

Measuring Funds of Knowledge: Contributions to Latina/o Students' Academic and Nonacademic Outcomes

CECILIA RIOS-AGUILAR

University of Arizona

Background/Context: *The educational performance of Latina/o students in the United States is becoming a central concern in education policy and reform. In an attempt to explain variation in the academic achievement of Latina/o students, considerable sociological and economic research has emerged. Even though the contributions of these studies are of great benefit, there remain important knowledge gaps.*

Purpose/Objective/Research Question/Focus of Study: *The purpose of this study is to offer an alternative explanation for the variation in Latina/o students' academic and nonacademic outcomes by using an integrated theoretical framework—funds of knowledge—that takes into consideration the many resources, skills, and knowledge inherent in Latino households.*

Research Design: *This study uses quantitative methods to examine the relationship between funds of knowledge and Latina/o students' academic and nonacademic outcomes. A random sample of 212 Latina/o students enrolled in grades K through 12 was selected to examine the association between funds of knowledge and Latina/o students' academic outcomes—reading and academic achievement, and nonacademic outcomes—literacy practices. The data for this study were drawn from the survey responses to the Latino/Hispanic Household Survey and from student achievement data.*

Findings/Results: *Results obtained from the factor analysis suggest the emergence of six theoretically relevant factors: social reciprocity, household frequent activities, parental educational philosophy, parental language acquisition, English literacy-oriented activities, and Spanish literacy-oriented activities. Multiple regression analyses indicated the existence of a significant association between some components of funds of knowledge and students' academic and nonacademic outcomes.*

Conclusions/Recommendations: *This study's findings suggest that Latina/o students and*

families do engage in many different activities that contribute to students' academic and nonacademic outcomes. So, instead of viewing Latino families as needing remediation services and lacking resources to support students' learning, it is critical to build on their life experiences, knowledge, and skills. It is also clear that there is need to refine the approaches and methodologies used to explain and understand the academic and nonacademic outcomes of Latina/o students.

Today, Hispanics¹ represent the largest minority group in the United States. The proportion of school-age Latina/o children is expected to continue growing in the coming years; hence, the influence that Latina/o students will exert on American schools in the K-12 sector is enormous. The educational performance of Latina/o students in the United States is becoming a central concern in education policy and reform. According to recent reports based on standardized tests, Latina/o students are said to be in an educational crisis (Suskind, 2007). For example, only 14% of Latina/o 4th graders reach proficient or advanced levels in reading (Education Trust, 2003). Over 50% of students entering high school in the 35 largest cities in the United States read at a 6th-grade level or below (DeLeon, 2002). In high school, Hispanic youth complete a less rigorous curriculum and, on average, score lower on national assessments and college entrance examinations (Pew Hispanic Center, 2005).

In an attempt to explain academic achievement, including reading achievement and literacy disparities of Latina/o and White students, considerable sociological and economic research has emerged. As a result, a proliferation of theories and conceptualizations have emerged to account for the variations found in academic achievement, including human capital (Schultz, 1961; Becker, 1964), social capital (Bourdieu, 1986; Coleman, 1988), cultural capital and social reproduction (Bourdieu & Passeron, 1977), sequential versus segmented assimilation (Ogbu, 1991; Portes & McLeod, 1996), new cultural capital (Trueba, 2002), bilingualism (García & Cuéllar, 2006), and numerous others. Despite a wealth of research that relies on these theoretical frameworks, empirical findings have been inconsistent. For example, some analyses (e.g., Lee & Croninger, 1994; Padilla, 1996) show that certain forms of social and cultural capital, such as parental involvement, have an effect on Hispanic students' educational outcomes, while other studies (e.g., Battle, 2002; Desimone, 1999; Kingston, 2001; Portes, 2000) have found that these forms of capital do not affect Latina/o students' academic achievement. Perhaps a reason for this rests in the inconsistency in how these constructs have been measured.

