performance for the Hispanic children.

Parent involvement variables. Use of community resources, extracurricular activities, home resources and home cognitive stimulation indicated a negative association to the reading performance for the Hispanic children in fifth grade with a .11, .08, .03 and .13 standard deviation decrease respectively.

After entering the parent involvement variables, the R square changed only .05 which showed that the parent involvement indictors explained only 5% variance to the reading performance for the Hispanic children in fifth grade.

Table 27: *Result of Multiple Regression: Relationship between Parent Involvement and Hispanic Children's Reading Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.035***	1.827	.272***
Single Parent	2.458	1.662	.044
Parent Education	4.904	2.031	.104
Below Poverty Level	-5.754***	1.875	-.112***
Female	-7.485***	1.465	-.152***
R^2 = .20			
Step 2			
Parent SES	7.770***	2.005	.213***
Single Parent	3.605*	1.837	.062*
Parent Education	7.112***	2.193	.151***
Below Poverty Level	-5.057**	2.043	-.097**
Female	-7.110***	1.582	-.144***
Use Community Resources	2.524*	1.188	.112*
Parent Involvement at School	-2.557*	1.058	-.084*
Extra Curricular Activities	.205	.812	.008
Home Resources	.680	.725	.034
Home Cognitive Stimulation	-4.022***	1.348	-.157***
R^2 = .23			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Math Performance of the African American Children

Tables 28 to 31 present the result of the multiple regression on the math performance for the African American children.

Effects of Parent Involvement on Math in Kindergarten

Table 28 presents the result of the multiple regression on the math performance for the African American children in kindergarten.

Background variables. Parent SES predicted the strongest association to the math performance for the African American children in kindergarten with a .30 standard deviation increase. Parent education and poverty were also positively associated with the math performance of the African American children in kindergarten. Parent education and below poverty contributed with a .06 and .05 standard deviation increase respectively to the math performance for the African American children in kindergarten. There is no significant difference found between male and female African American children's math performance in kindergarten.

Table 28: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Math Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	3.948***	.734	.298***
Single Parent	.135	.675	.007
Parent Education	1.321	1.010	.060
Below Poverty Level	.364	.865	.020
Female	.862	.642	.048
	3.948	.734	.298
$R^2 = .11$			
Step 2			
Parent SES	3.848***	.779	.302***
Single Parent	.001	.705	.000
Parent Education	1.335	1.098	.060
Below Poverty Level	.903	.929	.049
Female	.154	.683	.009
Use Community Resources	1.381**	.447	.252**
Parent Involvement at School	-.687	.442	-.067

Extra Curricular Activities	-.330	.521	-.026
Home Resources	.363	.316	.048
Home Cognitive Stimulation	-1.251**	.515	-.196***
R^2 = .14			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. Use of community resources indicated a positive relation with a .25 standard deviation increase in the math performance of the African American children in kindergarten. Parent involvement at school, in extracurricular activities and home cognitive stimulation indicated a negative association to the math

Table 29: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Math Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	6.439***	1.032	.339***
Single Parent	.541	.950	.021
Parent Education	1.945	1.421	.062
Below Poverty Level	.058	1.217	.002
Female	-.741	.903	-.029
	6.439	1.032	.339
R^2 = .14	.541	.950	.021
Step 2			
Parent SES	6.363***	1.115	.349***
Single Parent	.643	1.008	.026
Parent Education	.823	1.571	.026
Below Poverty Level	.848	1.328	.032
Female	-1.413	.977	-.056
Use Community Resources	1.824**	.639	.232**
Parent Involvement at School	-.392	.632	-.027
Extra Curricular Activities	-1.014	.745	-.056
Home Resources	.247	.452	.023

Home Cognitive Stimulation	-1.498**	.737	-.164**
R^2 = .14			

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

performance with a .07, .03 and .10 standard deviation decrease respectively for the African American children in Kindergarten. Home resources predicted a positive association with a.05 standard deviation increase in the math performance of the African American children in kindergarten.

After entering the parent involvement variables, the R square changed only 2% which means parent involvement variables explained only 2% variance to the math performance for the African American children in kindergarten.

Effects of Parent Involvement on Math in First Grade

Table 29 illustrates the result of the multiple regression on the math performance for the African American children in first grade.

Background variables. Parent SES indicated the strongest relation to the math performance for the African American children in first grade with a .35 standard deviation increase. Male African American children scored higher than female African American children in math in first grade. Coming from a single parent family did not indicate any significant association to the math performance for the African American children in first grade.

Parent involvement variables. As in the kindergarten, use of community resources indicated a positive relation to the math performance for the African American children with a .23 standard deviation increase. Parent involvement at school, in

extracurricular activities and home cognitive stimulation indicated a negative association with a .03, .06, and .16 standard deviation decrease respectively to the math performance of the African American children in first grade.

After entering the parent involvement indicators the R square did not change at all which means parent involvement variables could not account for any variance in the math performance of the African American children in first grade.

Effects of Parent Involvement on Math in Third Grade

Table 30 represents the result of the multiple regression on the math performance for the African American children in third grade.

Background variables. Like in the kindergarten and the first grade, Parent SES indicated a positive relation to the math performance of the African American children in third grade with a .26 standard deviation increase. Parent education indicated a strong positive association to the math performance for the African American children in third grade with a .13 standard deviation increase. There is no significant difference found between male and female African American children's math performance in third grade.

Parent involvement variables. Use of community resources and home resources indicators were positively associated with the math performance of the African American children in third grade. Use of community resources and home resources resulted in a .17 and .03 standard deviation increase respectively to the math performance in third grade. Parent involvement at school, extracurricular activities, and home cognitive stimulation indicated a negative association to the math performance for the African American children in third grade with a .03, .10 and .10 standard deviation decrease respectively.

After entering the parent involvement variables the R square did not change at all.

Table 30: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Math Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	8.166***	1.553	.287***
Single Parent	.840	1.425	.021
Parent Education	5.775**	2.129	.122**
Below Poverty Level	-1.755	1.828	-.044
Female	1.233	1.356	.032
R^2 = .16			
Step 2			
Parent SES	7.312***	1.710	.261***
Single Parent	2.179	1.544	.056
Parent Education	6.300**	2.403	.128**
Below Poverty Level	.316	2.045	.008
Female	.982	1.496	.025
Use Community Resources	2.027*	.978	.168*
Parent Involvement at School	-.760	.965	-.034
Extra Curricular Activities	-2.838*	1.138	-.103*
Home Resources	.566	.699	.034
Home Cognitive Stimulation	-1.366	1.129	-.098
R^2 = .16			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Math in Fifth Grade

Table 31 presents the result of the multiple regression on the math performance for the African American children in fifth grade.

Table 31: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Math Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.163***	.700	.372***
Single Parent	-1.368	.927	-.025
Parent Education	-.316	1.066	-.007
Below Poverty Level	-7.323***	1.217	-.113***
Female	4.418***	.686	.104***
R^2 = .20			
Step 2			
Parent SES	8.230***	1.825	.271***
Single Parent	1.743	1.650	.042
Parent Education	7.414**	2.565	.140**
Below Poverty Level	-.106	2.187	-.002
Female	1.822	1.598	.044
Use Community Resources	1.429	1.045	.109
Parent Involvement at School	-1.657	1.031	-.068
Extra Curricular Activities	-1.509	1.215	-.050
Home Resources	.992	.748	.055
Home Cognitive Stimulation	-.759	1.206	-.050
R^2 = .19			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Background variables. Like in the kindergarten, first grade and third grade, parent SES indicated the strongest positive association with a .27 standard deviation increase to the math performance of the African American children. Parent education also predicted a positive relation to the math performance of the African American children with a .14 standard deviation increase. Coming from a single parent family had a negative impact on the math performance of the African American children. There is no

significant difference found between male and female African American children's math performance in fifth grade.

Parent involvement variables. Use of community resources and home cognitive stimulation indicated a positive relation to the math performance of the African American children in fifth grade with a .11 and a .06 standard deviation increase respectively. Parent involvement at school, in extracurricular activities and home cognitive stimulation indicated a negative association with a .07, .05 and .05 standard deviation decrease in the math performance of the African American children in fifth grade.

After entering the parent involvement indicators, the R square changed 1% which means parent involvement variables explained only 1% variance to the math performance for the African American children in fifth grade.

Reading Performance of the African American Children

Tables 32 to 35 illustrate the result of the multiple regression on the reading performance for the African American children

Effects of Parent Involvement on Reading in Kindergarten

Table 32 illustrates the result of the multiple regression on the reading performance for the African American children in kindergarten.

Background variables. The strongest predictor of the reading performance for the African American children in kindergarten was parent SES. Parent SES indicated a positive association with a .38 standard deviation increase in the reading performance of the African American children in kindergarten. There is a significant difference found between the male and female African American children's reading performance in kindergarten. Male African American children performed better than female African

American children in reading in kindergarten. Coming from a single parent family and poor family indicated a negative association to the reading performance for the African American children in kindergarten with a .02 standard deviation decrease.

Parent involvement variables. Use of community resources, extracurricular activities, and home resources indicated a positive association to the reading performance of the African American children in kindergarten with a .07, .01 and .14 standard deviation decrease respectively. Parent involvement at school and home cognitive

Table 32: *Result of Multiple Regression: Relationship of Parent Involvement and African American Children's Reading Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	6.758***	.949	.387***
Single Parent	.443	.873	.019
Parent Education	-.867	1.306	-.030
Below Poverty Level	-.464	1.119	-.019
Female	-.277	.830	-.012
R^2 = .14			
Step 2			
Parent SES	6.767***	1.080	.381***
Single Parent	.496	.977	.020
Parent Education	-.739	1.522	-.024
Below Poverty Level	-.097	1.287	-.004
Female	-.889	.947	-.037
Use Community Resources	1.369*	.619	.179*
Parent Involvement at School	-1.009	.612	-.071
Extra Curricular Activities	.042	.722	.002
Home Resources	-.085	.438	-.008
Home Cognitive Stimulation	-1.212	.714	-.136
R^2 = .16			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

stimulation indicated a positive association with a .01 and .02 standard deviation increase respectively to the reading performance of the African American children in kindergarten.

After entering the parent involvement variables, the R square changed only 1% which means parent involvement variables explained only 2% variance in the reading performance for the African American children in kindergarten.

Effects of Parent Involvement on Reading in First grade

Table 33 depicts the result of the multiple regression on the reading performance of the African American children in first grade.

Background variables. As in the kindergarten, parent SES indicated the highest positive association to the reading performance in first grade for the African American children. Parent SES indicated a positive relation resulting in a .31 standard deviation increase in the reading performance of the African American children in first grade. Coming from a single parent family indicated a positive association with a .11 standard deviation increase in reading in first grade. There is a significant difference found between the male and female African American children's reading performance in first grade. Male African American children performed better than female African American children in reading in first grade.