Other theoretical frameworks (e.g., funds of knowledge (Moll, Amanti, Neff, & González, 1992)) have been used by educational researchers to better understand the educational experiences of minority students and their families. In particular, the conceptual framework of funds of knowledge (Moll et al., 1992; Vélez-Ibañez & Greenberg, 1992) has successfully documented the existence of a wealth of knowledge, skills, and strategic and cultural resources that Latino families or households contain. Numerous recent studies (e.g., Andrews & Yee, 2006; Ares & Buendía, 2007; Lee, 2001; Mercado, 2005; Olmedo, 1997; Rubinstein-Avila, 2006) have used this theoretical approach to argue that when funds of knowledge are incorporated into curriculum and instruction, they facilitate teachers' recognition and use of family and community resources that are key sources of rigorous academic content (Moll & Greenberg, 1990). Even though the contributions of these studies are of great benefit, there remain important knowledge gaps. For example, there remains a need to study the relationship between funds of knowledge and Latina/o students' academic and nonacademic outcomes. In addition, there is a need to study in more detail the implications for teachers, school administrators, researchers, policymakers, students, and families by analyzing the variation in Latina/o students' academic and nonacademic outcomes from a funds-of-knowledge perspective.

The goal of this study, then, is to contribute to closing the aforementioned knowledge gaps by answering the following research questions: (1) What is the relationship between Latino households' funds of knowledge and Latina/o students' academic outcomes—reading and academic achievement?; (2) What is the relationship between Latino households' funds of knowledge and Latina/o students' nonacademic outcomes—English and Spanish literacy outcomes?; and (3) Are these relationships similar for different subgroups of Latina/o students (i.e., Puerto Rican students compared with Latina/o students born in other Latin American countries)? This study, unlike previous research on funds of knowledge, uses quantitative methods to answer the research questions posed.

The answers to these questions will contribute to the field of education by exploring additional explanations for the variation in the academic and nonacademic outcomes of Hispanic students. Furthermore, this study's findings aim to provide researchers and educators who use this approach to study Latina/o students and families with a survey instrument that may be helpful in capturing households' funds of knowledge. Finally, this study will provide researchers and educators with a comprehensive database of a sample of Latina/o students and households that has potential for future research.

LITERATURE REVIEW

This section reviews the existing literature on Latina/o students' educational attainment, focusing on reading achievement and literacy practices. First, a brief discussion of the educational status of Latinos is offered. Key statistics that describe the current educational status of Latina/o students (currently enrolled in the pre-K and K-12 sector) in the United States are presented. Following that, a definition of literacy and reading achievement is provided. Next, a discussion of the existing educational achievement model is offered. Immediately after, a review of the literature specific to Latina/o students' academic and reading achievement, as well as the literacy practices of students and families, is presented. Finally, a discussion of the limitations of existing studies that investigate Latina/o academic achievement disparities, in general, and reading achievement and literacy, more specifically, is offered.

THE EDUCATIONAL STATUS OF LATINOS IN THE UNITED STATES

When analyzing the educational achievement of Latinos, it is important to distinguish between native-born and foreign-born Latinos. It has been argued that a proportion of foreign-born Latinos come to this country to work rather than to acquire more education (Fry, 2003). Looking at the educational status of the whole Latino population, aggregated figures reveal that it is one of the least educated racial or ethnic groups, with only American Indians faring as poor (Llagas & Snyder, 2003). The following statistics describe briefly the current educational status of Latina/o students (from early childhood to high school): (1) only 39% of Hispanic children (ages three to five) are enrolled in early childhood education programs (NCES, 2004); (2) only 14% of Latino 4th graders reach proficient or advanced levels in reading, while 57% have not been taught to even the basic level (Education Trust, 2003); (3) by the end of high school, Latina/o students have math and reading skills that are virtually the same as those of White middle-schoolers (Education Trust); and (4) for the past three decades, one out of three Hispanics has dropped out of high school, and in many communities along the southern U.S.-Mexico border, the figure is considerably higher.²