Parent involvement variables. Use of community resources indicated a positive relation to the reading performance for the African American children with a .16 standard deviation increase in first grade. Parent involvement in school, extracurricular activities and home cognitive stimulation indicated a negative association with a .02, .04 and .08

standard deviation decrease respectively to the reading performance for the African American children in first grade.

After entering the parent involvement indicators, the R square changed only 2% which means parent involvement variables explained only 2% variance to the reading performance for the African American children in first grade.

Table 33: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Reading Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	9.776***	1.617	.326***
Single Parent	3.915**	1.488	.095**
Parent Education	1.426	2.225	.029
Below Poverty Level	-3.430	1.906	-.081
Female	-4.180**	1.414	-.102**
$R^2 = .16$			
Step 2			
Parent SES	9.081***	1.800	.305***
Single Parent	4.220*	1.629	.103*
Parent Education	.096	2.537	.002
Below Poverty Level	-3.493	2.145	-.081
Female	-5.073**	1.578	-.124**
Use Community Resources	2.083*	1.032	.162*
Parent Involvement at School	-.546	1.021	-.023
Extra Curricular Activities	-1.274	1.203	-.043
Home Resources	.717	.731	.041
Home Cognitive Stimulation	-1.219	1.190	-.082
$R^2 = .17$			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Reading in Third Grade

Table 34 presents the result of the multiple regression on the reading performance for the African American children in third grade.

Background variables. Parent education indicated the strongest association on the reading performance for the African American children in third grade with a .19 standard deviation increase. The second highest predictor for the reading performance for the African American children in third grade was parent SES which indicated a positive association with a .14 standard deviation increase. Male African American children scored higher than female African American children in reading in third grade. Coming from a below poverty family indicated a negative association to the reading performance for the African American children in third grade with a .08 standard deviation decrease.

Table 34: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Reading Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	7.586**	2.333	.180**
Single Parent	1.232	2.142	.021
Parent Education	9.277**	3.199	.133**
Below Poverty Level	-6.436*	2.747	-.108*
Female	-5.885**	2.037	-.102**
$R^2 = .13$			
Step 2			
Parent SES	5.640*	2.519	.138*
Single Parent	2.895	2.274	.051
Parent Education	13.249***	3.540	.185***
Below Poverty Level	-4.645	3.013	-.078
Female	-5.593**	2.203	-.099**
Use Community Resources	1.574	1.441	.089

Parent Involvement at School	-1.122	1.421	-.034
Extra Curricular Activities	-1.801	1.676	-.045
Home Resources	1.023	1.030	.042
Home Cognitive Stimulation	-1.378	1.663	-.067

$R^2 = .15$

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. Use of community resources and home resources indicated a positive relation resulting in a .09 and .04 standard deviation increase respectively in the reading performance in third grade for the African American children. Parent involvement at school, extracurricular activities and home cognitive stimulation indicated a negative association with a .03, .05 and .07 standard deviation decrease respectively to the reading performance for the African America children in third grade.

After entering the parent involvement indicator the R Square changed only 2% which means parent involvement variables explained only 2% of the variance to the reading performance for the African American children in third grade.

Effects of Parent Involvement on Reading in Fifth Grade

Table 35 shows the result of the multiple regression on the reading performance for the African American children in fifth grade.

Background variables. The strongest predictor to the reading performance for the African America children was parent SES which indicated a .22 standard deviation increase in reading. The second highest predictor to the reading performance for the African American children in fifth grade was parent education. Parent education resulted in a .17 standard deviation increase in the reading performance of the African American

children in fifth grade. Male African American children scored higher than female African American children in reading in fifth grade. Coming from a below poverty level family indicated a negative association with a .11 standard deviation decrease in the reading performance of the African American children in fifth grade.

Parent involvement variables. At first glance, anyone can see that no parent involvement indicator predicted a significant relation to the reading performance for the African American children. However, further investigation indicated that parent involvement at school and home cognitive stimulation had a negative impact with a.09 and .13 standard deviation decreases respectively to the reading performance for the African American children in fifth grade. Use of community resources and home resources indicated a positive association resulting in a .14 and .07 standard deviation increase respectively in the reading performance of the African American children in fifth grade.

After entering the parent involvement indicators, the R square did not change at all.

Table 35: *Result of Multiple Regression: Relationship between Parent Involvement and African American Children's Reading Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	9.334***	1.943	.258***
Single Parent	3.460	1.788	.069
Parent Education	8.334**	2.661	.139**
Below Poverty Level	-5.388*	2.290	-.105*
Female	-5.280**	1.700	-.106**
R^2 = .19			
Step 2			

Parent SES	7.705***	2.140	.216***
Single Parent	3.394	1.935	.069
Parent Education	10.323**	3.007	.165**
Below Poverty Level	-1.946	2.564	-.038
Female	-5.252**	1.874	-.107**
Use Community Resources	2.195	1.225	.143
Parent Involvement at School	-2.630*	1.209	-.091*
Extra Curricular Activities	.419	1.425	.012
Home Resources	1.479	.877	.070
Home Cognitive Stimulation	-2.387	1.414	-.134

$R^2 = .19$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Reading Performance of the Asian Children

Tables 36 to 39 show the result of the multiple regression on the reading performance for the Asian children.

Effects of Parent Involvement on Reading in Kindergarten

Table 36 shows the result of the multiple regression on the reading performance for the Asian children in kindergarten.

Background variables. The strongest predictor on the reading performance for the Asian children in kindergarten was parent SES. Parent SES predicted a positive association with a .42 standard deviation increase in the reading performance for the Asian children. Coming from a single parent family and below poverty level family indicated a negative relation with a .17 and .06 standard deviation decrease respectively to the reading performance for the Asian children in kindergarten. Male Asian children scored higher than female Asian children in reading in kindergarten.

Parent involvement variables. At first glance, anyone will notice the absence of the significance asterisk marks for the Asian kindergarteners in reading performance. However, a further investigation reveals the impact of the parent involvement on the reading performance for the Asian kindergarteners. Asian kindergarteners who use more community resources and are involved more in extracurricular activities performed a .12 and .08 standard deviation higher in reading. Parent involvement at school and home cognitive stimulation were negatively associated with the reading performance for the Asian children in kindergarten, which resulted in a decrease of a .01 and .03 standard deviation in reading.

After entering the parent involvement indicators the R square changed 5% which was the highest number of variance among all the ethnic groups to the reading performance in kindergarten.

Table 36: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Reading Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.601**	3.517	.417**
Single Parent	-4.045	5.543	-.060
Parent Education	-2.956	5.083	-.074
Below Poverty Level	-7.154	5.349	-.124
Female	-.986	3.596	-.022
R^2 = .20			
Step 2			
Parent SES	10.838**	3.907	.422**
Single Parent	-4.422	6.234	-.064
Parent Education	-2.549	5.742	-.061
Below Poverty Level	-10.343	6.334	-.169
Female	-1.013	3.988	-.023

Use Community Resources	1.709	2.298	.123
Parent Involvement at School	-.221	2.145	-.010
Extra Curricular Activities	1.283	1.497	.080
Home Resources	.180	3.057	.006
Home Cognitive Stimulation	-.407	2.703	-.025

R^2 = .25

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Reading in First grade

Table 37 depicts the result of the multiple regression on the reading performance for the Asian children in first grade.

Background variables. As in the kindergarten, the strongest predictor for the reading achievement in the first grade for the Asian children was parent SES which indicated a .42 standard deviation increase. Coming from a single parent family and below the poverty level family indicated a negative relation with a .15 and a .16 standard deviation decrease respectively to the reading performance for the Asian children in first grade. Also, Asian children whose parents have higher education indicated a .13 standard deviation decrease in the reading performance in first grade than Asian children whose parents have less education. Male Asian children scored higher than female Asian children in reading in first grade.

Table 37: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Reading Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.122**	3.568	.380**

Single Parent	-6.368	5.621	-.091
Parent Education	1.891	5.159	.045
Below Poverty Level	-5.725	5.429	-.095
Female	4.973	3.652	.106
	10.122	3.568	.380
R^2 = .26	-6.368	5.621	-.091
Step 2			
Parent SES	14.219**	5.152	.420**
Single Parent	-13.881*	8.223	-.153*
Parent Education	-7.022	7.571	-.127
Below Poverty Level	-13.199	8.355	-.164
Female	-5.599	5.259	-.095
Use Community Resources	-.191	3.031	-.010
Parent Involvement at School	-1.128	2.830	-.038
Extra Curricular Activities	1.782	1.973	.084
Home Resources	-.603	4.030	-.014
Home Cognitive Stimulation	-1.012	3.565	-.047
R^2 = .24			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. Like in the kindergarten, no parent involvement indicators predicated any significant association to reading performance for the Asian children in first grade. However, a further investigation indicated that, Asian children who were involved more in extracurricular activities scored a .08 standard deviation higher than Asian children who were involved less in extracurricular activities. Use of community resources, parent involvement at school and home resources predicted a negative association with a .10, .04 and .05 standard deviation decrease to the reading performance for the Asian children in first grade.

After entering the parent involvement indicator the R square changed only 2% which means parent involvement variables explained only 2% variance to the math performance for the Asian children in first grade.

Effects of Parent Involvement on Reading in Third Grade

Table 38 presents the result of the multiple regression on the reading performance for the Asian children in third grade.

Background variables. Similar to the kindergarten and the first grade, parent SES predicted the strongest association to the reading performance for the Asian children in third grade with a .41 standard deviation increase. Coming from a single parent family and poor family predicated a negative association with a .07 and .20 standard deviation decrease in the reading performance in third grade for the Asian children. Asian children whose parents have higher education performed of a .06 standard deviation higher in reading than Asian children whose parents have less education. Male Asian children scored higher than female Asian children in reading in third grade.

Parent involvement variables. Like in the kindergarten and the first grade, no parent involvement indicators predicted any significant association to the reading performance for the Asian children in third grade. However, a closer look indicated that parent involvement at school, home resources and home cognitive stimulation were negatively associated with the reading performance for the Asian children in third grade and these indicators resulted in a .06, .03 and .05 standard deviation decrease respectively

Table 38: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Reading Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	12.792***	3.563	.462***
Single Parent	-3.268***	5.613	-.045***
Parent Education	.602	5.151	.014
Below Poverty Level	-8.069	5.421	-.129
Female	-4.186	3.646	-.086
R^2 = .32			
Step 2			
Parent SES	11.241***	3.837	.410***
Single Parent	-4.811**	6.120	-.065**
Parent Education	2.439	5.637	.055
Below Poverty Level	-13.215*	6.221	-.203*
Female	-2.814	3.918	-.059
Use Community Resources	-.005	2.255	.000
Parent Involvement at School	-1.411	2.107	-.059
Extra Curricular Activities	.013	1.469	.001
Home Resources	-.902	3.012	-.026
Home Cognitive Stimulation	-.786	2.653	-.045
R^2 = .35			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

in the reading performance of the Asian children in third grade. Asian children who were involved more in extracurricular activities performed a .01 standard deviation higher than Asian children who were involved less in extracurricular activities in third grade.

After entering the parent involvement indicators the R square changed only .03 which means the parent involvement indicators explained only 3% of the reading performance for the Asian children in third grade.

Effects of Parent Involvement on Reading in Fifth Grade

Table 39 presents the result of the multiple regression on the reading performance for the Asian children in fifth grade.

Background variables. As in the kindergarten, first grade and third grade, parent SES predicted the strongest association with a .37 standard deviation increase to the reading performance for the Asian children. Coming from a single parent family and poor family indicated a negative association with a .08 and .11 standard deviation decrease respectively to the reading performance for the Asian children in fifth grade. Asian children whose parents had higher education scored a .07 standard deviation higher than Asian children whose parents had less education. Male Asian children scored higher than female Asian children in reading in fifth grade.

Parent involvement variables. Like in other grades, no parent involvement indicators indicated any significant association to the reading performance for the Asian children. However, a further investigation indicated that parent involvement at school and home cognitive stimulation predicted a negative association with a .06 and a .09 standard deviation decrease respectively to the reading performance in fifth grade. Use of community resources, extracurricular activities and home resources indicated a positive relation with a .03, .03 and .04 standard deviation increase respectively to the reading performance for the Asian children.

After entering the parent involvement indicators, the R square changed only 4% which means parent involvement variables explained only 4% of the variance to the math performance for the Asian children in fifth grade.

Table 39: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Reading Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.065**	3.333	.407**
Single Parent	-3.900	5.255	-.060
Parent Education	1.460	4.819	.038
Below Poverty Level	-4.435	5.078	-.079
Female	-2.507	3.413	-.057
	10.065	3.333	.407
R^2 = .25	-3.900	5.255	-.060
Step 2			
Parent SES	8.694**	3.412	.376**
Single Parent	-5.226	5.445	-.084
Parent Education	2.756	5.015	.073
Below Poverty Level	-6.081	5.545	-.110
Female	-.408	3.485	-.010
Use Community Resources	.371	2.008	.030
Parent Involvement at School	-1.141	1.874	-.056
Extra Curricular Activities	.411	1.307	.029
Home Resources	.956	2.670	.033
Home Cognitive Stimulation	-1.312	2.363	-.089
R^2 = .29			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Math Performance of the Asian Children

Tables 40 to 43 present the result of the multiple regression on the math performance for the Asian children.

Effects of Parent Involvement on Math in Kindergarten

Table 40 presents the result of the multiple regression on the math performance for the Asian children in Kindergarten.

Background variables. Parent SES predicted the strongest association to the math performance for the Asian children in kindergarten. Parent SES resulted in a .43 standard deviation increase in the math performance and was the highest number increase of standard deviation in math in all models among all the ethnic groups across the school years. Coming from a single parent family and poor family indicated a .05 and .17 standard deviation decrease respectively in the math performance of the Asian children in kindergarten. There was no significant difference found between male and female Asian children's math performance in kindergarten.

Parent involvement variables. Like in the reading performance in kindergarten, no parent involvement indicators predicted any significant association on the math performance for the Asian children in kindergarten. However, a further investigation revealed that Asian children who used more community resources and were involved more in extracurricular activities performed a .11 and .04 standard deviation higher respectively than Asian children who used less community resources and were involved less in extracurricular activities in kindergarten. Parent involvement at school and home resources indicated a negative association with a .03 standard deviation decrease to the math performance in kindergarten for the Asian children.

After entering the parent involvement indicators, the R square changed 3% which means parent involvement variables explained only 3% variance to the math performance for the Asian children in kindergarten.

Table 40: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Math Achievement in Kindergarten*

Variables	B	SE B	*B*
Step 1			
Parent SES	8.610**	2.717	.434**
Single Parent	-2.775	4.282	-.053
Parent Education	-2.683	3.927	-.086
Below Poverty Level	-5.990	4.132	-.133
Female	2.003	2.778	.057
R^2 = .22			
Step 2			
Parent SES	8.810	3.053	.437
Single Parent	-2.566	4.872	-.047
Parent Education	-2.776	4.487	-.085
Below Poverty Level	-8.046	4.950	-.168
Female	2.562	3.117	.073
Use Community Resources	1.212	1.796	.111
Parent Involvement at School	-.578	1.677	-.033
Extra Curricular Activities	.480	1.170	.038
Home Resources	-.797	2.389	-.032
Home Cognitive Stimulation	-.027	2.113	-.002
R^2 = .25			

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Math in First Grade

Table 41 illustrates the result of the multiple regression on the math performance for the Asian children in First grade.

Background variables. Parent SES predicted the strongest positive association to the math performance for the Asian children in first grade with a .40 standard deviation increase. Coming from a single parent family and below the poverty level family indicated a negative association with a .14 and .10 standard deviation decrease respectively to the math performance for the Asian children. Male Asian children scored higher than female Asian children in math in the first grade.

Table 41: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Math Achievement in First Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	9.455**	3.477	.385**
Single Parent	-7.797	5.481	-.120
Parent Education	-4.159	5.025	-.108
Below Poverty Level	-6.004	5.289	-.108
Female	.105	3.558	.002
R^2 = .17			
Step 2			
Parent SES	10.339**	4.031	.404**
Single Parent	-9.895	6.434	-.144
Parent Education	-4.853	5.924	-.116
Below Poverty Level	-6.146	6.537	-.101
Female	-.429	4.114	-.010
Use Community Resources	-.660	2.371	-.047
Parent Involvement at School	-.879	2.214	-.039
Extra Curricular Activities	.842	1.544	.053
Home Resources	-.415	3.153	-.013
Home Cognitive Stimulation	.146	2.790	.009

$R^2 = .19$

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Parent involvement variables. Although no parent involvement variables indicated any significant association to the math performance for the Asian children in first grade a further investigation showed that use of community resources, parent involvement at school, and home resources indicators negatively influenced math performance resulting in a .05, .04 and .01 standard deviation decrease. However, Asian children who were involved more in extracurricular activities scored a .05 standard deviation higher than Asian children who were involved less in extracurricular activities.

After entering the parent involvement indicators the R square changed only 2% which means parent involvement variables explained only 2% of the variance to the math performance for the Asian children in first grade.

Effects of Parent Involvement on Math in Third Grade

Table 42 depicts the result of the multiple regression on the math performance for the Asian children in Third grade.

Background variables. As in the kindergarten and the first grade, parent SES predicted the strongest positive association with a .36 standard deviation increase to the math performance for the Asian children in third grade. Coming from a single parent family and below the poverty level family indicated a negative association with a .06 and .19 standard deviation decrease respectively to the math performance for the Asian children in third grade. No significant difference was found between the male and female

Asian children's math performance in third grade. Parent education resulted in a .10 standard deviation increase to the math performance for the Asian children in third grade.

Parent involvement variables. Like in the kindergarten and the first grade, no parent involvement indicators predicted any significant association to the math performance for the Asian children in third grade. However, a further investigation indicated that Asian children who used more community resources and were involved more in extracurricular activities scored a .06 and .01 standard deviation higher respectively than Asian children who used less community resources and were involved less in extracurricular activities. Parent involvement at school, home resources, and home cognitive stimulation indicated a negative association with a .09, .02 and .15 standard deviation decrease respectively to the math performance for the Asian children in third grade.

After entering the parent involvement variables, the R square changed 4% which means parent involvement variables explained only 4% variance to the math performance for the Asian children in third grade.

Table 42: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Math Achievement in Third Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.122**	3.568	.380**
Single Parent	-6.368	5.621	-.091
Parent Education	1.891	5.159	.045
Below Poverty Level	-5.725	5.429	-.095
Female	4.973	3.652	.106
	10.122	3.568	.380
$R^2 = .26$			

Step 2			
Parent SES	9.642**	3.903	.364**
Single Parent	-4.356	6.225	-.061
Parent Education	.190	5.735	.004
Below Poverty Level	-12.018	6.328	-.191
Female	4.469	3.985	.097
Use Community Resources	.816	2.293	.057
Parent Involvement at School	-2.015	2.143	-.087
Extra Curricular Activities	.186	1.494	.011
Home Resources	-.762	3.064	-.023
Home Cognitive Stimulation	-2.611	2.698	-.154
R^2 = .30			

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Effects of Parent Involvement on Math in Fifth Grade

Table 43 presents the result of the multiple regression on the math performance for the Asian children in Fifth grade.

Background variables. Parent SES indicated the highest positive association to the math performance for the Asian children in fifth grade with a .39 standard deviation increase. Coming from a single parent family and below the poverty level family indicated a negative association with a .08 and .13 standard deviation decrease respectively to the math performance for the Asian children in fifth grade. No significant difference was found between the male and female Asian children's math performance in fifth grade.

Parent involvement variables. Again, although no parent involvement indicator predicted any significant association to the math performance for the Asian children in

fifth grade a further investigation indicated that use of community resources, extracurricular activities, and home resources had positive impacts on the math performance and these indicators resulted in a .17, .03 and .04 standard deviation increase respectively in the math performance for the Asian children in fifth grade. However, parent involvement at school and home cognitive stimulation indicated a negative association with a .14 standard deviation decrease to the math performance for the Asian children in fifth grade.

After entering the parent involvement indicators the R square changed 6% which was the highest for the math in all selected ethnic groups across the school years for this research.

Table 43: *Result of Multiple Regression: Relationship between Parent Involvement and Asian Children's Math Achievement in Fifth Grade*

Variables	B	SE B	*B*
Step 1			
Parent SES	10.084**	3.337	.410**
Single Parent	-4.990	5.260	-.077
Parent Education	-.822	4.824	-.021
Below Poverty Level	-4.755	5.083	-.085
Female	6.155	3.417	.142
	10.084	3.337	.410
$R^2 = .24$			
Step 2			
Parent SES	9.572**	3.564	.394**
Single Parent	-5.442	5.688	-.084
Parent Education	-2.269	5.239	-.057
Below Poverty Level	-7.468	5.792	-.129
Female	6.975	3.641	.165
Use Community Resources	.916	2.097	.069
Parent Involvement at School	-2.889	1.958	-.136
Extra Curricular Activities	.465	1.365	.031

Home Resources	1.096	2.789	.036
Home Cognitive Stimulation	-2.206	2.468	-.142

R^2 = .30

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Analysis by Income

Below Poverty Level

Math Performance

Tables 44 to 48 indicate the result of the multiple regression in math performance for the below poverty group family.