READING ACHIEVEMENT AND LITERACY

This study is particularly concerned with literacy and reading achievement (in English) because these two specific educational outcomes have recently been placed at the forefront of most research agendas and pol-

icy debates in education. Some researchers (e.g., Chard & Dickson, 1999; Snow, Burns, & Griffin, 1998) that adopt a view of literacy as a stepwise cognitive process argue that literacy is essential to achievement in every academic subject—and to educational and economic opportunities beyond schooling (August & Shanahan, 2006). Thus, Latina/o students who cannot read and write competently (in English) cannot participate fully in American schools, workplaces, or society. They face limited job opportunities and earning power. Nor are the consequences of low literacy attainment in English limited to individual impoverishment. Inadequate and insufficient reading and writing proficiency in English demotes Latinos to the margins of society, limiting the nation's potential for economic competitiveness, innovation, productivity growth, and quality of life (August & Shanahan; Snow, Barnes, Goodman & Hemphill, 1991).

A different line of inquiry in the literacy debate is the one offered by many educational, anthropological, and sociological researchers (e.g., Coles, 2003; Larson, 1997; Street, 1997), which places emphasis not only on the various skills learned in school (i.e., school-based literacy), but also on the myriad social and cultural factors that affect the process of learning to read. The literacy debate, from this particular perspective, has concentrated its efforts on investigating literacy, understood as a social practice, including the many language-related activities in which students and their families engage (Freebody, Luke & Gilbert, 1991; Larson, 1997; Moll & González, 1994; Street, 1987). Moreover, according to this line of inquiry, there is not one ultimate way of defining literacy (Freebody, Luke & Gilbert, 1991). In fact, it is critical to recognize the existence of multiple literacies (i.e., school, commercial, computer, and the like) and, most importantly, that these literacies are inextricably linked with different cultural, social, political, and economic spheres practiced by different groups of people (Street, 1987).

Unquestionably, there exists much controversy over the meanings and uses of literacy (and of reading achievement). However, it is not the scope of this paper to discuss in detail this issue. What is critical to note, though, is that the terms “literacy” and “reading achievement” are not synonyms, despite the fact that some studies (e.g., Lee & Croninger, 1994; Snow et al., 1991) equate these concepts. Literacy is more than reading; it involves a wide range of cultural practices and activities. Although the skills encompassed by these practices may be related, they are not identical. I define literacy, literacy practices, and literacy outcomes as a set of social practices (Freebody, Luke & Gilbert, 1991; Moll & González, 1994; Street, 1987). Reading and reading achievement are defined in this study as a more refined set of competencies that include

specific skills such as decoding, spelling, and comprehension (Fedderke, de Kadt, & Luiz, 1999; Snow, Burns, & Griffin, 1998; Snow et al. 1991).

THE EDUCATIONAL ACHIEVEMENT LITERATURE

Educational attainment is an important determinant of social position in America's stratified society, as education level is an important predictor of income, health, job quality, and social status (NCES, 2001; Stamps & Bohon, 2006). Thus, over the last 30 years, scholars have researched and debated the causes of low educational achievement in the United States. Primarily, researchers have focused on examining the impact of socioeconomic status, race, and ethnicity on academic achievement (Battle, 2002; Caldas & Bankston, 1997). Generally, almost every study to date has found that socioeconomic status (as measured by parents' occupation, education, family income, and/or a composite of items in the home) is strongly associated with school achievement and many other outcomes, including postsecondary and labor market outcomes (Deil-Amen & López Turley, 2007). Moreover, studies with samples exclusively of Latina/o students and families echo these findings, that family income, parents' involvement in their children's education, and parents' own educational backgrounds are positively related to academic achievement and aspirations of Hispanic adolescents (Rodriguez, 2002).