Background variables. Coming from a single parent family did not indicate any significant impact to the math performance for the children in below the poverty level families in kindergarten, first grade and third grade. Parent education indicated a significant positive association with a .10, .14, .15, .17 standard deviation increase respectively to the math performance in kindergarten, first grade, third grade and fifth grade for the children in below the poverty level families. Female children in below the poverty level families scored higher in math in first grade, third grade and fifth grade but not in kindergarten when compared to male children in below the poverty level families. In contrast with European American children, coming from a Hispanic family indicated a negative association to the math performance in kindergarten, first grade and third grade but a positive association in fifth grade; coming from a African American family indicated a negative association to the math performance in kindergarten and third grade but a positive association in first grade and fifth grade; coming from an Asian family

indicated a positive association to the math performance in all grade levels except in third grade.

Parent involvement variables. Use of Community resources indicated a positive association with a .10, .07 and .10 standard deviation increase respectively in kindergarten, third grade and fifth grade to the math performance for the children in below the poverty level families. Extracurricular activities indicated a negative association with a .10, .05, .09 and .12 standard deviation decrease respectively to the math performance in kindergarten, first grade, third grade and fifth grade for the children in below the poverty level families. Home resources indicated a positive association to the math performance for the children in below the poverty level families in first grade, third grade and fifth grade but a negative association in kindergarten for the children in below the poverty level families. Home cognitive stimulation indicated a significant positive association with a .08 and .13 standard deviation increase respectively to the math performance in kindergarten and fifth grade for the children in below the poverty level families.

Table 44: *Result of Multiple Regression to the Math Achievement for the Children in Below Poverty Families in Kindergarten*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	.071	.615	.004	-.069	.680	-.004
Parent Education	2.485***	.613	.127***	2.174	.714	.108**
Female	-.516*	.574	-.028*	-.078	.640	-.004
African American	-3.368***	.741	-.161***	-2.522	.836	-.115**
Hispanic	-3.625***	.703	-.183***	-3.067	.773	-.153***
Asian	-7.938***	1.926	-.130***	-9.305	2.291	-.139***
Use Community Resources				1.467	.542	.105**
Parent Involvement at School				-1.021	.356	-.100**

Extra Curricular Activities	-.161	.313	-.018
Home Resources	.596	.253	.083**
Home Cognitive Stimulation	-1.697	.527	-.125***
R^2 =	.90	.90	

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

After entering the parent involvement indicators the R square did not change in kindergarten but did change 2% both in first grade and third grade and 4% in fifth grade. In these analyses, parent involvement variables explained only 2% of the variance both in first grade and third grade and 4% of the variance in fifth grade on the math performance for the children in the below poverty level group.

Table 45: *Result of Multiple Regression to the Math Achievement for the Children in Below Poverty Families in First Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	.605	.904	.022	.524	.981	.019
Parent Education	4.914***	.901	.172***	4.074***	1.031	.142***
Female	-.492	.843	-.018	.377	.924	.014
African American	-5.061***	1.089	-.166***	-3.887**	1.207	-.124**
Hispanic	-1.909	1.033	-.066	-1.261*	1.115	-.044*
Asian	-4.625	2.826	-.052	-6.966**	3.299	-.073**
Use Community Resources				1.434	.781	.072
Parent Involvement at School				-.893	.513	-.061
Extra Curricular Activities				-.646	.452	-.050
Home Resources				.951**	.365	.093**
Home Cognitive Stimulation				-2.843***	.760	-.146***

R^2 =	.05	.07

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 46: *Result of Multiple Regression to the Math Achievement for the Children in Below Poverty Families in Third Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-.106	1.330	-.003	-.197	1.446	-.005
Parent Education	8.400***	1.323	.199***	6.628***	1.516	.156***
Female	2.534	1.242	.063*	3.209**	1.361	.080**
African American	-7.739**	1.602	-.171***	-5.118**	1.776	-.110**
Hispanic	-1.910	1.522	-.045	-1.165	1.644	-.027
Asian	1.709	4.161	.013	-3.583	4.861	-.025
Use Community Resources				1.960	1.157	.066
Parent Involvement at School				-1.895**	.758	-.087**
Extra Curricular Activities				-.766	.665	-.040
Home Resources				1.925***	.537	.127***
Home Cognitive Stimulation				-2.736**	1.128	-.095**

R^2 =	.07	.09

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coeffici

Table 47: *Result of Multiple Regression to the Math Achievement for the Children in Below Poverty Families in Fifth Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	1.700	1.498	.037	1.247	1.624	.027
Parent Education	9.301***	1.491***	.195	8.231***	1.706	.170***
Female	2.557	1.396	.056	2.857	1.526	.062
African American	-8.902***	1.801***	-.174	-6.184**	1.992	-.117**
Hispanic	2.755	1.712	.057	4.698**	1.845	.097**
Asian	8.486	4.685	.057	4.357	5.465	.027
Use Community Resources				3.166*	1.292	.094*
Parent Involvement at School				-2.992***	.849	-.121***
Extra Curricular Activities				-.655	.746	-.030
Home Resources				2.284***	.603	.133***
Home Cognitive Stimulation				-4.121**	1.257	-.125**
R^2 =		.08			.12	

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Reading Performance

Tables 48 to table 51 indicate the result of the multiple regression in reading performance for the below poverty level group families.

Background variables. Coming from a single parent family did not indicate any significant association to the reading performance for the children in below the poverty level families in kindergarten, first-grade, third grade and fifth grade. Parent education indicated a significant positive association with a .16, .20, .18, and .10 respectively in kindergarten, first grade, third grade, and fifth grade to the reading performance for the

children in below the poverty level families. Male children in below the poverty level families scored higher than female children in below the poverty level families in reading in kindergarten, first grade, and third grade; but female children in below the poverty level families scored significantly higher than male children in below the poverty level families in reading in fifth grade. In contrast with European American children in below the poverty level families, those coming from an African American family indicated a negative association to the reading performance in all grade levels; those coming from a Hispanic family indicated a negative association in all grade levels except in third grade; and those coming from an Asian family indicated a positive association in first grade and fifth grade.

Parent involvement variables. Use of community resources indicated a positive association to the reading performance for the children in below the poverty level families in third grade and fifth grade with a .10 and .06 standard deviation increase respectively to the reading performance for the children in below the poverty level families. Parent involvement at school indicated a positive association to the reading performance in fifth grade. Extracurricular activities indicated a negative association to the reading performance in all grade levels except in kindergarten and first grade. Home resources indicated a positive association with a .13, .08, .09 and .15 standard deviation increase respectively to the reading performance in kindergarten, first grade, third grade and fifth grade for the children in below the poverty level families. Home cognitive stimulation indicated a negative association to the reading performance in all grade levels except in kindergarten.

After entering the parent involvement indicators, the R square did not change in kindergarten but did change 2% both in first grade and third grade, and 3% in fifth grade. In these analyses, the parent involvement variables explained only 2% variance in first grade and 3% variance in fifth grade to the reading performance for the children in the below poverty level group.

Table 48: *Result of Multiple Regression to the Reading Achievement for the Children in Below Poverty Families in Kindergarten*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	1.686*	.890	.058*	1.175	.980	.040
Parent Education	4.655***	.886	.153***	5.055***	1.030	.164***
Female	-1.457	.830	-.050	-1.324	.923	-.046
African American	-2.265**	1.072	-.070**	-1.921	1.205	-.057
Hispanic	-11.726**	1.017	-.382**	-11.41***	1.114	-.370***
Asian	-8.812	2.785	-.093	-11.11***	3.302	-.108***
Use Community Resources				-.575	.782	-.027
Parent Involvement at School				-.946	.514	-.060
Extra Curricular Activities				.537	.452	.039
Home Resources				.148	.365	.013
Home Cognitive Stimulation				.258	.760	.012
R^2 =		.19			.19	

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 49: *Result of Multiple Regression to the Reading Achievement for the Children in Below Poverty Families in First Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	.787	1.493	.017	.459	1.664	.010
Parent Education	10.700***	1.488	.218***	9.996***	1.750	.199***
Female	-4.762***	1.393	-.102***	-4.153**	1.567	-.087**
African American	-2.986*	1.800	-.057*	-1.913	2.048	-.035
Hispanic	-11.564***	1.707	-.233***	-10.52***	1.892	-.209***
Asian	-3.759	4.669	-.025	-7.256	5.599	-.043
Use Community Resources				.571	1.326	.016
Parent Involvement at School				-2.518**	.871	-.098**
Extra Curricular Activities				.867	.766	.039
Home Resources				1.392*	.619	.078*
Home Cognitive Stimulation				-1.507	1.289	-.044
R^2 =		.12			.14	

- *P < .05, ** p < .01, *** p < .001.*
- *B = Unstandardized coefficient*
- SE B = *Standard error of Beta*
- B = Standardized coefficient

Table 50: *Result of Multiple Regression to the Reading Achievement for the Children in Below Poverty Families in Third Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	4.959**	1.908	.086**	4.107*	2.056	.072*
Parent Education	10.929***	1.898	.182***	10.566***	2.156	.175***
Female	-5.564**	1.781	-.097**	-4.578**	1.935	-.080**
African American	-6.875**	2.298	-.106**	-4.088	2.526	-.062
Hispanic	-1.985	2.183	-.033	.033	2.338	.001
Asian	4.549	5.968	.024	-.764	6.914	-.004
Use Community Resources				4.091**	1.646	.098**
Parent Involvement at School				-2.420*	1.078	-.079*

Extra Curricular Activities	-1.000	.946	-.037
Home Resources	1.887*	.764	.088**
Home Cognitive Stimulation	-5.539**	1.604	-.135**
R^2 =	.06	.08	

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 51: *Result of Multiple Regression to the Reading Achievement for the Children in Below Poverty Families in Fifth Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	6.039**	1.765	.112**	5.205**	1.906	.097**
Parent Education	12.033***	1.758	.213***	10.187***	2.003	.180***
Female	-6.678***	1.645	-.124***	-5.066**	1.792	-.095**
African American	-8.213***	2.123	-.136***	-4.639*	2.339	-.075*
Hispanic	.012	2.018	.000	2.063	2.166	.036
Asian	8.062	5.522	.046	5.961	6.415	.032
Use Community Resources				2.175	1.516	.055
Parent Involvement at School				-3.208	.997	-.111
Extra Curricular Activities				-.128	.876	-.005
Home Resources				2.918**	.708	.145**
Home Cognitive Stimulation				-3.584	1.475	-.093
R^2 =	.08			.11		

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Above Poverty Level

Math Performance

Tables 52 to 55 represent the results of the multiple regression to the math achievement for those children who come from above poverty families.