More recent sociological research (e.g., Kingston, 2001; Lee & Croninger, 1994; Portes, 2000) has focused on the ways in which the sociological constructs of cultural and social capital influence students' academic achievement. Cultural capital refers to the system of attributes, such as language skills and cultural knowledge, that is derived, in part, from one's parents, and that defines an individual's class status (Bourdieu, 1986). Along this line of inquiry, researchers (e.g., Bourdieu & Passeron, 1977; Lareau & Weininger, 2003) have argued that individuals who lack the required cultural capital might: (1) lower their educational expectations and (2) receive fewer benefits for their educational investments. Social capital focuses on social networks and on how these relationships are sustained (Bourdieu, 1986; Coleman, 1988). Researchers (e.g., Desimone, 1999; Lee & Croninger, 1994; Parcel & Dufur, 2001) have found a negative association between lack of access to specific forms of social capital (e.g., relationship with teachers and counselors) and students' academic achievement.

EDUCATIONAL ATTAINMENT AMONG LATINA/O STUDENTS

The reasons for the low educational attainment among Latinos in the

United States have also been widely researched among scholars. Researchers have looked to language ability (Rumberger & Larson, 1998), bilingualism (García & Cuéllar, 2007), native ethnicity (Cheng & Starks, 2002), generational differences (Rumberger, 1995; Wojtkiewicz & Donato, 1995; Zhou, 1997), immigrant status (Bean & Tienda, 1987), and segmented assimilation (Portes & Zhou, 1993) to explain low levels of schooling among Latinos, particularly Latino immigrants. All these factors likely contribute to low educational attainment (Stamps & Bohon, 2006).

In addition, researchers have used constructs such as social and cultural capital to attempt to explain variations in Hispanic students' academic achievement. Indeed, most empirical research that applies social capital as a predictor of academic achievement among Latinos has focused on analyzing the impact of: (1) family configuration/structure (Battle, 2002; Parcel & Dufur, 2001; Pong, 1997; Portes, 2000) and size (Desimone, 1999; Padilla, 1996); (2) parental involvement (Desimone, 1999); (3) closure of parental networks (Lee & Croninger, 1994; Portes, 2000); (4) parental control/monitoring of children and youth's school activities (Battle, 2002); (5) educational resources available to children in the home (Lee & Croninger, 1994; Padilla, 1996); and (6) parental expectations of children's education (Padilla, 1996). It is important to point out that empirical studies which use social capital as a theoretical framework have included in their systematic analyses measures of economic (i.e., family income and wages), human capital (e.g., parental level of education) and in some instances cultural capital (i.e., number of times students visited museums with parents, and number of classes attended outside school in arts, dance, or music). In other words, social capital within Latino families has not been isolated from other important forms of capital that have been found to be predictors of academic failure among minority students.

There is, indeed, lack of agreement regarding the contribution of the distinct forms of social capital measured in the empirical studies discussed here on the academic and reading achievement of Latina/o students. Padilla (1996) found that the educational expectations of parents for their children played a key role in how much education Latino men obtained. Furthermore, Portes (2000) found that parental social networks and parental involvement in school had a statistically significant effect on the academic achievement of second-generation children and youth. However, when statistical controls (i.e., parental socioeconomic status, knowledge of English, and length of U.S. residence) were introduced, the effects of social capital decreased noticeably and became (statistically) insignificant (Portes). Parcel and Dufur (2001), as well as Lee and Croninger (1994), found that both family and school social capital

were associated with reading recognition and reading comprehension scores. However, these studies did not report findings disaggregated by race/ethnicity. Furthermore, these studies found that combinations of family and school social capital could improve or deter student achievement. Actually, Lee and Croninger found that the effect of parent resources (their education and expectations), as well as those for home literacy resources and student-family discussions about school were substantial. In other words, together, measures of poverty, demographic and home support factors accounted for 55% of the variation in reading comprehension (Lee & Croninger). In contrast, Battle (2002) found that social capital, conceptualized as conversations between Hispanic parents and children about school, was statistically insignificant. Also, Desimone (1999) argued that social capital, conceptualized as parents' knowing children's friends, was insignificant for predicting reading achievement among Hispanic students. Furthermore, Desimone found that parent-involvement measures were better predictors for White, Asian, and middle-income students than for Hispanic, Black, and low-income students.

What then can be concluded from the findings previously presented? A reasonable answer to this question is, as argued by Portes (2000), that the attribution of positive effects to social capital on the academic and reading achievement of Latina/o students may be precipitated because the alleged effects of social capital might be well-suited to alternative explanations arising from different theoretical frameworks, such as cultural capital. Another possible explanation for the mixed results evidenced in these empirical studies is related to the original conceptualization of social capital.

An alternative theoretical framework that has been used to explain academic disparities is cultural capital. Cultural capital theory has been mostly utilized to explain why high-income students perform academically better than do low-income students (Kingston, 2001). More specifically, in assessing the impact of cultural capital on student achievement, the cultural capital thesis argues that students who possess the cultural background and dispositions valued in schools will then reach higher levels of academic achievement (Bourdieu & Passeron, 1977).

Similarly to social capital, many variables (e.g., positive attitudes to school, motivation, parental support, frequency of visits to museums, attendance to classes in arts, music, or dance, and linguistic facility (Morrison & Lui, 2000)), have been used as proxies for the cultural capital possessed by students and their families. Kingston (2001) argued that there is no consensus regarding the influence of cultural capital on academic achievement, due to the fact that participating in activities such as visits to museums may well be a sign of students' curiosity rather than his

or her cultural capital endowment. It is important to mention that proponents of cultural capital theory have argued that it is very difficult to measure the intricacy of the social interactions that are involved in the conversion of cultural capital into social privilege (Kingston, 2001). According to Lareau and Weininger (2003), recent studies on cultural capital have used alternative conceptions of cultural capital (and, we would add, different methodologies). These studies include the work of McDonough (1997), Reay (1998), Lareau and Horvat (1999), and Carter (2003).

The existing literature on the contribution of students' culture to explain academic success and failure among Hispanic students has been analyzed in ethnographic studies, which seem more capable of grasping the complexities embedded in the lives of Latina/o students. However, most studies have argued that poor academic achievement of minority students can be attributed to cultural and language differences, such as "communicative style,' 'cognitive style,' 'motivational style,' and nowadays, 'literacy' and 'writing' styles" (Ogbu, 1987, cited in Trueba, 1988, p. 272). Other researchers (e.g., Moll, Amanti, Neff & González, 1992; Trueba, 1988 & 2002) have, instead, focused on analyzing students' and families' practices. Thus, instead of examining cultural and linguistic traits and styles, scholars have documented Latina/o students' (and their families') literacy practices.

LITERACY PRACTICES AMONG LATINA/O STUDENTS

Numerous studies of literacy practices among Latina/o students have emerged in the last decades. Perhaps the most significant ethnographic research on literacy practices among Latino (predominantly Mexican) working-class children is the one offered by Moll, Amanti, Neff, and González (1992), best known as *funds of knowledge*. These researchers studied how households function and how family members acquired and allocated their resources (both material and intellectual) through their networks, social ties, or other arrangements. Among the most critical findings is that the knowledge and skills that these families (and their networks) possess are extensive. Orellana and Reynolds (2008) argue that, similarly to funds of knowledge, a cultural modeling framework is a vehicle that can help teachers connect everyday language practices to academic skills, and to build on the resources of minority students (and families) whose linguistic skills are not recognized by schools. These authors found that students are rarely encouraged to draw from the full repertoire of their linguistic toolkits, much less to use translation or code switching as part of their meaning-making processes. These findings

suggest that, indeed, school literacy activities are structured in ways that ignore bilingual students' strengths.