Background variables. Coming from a single parent family indicated a negative association to the math achievement for the children in above poverty families in kindergarten, first grade, third grade and fifth grade. Parent education indicated a significant positive association with a .16, .17, .18, and .19 standard deviation increase respectively to the math achievement in kindergarten, first grade, third grade and fifth grade for the children in above poverty families. Female children in above poverty families scored significantly higher than male children in above poverty families in math in kindergarten, first grade, third grade, and fifth grade. In contrast to the European American, coming from an African American and a Hispanic family predicted a negative association to math achievement in all grade levels; coming from an Asian family indicated a negative association in kindergarten and first grade but a positive association in third grade and fifth grade.

Parent involvement variables. Use of community resources indicated a positive association with a .10, .06, .05, .01 standard deviation increase respectively to the math achievement in kindergarten, first grade, third grade, and fifth grade for the children from above poverty families. Parent involvement at school indicated a negative association with a .05, .06, .04, .01 standard deviation decrease respectively to the math achievement in kindergarten, first grade, third grade, and fifth grade for the children from above poverty families. Extracurricular activities also predicted a negative association with a

.11, and .08standard deviation decrease respectively to the math achievement in kindergarten, first grade, and a .10 standard deviation decrease both in third grade and fifth grade. Home resources indicated a positive association with a .11 standard deviation increase in kindergarten third grade and fifth grade and .10 standard deviation increases in first grade to the math achievement for the children from above poverty families. Home cognitive stimulation indicated a positive association to the math achievement for the children in above poverty families in all grade levels.

After entering the parent involvement indicators, the R square changed 2% in all grade levels which means parent involvement variables explained 2% of the variance in the math performance for the children in the above poverty level in all grade levels.

Table 52: *Result of Multiple Regression in Above Poverty Families on Math Achievement in Kindergarten*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-1.080*	.479	-.036*	-.653	.506	-.021
Parent Education	5.187***	.419	.195***	4.250***	.444	.162***
Female	.702*	.367	.029*	.866*	.383	.036*
African American	-6.445***	.589	-.175***	-5.696***	.627	-.151***
Hispanic	-4.558***	.526	-.138***	-3.578***	.556	-.106***
Asian	-1.319	1.118	-.018	-.563	1.191	-.008
Use Community Resources				1.074***	.277	.100***
Parent Involvement at School				-.532**	.160	-.054**
Extra Curricular Activities				-1.141***	.298	-.065***
Home Resources				1.641***	.238	.114***
Home Cognitive Stimulation				-1.174***	.317	-.095***
R^2 =		.10			.12	

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 53: *Result of Multiple Regression in Above Poverty Families on Math Achievement in First Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-1.665**	.669	-.039**	-1.077	.709	-.025
Parent Education	7.517***	.586	.202***	6.166***	.623	.166***
Female	1.634***	.512	.049***	2.043***	.538	.061***
African American	-9.664***	.823	-.187***	-9.132***	.881	-.172***
Hispanic	-5.818***	.736	-.125***	-4.554***	.781	-.096***
Asian	-2.368	1.564	-.023	-2.577	1.674	-.024
Use Community Resources				.973**	.389	.064**
Parent Involvement at School				-.770**	.225	-.056**
Extra Curricular Activities				-1.896***	.420	-.077***
Home Resources				2.032***	.335	.100***
Home Cognitive Stimulation				-1.439***	.445	-.082***
R^2 =	.11			.13		

- * *P < .05, ** p < .01, *** p < .001.*
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 54: *Result of Multiple Regression in Above Poverty Families on Math Achievement in Third Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-2.325**	.835	-.044**	-.969	.876	-.018
Parent Education	9.827***	.728	.210***	8.146***	.767	.176***
Female	4.139***	.639	.098***	4.906***	.664	.117***
African American	-13.499***	1.036	-.206***	-13.32***	1.093	-.199***
Hispanic	-6.759***	.918	-.115***	-4.975***	.965	-.083***
Asian	1.444	1.950	.011	2.571	2.066	.019
Use Community Resources				.901	.480	.047
Parent Involvement at School				-.767**	.278	-.044**
Extra Curricular Activities				-2.852***	.518	-.092***
Home Resources				2.856***	.415	.111***
Home Cognitive Stimulation				-1.800***	.549	-.082***
R^2 =		.13			.15	

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 55: *Result of Multiple Regression in Above Poverty Families on Math Achievement in Fifth Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-2.479**	.810	-.048**	-1.169	.846	-.022
Parent Education	10.316***	.707	.226***	8.691***	.741	.193***
Female	3.830***	.621	.093***	4.541***	.642	.111***
African American	-13.802***	1.006	-.216***	-13.69***	1.056	-.211***
Hispanic	-5.551***	.891	-.097***	-4.029***	.931	-.070***
Asian	3.934*	1.891	.032*	4.422*	1.995	.034*
Use Community Resources				.156	.464	.008
Parent Involvement at School				-.192	.268	-.011
Extra Curricular Activities				-2.816***	.500	-.093***
Home Resources				2.843***	.401	.114***
Home Cognitive Stimulation				-.770	.530	-.036
R^2 =		.14			.16	

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Reading Performance

Tables 56 to 59 represent the result of the multiple regression to the reading achievement for the children who come from above poverty families.

Background variables. Coming from a single parent family predicted a negative association to the reading achievement for the children who come from above the poverty level families in all grade levels. Parent education indicated a positive association with a

.20, .15, .18, and .21 standard deviations increase respectively in kindergarten, first grade, third grade and fifth grade to the reading achievement for the children in above the poverty level families. Male children in rich family scored higher than female children in above poverty families in reading in kindergarten, first grade, third grade and fifth grade. In contrast with European American children, coming from an African American or a Hispanic family predicted a negative association to reading achievement in kindergarten, first grade, third grade and fifth grade; coming from an Asian family indicated a positive association in all grade levels except in fifth grade.

Parent involvement variables. Use of community resources indicated a positive association to the reading achievement in all grade levels except in third grade. Use of community resources predicted a standard deviation increase of a .04 both in kindergarten and first grade and a .01 standard deviation increase in fifth grade to the reading achievement for the children in above the poverty level families. Parent involvement at school predicted a negative association with a .06 standard deviation decrease both in kindergarten and fifth grade, and a .05 and .07 standard deviation decrease respectively in first grade and third grade to the reading achievement for the children in above poverty families. Extracurricular activities indicated a negative association to the reading achievement for the children in above the poverty level families in all grade levels. Home resources indicated a positive association with a .09, .10, .11, and .13 standard deviation increase respectively to the reading achievement in kindergarten, first grade, third grade and fifth grade for the children in above the poverty level families. Home cognitive stimulation indicated a negative association with a .04, .05, .02 and .04 standard deviation decrease respectively to the reading achievement for

the children in above the poverty level families in kindergarten, first grade, third grade and fifth grade.

After entering the parent involvement indicators, the R square change 1% in kindergarten, 2% both in first grade and third grade and 5% in fifth grade which means the parent involvement variables explained 1% variance to the reading performance in kindergarten, 2% variance in both first grade and third grade and 5% variance in fifth grade for the children in the above poverty level group.

Table 56: *Result of Multiple Regression in Above Poverty Families on Reading Achievement in Kindergarten*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-.421	.617	-.011	-.029	.656	-.001
Parent Education	7.605***	.540	.222***	6.771***	.576	.198***
Female	-2.623***	.472	-.085***	-2.611***	.497	-.085***
African American	-2.621***	.758	-.055***	-1.979**	.814	-.040**
Hispanic	-8.088***	.678	-.189***	-7.209***	.721	-.165***
Asian	-.213	1.439	-.002	.733	1.546	.008
Use Community Resources				.524	.359	.037
Parent Involvement at School				-.802***	.208	-.063***
Extra Curricular Activities				-.674	.387	-.030
Home Resources				1.654***	.309	.088***
Home Cognitive Stimulation				-.580	.411	-.036
R^2 =		.11			.12	

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 57: *Result of Multiple Regression in Above Poverty Families on Reading Achievement in First Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-1.837*	.957	-.031*	-1.013	1.014	-.017
Parent Education	9.473***	.838	.181***	7.944***	.891	.152***
Female	-4.465***	.733	-.095***	-4.336***	.769	-.092***
African American	-5.661***	1.178	-.078***	-4.459***	1.260	-.060***
Hispanic	-9.184***	1.053	-.140***	-7.199***	1.117	-.107***
Asian	2.541	2.238	.018	3.523	2.392	.024
Use Community Resources				.788	.556	.037
Parent Involvement at School				-1.625***	.322	-.083***
Extra Curricular Activities				-1.583**	.600	-.045**
Home Resources				2.934***	.479	.102***
Home Cognitive Stimulation				-1.230*	.636	-.050*
R^2 =		.08			.10	

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 58: *Result of Multiple Regression in Above Poverty Families on Reading Achievement in Third Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-4.049***	1.050	-.061***	-2.323*	1.102	-.034*
Parent Education	12.353***	.916	.212***	10.251***	.965	.178***
Female	-5.272***	.804	-.101***	-4.465***	.835	-.086***
African American	-11.811***	1.303	-.145***	-11.29***	1.375	-.136***
Hispanic	-8.200***	1.155	-.112***	-5.588***	1.214	-.075***
Asian	.675	2.453	.004	1.619	2.599	.010
Use Community Resources				-.164	.604	-.007
Parent Involvement at School				-1.558***	.349	-.072***
Extra Curricular Activities				-3.277***	.651	-.085***
Home Resources				3.372***	.523	.106***
Home Cognitive Stimulation				-.655	.690	-.024
R^2 =		.11			.13	

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Table 59: *Result of Multiple Regression in Above Poverty Families on Reading Achievement in Fifth Grade*

	Step 1			Step 2		
Variables	B	SE B	*B*	B	SE B	*B*
Single Parent	-2.220**	.891	-.039**	-1.076	.936	-.019
Parent Education	12.150***	.777	.244***	10.422***	.819	.210***
Female	-3.438***	.683	-.076***	-2.831***	.709	-.063***
African American	-12.292***	1.106	-.176***	-11.89***	1.167	-.166***
Hispanic	-7.520***	.980	-.120***	-5.253***	1.030	-.082***
Asian	-.603	2.080	-.004	-.120	2.205	-.001
Use Community Resources				.195	.513	.010
Parent Involvement at School				-1.054***	.297	-.057***
Extra Curricular Activities				-2.602***	.553	-.078***
Home Resources				3.453***	.444	.126***
Home Cognitive Stimulation				-1.034	.586	-.044
R^2 =		.11			.16	

- * *P* < .05, ** *p* < .01, *** *p* < .001.
- B = *Unstandardized coefficient*
- SE B = *Standard error of Beta*
- *B* = Standardized coefficient

Summary

Among the background variables parent socio economic status indicated the strongest positive association to the math and reading performance for both children in below the poverty and children in above the poverty in all ethnic groups. Coming from a single parent family indicated a negative association to the math reading performance for the Asian and European American children in all grade levels. Children who come from

below the poverty families scored less in math and reading than did children who come from above poverty level families. Male children scored higher than female children in math in all ethnic groups.