Another line of inquiry that has received considerable attention is the relationship between bilingualism and the literacy learning opportunities of Latina/o children (Jiménez, García, & Pearson, 1996). Many studies (e.g., Jiménez, et al.; Reese, Gallimore, & Goldenberg, 1999) have chosen to examine bilingualism as a potential strength that might facilitate literacy development, rather than an inherent weakness. Some of these ethnographic studies (e.g., Jiménez, García, & Pearson, 1996) have analyzed the relationship between bilingualism and reading strategies among successful Latina/o students. Findings from this line of research suggest that successful Latina/o readers possess an improved understanding of the relationship between Spanish and English, and that this awareness leads them to enhance their reading comprehension. Furthermore, recent studies (e.g., Jiménez, 2000; Weisskirch & Alatorre Alva, 2005) have examined issues related to students' identity and language. Jiménez's study concluded that the literacy encouraged by the schooling system in the United States might not always be the literacy desired or needed by students from culturally and linguistically diverse communities. In addition, Jiménez found that Latina/o students participated as language brokers. According to Jiménez "the language broker translates but often also interprets and serves as a bridge between individuals who are limited to a monolingual world in either Spanish or English" (p. 738). Thus, this author argued that there is an imperative need to study in detail how literacy is already meaningful to Latina/o students in order to encourage students to fully develop the literacies that they practice and that, traditionally, have not been a part of the school curriculum. Furthermore, Weisskirch and Alatorre Alva argue that although language brokering is a common practice among Latina/o students, the outcomes of having to do so are not well researched.

Recent qualitative studies (e.g., Moreno, 2005, Weisskirch & Alatorre Alva, 2005) that define literacy within a sociocultural context and that have also examined the language-related practices of students and their parents have focused mostly on mother-child interactions, although some studies have started to look at father-child interactions. These studies suggest that Latino parents do engage in many meaningful reading and writing practices. However, parents feel that their involvement in these activities is not valued and rewarded in schools (Moreno, 2002).

While these ethnographic studies shed light on critical issues regarding the literacy practices of Latina/o students and their families, including literacy and reading, and their relationship with instructional and learning processes, unquestionably, these studies have limitations. Perhaps the

most salient one is related to the sample size. The small sample of students that they include in these ethnographic studies may impede the chance of generalizing their findings to other populations (although generalizability is not the goal of ethnographic research).

LIMITATIONS OF EXISTING RESEARCH ON LATINA/O STUDENTS' EDUCATIONAL ATTAINMENT

In spite of the efforts to better understand the variation in Latina/o students' reading and academic achievement, I argue here that neither the traditional socioeconomic approach nor sociological approaches are sufficient. On the one hand, researchers (e.g., Sirin, 2005) have found a very strong correlation between socioeconomic status and student achievement; nevertheless, newer measures and demographic changes over the last years indicate that this relationship has decreased and, most importantly, that it is contingent upon other characteristics, such as school location (Sirin). In addition, I argue that this approach has limited usefulness for understanding how both material and nonmaterial resources embedded in Latina/o families affect Latina/o students' educational outcomes.

On the other hand, sociological approaches shed light on the ways in which families' social and cultural capital affect students' academic achievement. However, the use of these sociological constructs has sometimes resulted in viewing students and families as "lacking." Indeed, existing sociological research (e.g., Battle, 2002; Lee & Croninger, 1994; Portes, 2000) uses proxies for the variables of social and cultural capital (e.g., parent involvement in their children's education, intact families, and cultural knowledge) that fail to capture the wealth of knowledge and resources already existing in Latino households.

In sum, important knowledge gaps and numerous hypotheses remain untested. Two important weaknesses need to be highlighted to better illustrate the current status of research on Latina/o students' educational attainment: (1) lack of an integrated approach and (2) lack of data to study Latinos (e.g., survey instruments that attempt to measure distinct theoretical constructs and students' academic and nonacademic outcomes).