The descriptive analysis indicated a significant difference between the European American children and children of minority groups. A significant difference was also found in the parent involvement models for the children in four ethnic groups. The summary of the findings, their implications and the recommendations will be discussed in the next chapter.

CHAPTER V

SUMMARY, DISCUSSION AND RECOMMENDATION

Introduction

This is a research about parent involvement and its effect on the math and reading achievement of children in kindergarten, first grade, third grade and fifth grade. This chapter synthesizes the result of several analyses in chapter IV. The finding of this research is interpreted based on social capital theory and ecological perspective. The implication of this research and suggestion for future research are also presented in this chapter.

Summary of the Findings

Background Variables

Consistent with the existing literature (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994;1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999) parent socio-economic status was found to be significantly associated with the math and reading achievement of all children across the socio-economic status and ethnic background (below poverty and above poverty, European American, African American, Hispanic and Asian children) in kindergarten, first grade, third grade and fifth grade. Parent socio-economic status was related to the parent's education, occupation and income (Yan & Lin, 2005). Parents who have a higher education usually have a better job and are in a wealthier economic situation. The findings of this research indicated that children who live in the above poverty level group usually do better than children who live in the below poverty level group. Several researchers also reported similar findings (Yan & Lin,

2005; Lee & Bowen, 2006; Ogbu, 1994; 1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001).

Parents who have higher education are usually aware about the importance of education for their children (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994; 1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999). They know how to help their children and they understand the school system very well. Research also indicated that parents who have a higher level of education also have higher education expectations for their children (Kao, 1995). For that reason parent socio-economic status is positively associated with the educational attainment of all children. Being in the below poverty level group had a negative association on the math and reading achievement for the male European American, African American, and Hispanic children. Female children showed better performance in math, but they were left behind in reading performance when compare to male children in all ethnic groups except Asian. Being in a single parent family had a negative association with the math and reading performance for Hispanic and African American Children. Research indicated that children who come from single parent family are usually members of economically disadvantage groups. Single parents usually work all day and have less time to spend on the education of their children (Kao, 1995; Schneider & Lee, 1990; Paratore, Hindin, Krol-Sinclair, & Duran, 1999). According to most research, Hispanic and African American groups are generally at risk (Rodriguez-brown, Li, & Albom, 1999; Stanton-Salazar & Downburst, 1995; Padilla & Gonzaalez, 2001) and children from single parent families of these two groups are more at risk than children of other ethnic groups. Being from a single parent family might have

an impact on the math and reading performance of children from Hispanic and African American families.

Parent Involvement Variables

The math and reading performance of the children in kindergarten, first grade, third grade and fifth grade have varied because of the participation in both inside and outside home enrichment activities. Involvement in both inside and outside home enrichment activities did not bring the same benefit for the children in below poverty or above poverty category in all ethnic groups. The higher the level of participation of parents indicated higher math and reading achievement for the children in the European American ethnic groups. For children who were in the at risk groups (such as Asian, Hispanic, and African American) parent involvement did not have much positive impact on their math and reading performance.

Research indicated that parents who were more involved in the early education of their children, had children who did well in later education (Barrera & Warner, 2006; Paul, 2006; Giacchino-Baker & Piller, 2006; Glenn, 2005). A higher level of involvement by parents in early education reduces the probability that their children would be left behind in the school (Lewis, 2001; Cook, Habib, Phillips, Settersten, Shagle, & Degirmencioglu, 1999; Hamilton & Richardson, 1995; Paratore, Hindin, Krol-Sinclair, & Duran; 1999; Quiocho & Rios, 2000; Stipek, 1996; Alexander, 2002). Parent involvement in school activities did not have any impact on the math and reading performance for Asian children but it did have an impact on the math and reading performance in kindergarten, first grade, third grade and fifth grade for European American, Hispanic and African American children. Research indicated that home

resources provided a rich environment where children could develop their literacy and math skills (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994;1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999), but it was not true for all ethnic groups in this study. Home resources had a positive association to the math and reading achievement for European American children. However, home resources were not found to be associated with the reading achievement of Hispanic, African American and European American children. Use of community resources had a positive impact on the math achievement of all ethnic groups except for Asian. Use of community resources failed to indicate any association to the reading achievement of Asian and European American children, but it did have an impact on the reading achievement of Hispanic and African American children. Extra-curricular activities and home cognitive stimulation had a positive association to the math and reading achievement of the children in all ethnic groups expect for Asian. One reason that many parent involvement variables failed to show an association with children's achievement may be that the parenting style of Asian group is culturally different than that of other groups. In this research, the variables that the researcher chose to examine for their impact on parent involvement and its relationship to the math and reading achievement could be variables the Asian parents might not value for the education of their children. Research indicated that Asian immigrants are voluntary minorities in the American society and Asian parents always push their children to do well in the school (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990). Research also suggested that Asian children are a model minority in American society and most Asian

children get support from the successful people in their own group which might help them to do well in the school (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990). This might be the reason that parent involvement variables did not show any impact to the math and reading achievement for the Asian children in kindergarten, first grade, third grade and fifth grade. However, after entering the parent involvement indicators, the highest number of R^2 changed for the Asian groups.

Comparing Parent Involvement Effects on Education Achievement by Race

European American

The findings of this research indicated that European American children had more home resources, higher parent SES and more frequent parent involvement than the children of other ethnic groups. However, the impact of parent involvement on the math and reading achievement of European American children was similar to that of the Hispanic and African American children. After entering the parent involvement variables in to the eight models, the R^2 did not change that much for the European American children. All of the background variables showed a significant impact on the math and reading achievement for European American children. The findings of this research also indicated that Female European American children did better in math than male European American students but not in the reading performance. Male children in this group showed better performance than females.

African American

Poverty and being from single parent families had a negative impact on the math and reading performance of African American children. Research revealed that a larger

number of African American children live below the poverty level than do European American children (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994;1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999). However, although poverty was negatively associated with the math and reading performance of African American children, the parent involvement indicator showed a stronger positive relationship than the European American ethnic group. Use of community resources and home cognitive stimulation showed a strong positive relationship to the math and reading performance for the African American children.

Hispanics

The findings of previous research indicated that Hispanic parents are involved less in the education of their children than parents in the other ethnic groups (Rodriguez-brown, Li, & Albom, 1999; Stanton-Salazar & Downburst, 1995; Padilla & Gonzaalez, 2001; Okagaki, Frensch, & Gordon, 1995; Muller, Stage & Kinzie, 2001). But the findings of this research showed that the level of parent involvement for Hispanic children was similar to the level of parent involvement for European American and African American children. Home cognitive stimulation, use of community resources and extracurricular activities had a positive impact on the math and reading performance of Hispanic children. Female Hispanic children performed better than male Hispanic children in math; but for the reading performance male children did better.

Asians

The findings of this research indicated that parent SES had a significant and strong relationship to the math and reading performance for Asian children. But the result

of the impact of parent involvement variables was different from that of other ethnic groups. No parent involvement variable showed a significant relationship to the math and reading performance of Asian children in kindergarten, first grade, third grade and fifth grade. However, there was a greater variation found in R^2. After entering the parent involvement variables on eight different models, R^2 changed 6% for the math performance in fifth grade and that was the highest amount of change found among all models in this research. Poverty did not show any negative impact in most of the grade levels. Research suggested that most Asian Americans are voluntary minorities in the American society (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990). They consider education as a way to success. They accept all the hardships in the American society and try to overcome those hardships to succeed in the society. Research also revealed that Asian parents have higher education expectation (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990) and Asian children also get help from their peers in their own ethnic group. All of these might contribute to the better performance of Asian children in the school.

Discussion

This research presents the impact of parent involvement on the math and reading achievement of children in different ethnic groups in kindergarten, first grade, third grade, and fifth grade. The findings of this research will be explained based on the social capital theory and ecological perspectives. Both of the theories see the academic achievement of the children as an outcome of partnership between home, school and community.

Implications for Parent Involvement: From Ecological Perspectives

The ecological model gives emphasis on the external and internal influences of growth and development of the children. A child is born and grows up in a social setting. Each social setting is part of a multiple nested system: such as family is nested by the school, community, church and other social and cultural organizations.

The ecological perspectives was used to interpret the impact of parent involvement on the math and reading achievement of the children in kindergarten, first grade, third grade and fifth grade. To understand the parent involvement and its impact on the math and reading performance of young children in kindergarten, first grade, third grade and fifth grade, this study considered the variables a) parent SES (parent education, occupation and income), children in below poverty group, children from single parent family and female, b) parent involvement in the school, parent involvement in the community, home resources and participation in extra curricular activities. The ethnic groups examined were European American, African American, Hispanic and Asian.

The findings of this research indicated that the parent SES variable (parent education, occupation and income) was highly associated with the math and reading achievement of the children in all ethnic groups. If we look at the findings, parent education played an important role in the performance of the children in all ethnic groups. Poverty was negatively associated and home resources was positively associated with the math and reading performance of the children in all ethnic groups except for Asian. Poverty was interrelated with the parent education and the home resources. Those parents who had higher levels of education also had a chance to earn more money. When

parents earned more money, they could buy more home resources for their children. Those parents could also invest their time in the co-curricular activities of their children. They were also aware of school activities and felt obligated to do voluntary service in the school. Their education enlightened them to set a vision for their children. Several studies also indicated that parent education was highly related to the math and reading performance of the children (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990). While parents' higher education and better occupation and income were positively related to the math and reading performance of all children in all ethnic groups, parents' low level of education and low income were negatively associated with the math and reading performance of all children in all ethnic groups except for the Asian group.

Bonfenbrenner (1972) also gave emphasis to the prenatal stage of a child. He mentioned that if parents took better care of their children at the prenatal stage, it would have a long term effect on the development of the child. Parents may not be able to see the immediate results but later in the school year it would have a positive impact on the performance of their children. Here we have to remember that prenatal care is also associated with the SES of the parents.

Parents' low income and lower degree/education was negatively associated with the academic performance of the European American, African American and Hispanic children but it did not have any impact on the math and reading performance of Asian children. Some Asians immigrated to this country as a voluntary minority group (Ogbu, 1994) and tried to overcome all the obstacles to succeed in the new society. For that reason poverty may not negatively affect the performance of the Asian children.

The findings of this research also indicated that use of community resources (visits to the library, museum, zoo, aquarium, and a play or concert) was positively associated to the math and reading performance of the European American, African American, and Hispanic children. Bronfenbener (1986) put emphasis on the involvement of the community to the education process of the children. If a community is resourceful, the children of the community would be benefited by using those resources. Research indicated that the use of community resources had a positive impact on the performance of the adolescents (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990). The findings of this research have confirmed that the use of community resources also has a positive influence on the performance of young children. Contrary to the findings of several others research that indicated that Hispanic and African American groups were at risk (Rodriguez-brown, Li, & Albom, 1999; Stanton-Salazar & Downburst, 1995; Padilla & Gonzaalez, 2001; Okagaki, Frensch, & Gordon, 1995; Muller, Stage & Kinzie, 2001), the findings of this research revealed that Hispanic and African American children performed well in the school. Hispanic and African American parents were involved more in different activities inside and outside of the home with their children. Hispanic and African American parents also used more community resources and it had a positive impact on the math and reading achievement of their children.

A large number of African American and Hispanic children live below the poverty level (Yan &Lin, 2005; Rodriguez-brown, Li, & Albom, 1999; Stanton-Salazar & Downburst, 1995; Padilla & Gonzaalez, 2001; Okagaki, Frensch, & Gordon, 1995; Muller, Stage & Kinzie, 2001). Children who live below the poverty level have a lack of

resources at home, but they might use the community resources to fill out that gap. Use of community resources did not have any impact on the math and reading performance of Asian children. The math and reading performance of Asian children was equal to or better than that of European American children. Asian parents who had a better education could help their children to do better in all subject areas. Often Asian families will share their educational material with each other which might help their children to do well in the school (Kao, 1995). Asian parents may value a visit to the library but not to the aquarium, zoo, play or concert. For those reasons the use of community resources may not had any impact on the math and reading performance of Asian children.

Implications for Parent Involvement: From Social Capital Theory Perspectives

The findings of this research indicated that parent SES had a significant influence on the math and reading achievement of all children in kindergarten, first grade, third grade and fifth grade. Parent SES represents parent education (human capital), income level (financial capital) and parent occupation (human capital). The findings of other research indicated that parent education, income and occupation had a positive relationship to the academic achievement of young children. If parents have a better education, they will have a better occupation and will also make more money. Parent education also creates an opportunity for the family to establish a better social network. Parents who have a higher education (at least a degree from college) usually show more concern about the education of their children. Better educated parents can help their children financially and emotionally through the education process of their children. Contrary to the findings of other research that suggested African American and Hispanic children did not perform in the school as well as the European America children (Yan &

Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994;1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999), the findings of this research indicated that African American and Hispanic children performed at the level of European American children. One of the reasons for this different finding may be the fact that the parent involvement of African American and Hispanic children has improved over a period of time. African American and Hispanic parents may have become more aware of the educational needs of their children. In addition, "the no child left behind act" (social capital at school) has tried to motivate parents to become more aware and involved in the education of their children. The pressure from the school was more for those parents whose children did not perform well in the school. The school also took an active role in educating all children. If we look at the findings, we will see that the performance of the children in math and reading in all ethnic groups in third grade was higher than the performance of the children in math and reading in kindergarten, first grade and fifth grade. The standard deviation was smaller and R^2 did not change that much. In the third grade, children had to face standardized tests. The performance of the students in the standardized tests usually decides, if there will be sanctions for the school or promotion of the teacher. For that reason teachers and schools took initiatives to improve the performance of the children in the school. If we look at the findings we see that there was a significant difference in the math and reading performance between male and female students in kindergarten, first grade, and fifth grade. There was no difference found in the math and reading performance of the male and female students in third grade. One reason may be that teachers took extra care with the children in third grade because of the standardized test.

The research indicated that for the Hispanic and African American children, the pattern of the parent involvement was different than that of European American group (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994;1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999). When looking at the findings of the research, we also see that the pattern of parental involvement for African American and Hispanic groups was different from that of the European American group. As mentioned earlier African American and Hispanic groups are at risk. The children of these two groups live more below the poverty level than children in other groups. Since African American and Hispanics parents tend to have less education, they work in lower paid job and live under the poverty level. Most of the poor families have problems keeping home resources for the education of their children (Yan & Lin, 2005; Lee & Bowen, 2006; Ogbu, 1994;1987; Kao, 1995; Machamer & Gruber, 1998; Muller, Stage & Kinzie, 2001; Scheider & Lee, 1990; Bempechat & Drago-Severson, 1999). Parents who are below the poverty level tend to participate less in extra-curricular activities (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990). They also give less voluntary service in the school (Kao, 1995; Yan & Lin, 2005; Ogbu, 1994; 1987; Steinberg, Dornbusch & Brown, 1992; Schneider & Lee, 1990)). Home resources, higher education of the parents, socio-economic status of the parents are associated with performance of the children in the school. Most of the Hispanic parents did not speak English very well (Rodriguez-brown, Li, & Albom, 1999; Stanton-Salazar & Downburst, 1995; Padilla & Gonzaalez, 2001; Okagaki, Frensch, & Gordon, 1995; Muller, Stage & Kinzie, 2001). Due to the lack of English proficiency skills, parents did not feel

comfortable getting involved in school activities. The lack of English proficiency was holding them behind and pushing them to do a low paid job. As a result parents could not afford to keep educational resources in the home for their children.

The social capital in a community also has a great impact on the performance of the children. Research revealed that African American and Hispanic parents lived more in poor neighborhood than other groups. Usually, people who earn less money live below the poverty level and also live in poor neighborhoods. The schools located in poor communities have fewer resources. Poor community members contribute less to the school and as a result students generally receive a poorer education.

Because of the "no child left behind act", all schools are under pressure to provide better education for all children. But still we can not ignore the importance of parent involvement to the educational process of the children. We can not disregard the importance of home resources (social capital at home), home cognitive stimulation (cultural capital at home), use of community resources (social capital at community) and parent involvement at school (social and cultural capital at school). All of those indicators showed a positive relationship to the math and reading performance of children in all ethnic groups except for the Asian group. As mentioned earlier, some Asians belong to the voluntary minority group in this society. Culturally Asian parents value education and try to motivate their children in all possible ways. Asian parents' expectations are very high (Kao, 1995) which motivates Asian children to perform well in the school. Parent involvement indicators in this research did not show any significant relation to the math and reading achievement for Asian children, however the highest number of R^2 was changed in the multiple regression analyses after entering the parent involvement

indicator for this group. For that reason it is not possible for us with certainty to conclude that parent involvement indicator did not have any impact on the math and reading achievement for Asian children.

Recommendations

The findings of this research indicated that family, school and community played an important role in the educational process of the children. However, the pattern of parent involvement was not same for all ethnic groups. Before implementing any policy involving parent in the educational process of the children, policymakers should understand and recognize the cultural value and social capital of the children. Parent involvement should not be same for poor and non poor students or children from all ethnic groups. To increase the parent involvement in the educational process of the children will take time. It is very important to explain to the parents why they should get involved in the educational process of their children and how it would benefit their children. It is very hard to address the needs all parents have for getting involved in education of their children; however educators and policymakers should consider the factors that have the strongest influence on involvement in the education of their children. Policy makers might also consider a preparation program for mothers just as we prepare teachers to teach in the schools. We can educate individuals before they become parents how they can help their child in a developmentally appropriate way throughout the life. A mother is the first teacher for a child and any policy should consider that fact. If we want to have a good performance from a child, we have to show parents how they can help the child perform well. If we have well prepared parents, it will be easier for the schools and teachers to provide a quality education for the children in all ethnic groups.

Strategies of Parent Involvement

Based upon the literature and findings of this research, the following strategies are suggested as ways to involve parents in the educational process of their children:

a) The findings of this research indicated that children above the poverty level performed better than children below the poverty level. Policy regarding educating the parents in below the poverty level families guide their children through the education process might reduce this gap.

b) A large number of Hispanic and African American children live below the poverty level. The findings of this research indicated that parents of the children who live below the poverty level are involved less in the educational process of their children, and it has a negative impact on the academic performance of their children. Policy that involves and motivates Hispanic and African American parents in low income families to get involved in the educational process of their children could improve the situation. Teachers should make it clear to the parents why and how they should involve get involved in the educational process of their children.

c) Female children from European American families did not perform well in reading. Policy regarding educating European American parents to help their daughters to perform well in reading might reduce this gap.

d) Home resources, extracurricular activities, and home cognitive stimulation indicated a negative association to the math and reading performance for the European American children. Policymakers should reassess the effectiveness of the different types of extracurricular activities and home cognitive stimulation

activities for the children of European American ethnic groups and decide how the activities could positively influence the academic performance of the children in European American ethnic groups.

e) Children from single parent families are at risk. Policymakers should take initiatives to help the single parents to raise their children. Schools should influence the community members to extend their hands to the children form single parent families and help them through the education process.

f) Programs such as Children's Aid Society (Devancy, Ellwood & Love, 1997), The Family Resource Centers (Wattenberg & Pearson, 1996), The Families and Schools Together (FAST) (The Alliance for Children and Families, 1998), School Development Program (Comer & Haynes, 1991) could be wonderful models to increase the relationship among family, school and community for the education of the children.

As mentioned earlier, this research recommends some promising practices to involve parents in different intervention activities which are explained in the following table.

Table 60: *Promising Practices*

Goals	Intervention Activities For All Parents	Intervention Activities For At Risk Parents
Parent Involvement	Use media (radio, television, newspaper, news letter) to inform parents about the importance of	Special letters, phone call, individual meeting, motivate other parents to work as mentors to inform

	parent involvement.	the importance of parent involvement.
	A handout about the parent's rights in the school.	Use the community bulletin board to inform parents about their rights in the school.
	A handout about how parents can make difference in the life of a child.	Have a home visit to discuss with the parents about how the parents can make difference in the life of the children.
	Assist parents by providing with the strategies to help their children in a developmentally appropriate way through the education process.	Have a home visit, make a phone call to discuss about the strategies to help the children in a developmentally appropriate way through the education process.
Parent Co-operation	Invite parents to attend the PTA meeting, teacher conferences.	Parent "Co-operation Center" where parents can help parent.
	Home school reading program to promote literacy	Home visit to discuss with parent about the importance

	skills.	of literacy and how parent can help their children regarding the issue.
	Parent homework checkout sheet to confirm the homework completion.	Contact with parents to discuss about the progress of the children in the school.
	Family, school and community meeting to develop the discipline rule for the school.	To have a telephone call or home visit to discuss about the school policy and discipline issue.
	Parent involvement in the different co-curricular activities in the school.	Contact parents and encourage them to attend the co-curricular activities in the school.
Bilingual Parents	Develop a well understanding relationship with parents and school personnel.	Publish bilingual notes, policy, use interpreter to communicate with the non-English speaking parents in the school.
	Have a survey to identify the needs of the parents.	Set up a one to three years action plan to involve parents in the education

		process of their children.

Suggestions for Future Research

The findings of this research indicated that there was a significant relationship between parent involvement and math and reading achievement of the children in kindergarten, first grade, third grade and fifth grade. The findings also indicated that there were different types of parent involvement, and the math and reading achievement of children in kindergarten first grade, third grade and fifth grade varied based on the type of involvement. However this research had some limitations and any future research should consider the following issues to overcome the limitation of this research:

a) This research used the secondary data which were already collected and variables identified. Future researchers can collect in a wide range data by choosing different types of parent involvement variables and see their impact on the educational achievement of the children.

b) This is a quantitative research. The combination of qualitative and quantitative methods would provide us with a more in depth picture for understanding parent involvement and its impact on children.

c) A follow up study could help us to understand the consistency of the findings of this research.

d) Extracurricular activities indicated a negative association to the math and reading performance for the children in both below the poverty level and above the poverty level families. A further study should be conducted to get an in-depth understanding of how extracurricular activities impact math and reading

performance for the children in both below the poverty and above the poverty level families in all ethnic groups.

e) Experimental and ethnographic studies would give us more insight about the nature of parent involvement for each individual ethnic group.

f) This research only considered the attitude of the parents when looking at parent involvement in the educational achievement of children. Future research should look at the attitude of teachers, administrators and community members to see the influence of parent involvement.

g) Parent involvement variables did not indicate any significant relation to the math and reading achievement for the Asian children. Culturally Asian parents may not have given value to the activities that this research considered. A further study needs to be conducted to see what types of activities Asian parents value and how they impact the academic performance of the Asian children.

Summary

The purpose of this research was to see the impact of parent involvement on the children in four ethnic groups. Four research questions were developed to guide the research. A nationally representative comprehensive dataset was used in this research. The findings of this research indicated a significant relationship between parent involvement and its impact on the educational achievement of the children. But the impact of parent involvement was not the same children in below and above the poverty level. It was also not same for children in different ethnic groups. Parent involvement variables did not indicate any significant impact on the educational achievement for Asian children. An explanation was provided for that in the discussion section. Further

research should consider examining this ethnic group to understand the nature of parenting style, the value of the culture, and attitude of the parents and children towards education.

Previous research suggested that Hispanic and African American children were left behind (Rodriguez-brown, Li, & Albom, 1999; Stanton-Salazar & Downburst, 1995; Padilla & Gonzaalez, 2001; Okagaki, Frensch, & Gordon, 1995; Muller, Stage & Kinzie, 2001). The findings of this research indicated that these two groups are moving forward. The performance of African American and Hispanic children was equal to that of European American ethnic groups, and parent involvement variables were more significant than those of the European American group.

The No Child Left Behind Act (NCLB) might have contributed to this. Further research should look at the No Child Left Behind Act and its influence on the performance of the children. NCLB held schools and teachers more accountables for having students meet certain standardized test scores. But without the help of the family and the community it is impossible for the school to reach those levels. Parent involvement is important and the NCLB act considered this importance. Future policy should put more importance on parent involvement and more practical and timely policies should be developed. The American people want to see poor and non poor children performing equally in the classroom. There should not be any ethnic difference on the performance and it is very important for the ethnic unity in the United States. In the international ranking, the performance of the American children should be highest and for that reason American parents should more involve in the education process of their children. Policymakers should take initiative to make it happen.

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APPENDICES

Appendix A—Coding Scheme and ECLS (K to Fifth grade) Variable Descriptions

Variable Label	ECLS (K to Fifth grade) variable name	Description and Coding Scheme
Parent Involvement variables		
Home resources About how many children's books does {CHILD} have in your home now, including library books?	P6CHLBOO	Coding remains same as the original.
Do you have access to the Internet at home?	P6INTACC	
Home Cognitive Stimulation In the past weeks, how often • tell the child stories • sing songs with child • play games or do puzzles with child • talk about nature or do science project with the child • build something or play with construction toy with child • play sports or exercise together • do art together	P5TELLST P5SINGSO P5GAMES P5NATURE P5BUILD P5SPORT P5HELPAR	A composite variable is created using the sum of the seven items as: 1=never, 2=once or twice in a week, 3=3-6 times in a week, and 4=everyday
Parent Involvement in School Since the beginning of this school year have you or the other adults in your household…. • Attended an open house or back-to-school night?	P6ATTENB	
• Attended a school or class event, such as a play, sports event, or science fair?	P6ATTENS	A composite variable is created using the average of four items, recorded as: 1=yes, 0=no
• Volunteered at the school or served on a committee?	P6VOLUNT	
• Participated in fundraising for {CHILD}'s school?	P6FUNDRS	
Extracurricular Activities Outside of school hours in the past year, has {CHILD} participated in: • Dance lessons?..... • Art classes or lessons, for example, painting, drawing,	P6DANCE	A composite variable is

sculpturing? • Organized performing arts programs, such as children's choirs, dance programs, or theater performances? .... • Organized clubs or recreational programs, like scouts?..... • Music Lesson?..... • Participate athletic event Do you have a home computer that {CHILD} uses?	P6ARTCRF P6ORGANZ P6CLUB P6MUSIC P6ATHLET P6HOMECM	created using the average of six items, recorded as: 1=yes, 0=no
Use of Community resources In the past month, that is, since {MONTH} {DAY}, has anyone in your family done the following things with {CHILD}? visited a library with {CHILD}? Visited an art gallery, museum, or historical site? Visited a zoo, aquarium, or petting farm? Gone to a play, concert, or other live show?	P6LIBRAR P5MUSEUM P5ZOO P5CONCRT	A composite variable is created using the average of four items, recorded as: 1=yes, 0=no
Dependent Variables		
Academic Performance		
Spring reading IRT scale score	C2R3RSCL	A continuous IRT –based score ranging from 16.060 to 138.490
Spring math IRT scale score	C2R3MSCL	A continuous IRT –based score ranging from 8.730 – 105.320.
Spring reading IRT scale score	C4R3RSCL	A continuous IRT –based score ranging from 18.670 – 163.120.
Spring math IRT scale score	C4R3MSCL	A continuous IRT –based score ranging from 9.830 – 120.500.

Spring reading IRT scale score	C5R3RSCL	A continuous IRT –based score ranging from 45.51 – 178.92.
Spring math IRT scale score	C5R3MSCL	A continuous IRT –based score ranging from 32.110 – 146.590.
Spring reading IRT scale score	C6R3RSCL	A continuous IRT –based score ranging from58.230 – 181.220
Spring math IRT scale score	C6R3MSCL	A continuous IRT –based score ranging from 46.970 – 150.940.
Background Variables		
Child composite gender	GENDER	Coding remains same as the original. A dummy is created for female
Child composite race	RACE	A composite variables created 1=Black African American, 2=Hispanic race specified, Hispanic race not specified, 3=Asian, 4= White non Hispanic, native Hawaiian, American Indian, more than one race, not ascertained. This research used term European American instead of White. Four dummy variables are created for Black, Hispanic, Asian and European American.
Parent Highest Education	WKPARED	A composite variable from parent questionnaire recorded as 1= high school or below, 2= undergraduate, college or associate degree, 3= graduate, doctoral, or professional.
Poverty level	WKPOV_R	A composite variable with 1=below poverty level and 2=above poverty level. A dummy variable is created for below poverty level.

Family Type	P6HFAMIL	A composite variable from parent questionnaire recorded as 1=two parents, 2=single parents, 3=others. A dummy variable is created for single parent.
SES score	W5SESL	A continuous score ranging from -2.48 to 2.54

Appendix B—Original Survey Questions and Response Scales for the Selected Parent Involvement Variables

Variables	Questions	Response Scales
Since the beginning of this school year have you or the other adults in your household….		
P6ATTENB	Attended an open house or back-to-school night?	1=YES, 2=NO, 7=REFUSED, 9=DON'T KNOW
P6ATTENS	Attended a school or class event, such as a play, sports event, or science fair?	
P6VOLUNT	Volunteered at the school or served on a committee?	
P6FUNDRS	Participated in fundraising for {CHILD}'s school?	
Outside of school hours in the past year, has {CHILD} participated in:		
P6DANCE	Dance lessons?.....	1=YES, 2=NO, 7=REFUSED, 9=DON'T KNOW
P6ARTCRF	Art classes or lessons, for example, painting, drawing, sculpturing?	
P6ORGANZ	Organized performing arts programs, such as children's choirs, dance programs, or theater performances?	
P6CLUB	Organized clubs or recreational programs, like scouts?.....	
P6CHLBOO	About how many children's books does {CHILD} have in your home now, including library books? Please only include books that are for children.	|__|__|__|__| ENTER # OF BOOKS OR REFUSED DON'T KNOW
P6HOMECM	Do you have a home computer that {CHILD} uses?	1=YES, 2=NO,

		7=REFUSED, 9=DON'T KNOW
P6INTACC	Do you have access to the Internet at home?	1=YES, 2=NO, 7=REFUSED, 9=DON'T KNOW
Now I'd like to talk with you about {CHILD}'s activities with family members. In a typical **week**, how often do you or any other family members do the following things with {CHILD}?		
P5SINGSO	Sing songs with {CHILD}?	1= NOT AT ALL, 2 = ONCE OR TWICE, 3 = 3-6 TIMES, OR 4 = EVERY DAY? 7=REFUSED, 9=DON'T KNOW
P5TELLST	Tell stories to {CHILD}?..	
P5HELPAR	Help {CHILD} to do arts and crafts?....	
P5GAMES	Play games or do puzzles with {CHILD}?	
P5NATURE	Talk about nature or do science projects with {CHILD}?	
P5BUILD	Build something or play with construction toys with {CHILD}?	
P5SPORT	Play a sport or exercise together?	
In the past month, that is, since {MONTH} {DAY}, has anyone in your family done the following things with {CHILD}?		
P6LIBRAR	visited a library with {CHILD}?	1=YES, 2=NO, 7=REFUSED, 9=DON'T KNOW
P5MUSEUM	Visited an art gallery, museum, or historical site?	
P5ZOO	Visited a zoo, aquarium, or petting farm?	
P5CONCRT	Gone to a play, concert, or other live show?	