LACK OF AN INTEGRATED APPROACH

Research on Hispanic students and their academic achievement, including studies on literacy and reading achievement, has received more attention in the last decades. These studies have been substantiated with

many theoretical frameworks (e.g., funds of knowledge, new cultural capital, and social capital) and conducted in many different ways, ranging from discussions of national statistics (e.g., Fry, 2003; Llagas & Snyder, 2003), to analyses of particular subgroups (e.g., Glick & White, 2003; Portes, 2000), to more careful study of specific regions (e.g., Lee, 2006), to in-depth examinations of students, teachers, and schools (González, Moll, & Amanti, 2005; Jiménez, García, & Peterson, 1996; Gándara, 1999). Nevertheless, there seems to be a lack of collaboration among different lines of inquiry that hinders the design of comprehensive research that can be meaningful to students, families, teachers, researchers, and policymakers. On the one hand, qualitative studies (e.g., Mercado, 2005; Moll & González, 1994) have attempted to understand the daily practices of Latina/o students and their families, offering exhaustive descriptions of these practices. Undoubtedly, these studies have shed light on the intricacies of the lives of Hispanic children and their families. Nevertheless, most of these ethnographic studies have used convenience samples, thus impeding decision-makers (including school administrators) in using results to design more effective programs targeted to the different subgroups of Hispanic students. On the other hand, quantitative studies (e.g., Glick & White, 2003) have attempted to explain the variation in academic achievement, offering a series of coefficients and predictors that can inform the design of educational policies. However, these studies are constrained by the variables included in large-scale datasets. Consequently, they may not be able to capture the intricacies embedded in the lived experiences of Latina/o students.

LACK OF DATA TO STUDY LATINA/O STUDENTS AND THEIR FAMILIES

There is now basic data on Latinos at a national level on attainment. For example, the NCES has collected data on Latinos (e.g., Status and Trends in the Education of Hispanics) regarding enrollment, academic achievement, and other important issues (e.g., adult literacy and early childhood). Also, some studies (e.g., Glick & White, 2003; Portes, 1998) have begun to describe some of the differences among and within the various Hispanic subgroups using large-scale datasets, such as the National Educational Longitudinal Study [NELS:88], the National Longitudinal Survey of Youth [NLSY79], the Children of Immigrants Longitudinal Study [CILS], and other nationally representative samples of Latinos collected by the Pew Hispanic Center. Nevertheless, the lack of data that I refer to is the one needed to create more comprehensive measures of many constructs (e.g., funds of knowledge, literacy, and social and cul-

tural capital) that can help researchers explain the variation in Latino students' academic and nonacademic outcomes. Many researchers who are interested in understanding the academic achievement of Latina/o students know that there are subtleties and complexities embedded in the lives of Latino families that are not captured by large-scale surveys, but that may exert a critical influence. By no means do I want to suggest that the large-scale datasets should not be used. To the contrary, those datasets contain valuable information that has been collected following rigorous statistical procedures to ensure the validity and reliability of the data. My claim is that there is need to develop new instruments and measures that are consistent with the context in which Latino children and families live.

THEORETICAL FRAMEWORK

FUNDS OF KNOWLEDGE: ORIGINS AND THE STUDY OF HOUSEHOLD PRACTICES

The concept of funds of knowledge was first introduced by Vélez-Ibañez and Greenberg (1992) when attempting to understand how U.S.-Mexican children constructed their cultural identity. Inspired by Eric Wolf's (1984) work, Vélez-Ibañez and Greenberg, explain what they mean by funds of knowledge. According to these researchers, one of the easiest ways to understand this concept is to think about the multiple funds that households must simultaneously acquire, dispose of, and manage, in order to maintain the household and individual well-being: social funds (i.e., kinship and friendship), caloric funds (i.e., nutrition), and funds of rent (i.e., housing). Furthermore, Vélez-Ibañez and Greenberg argue that embedded in these funds are broader sets of practices and patterns of interaction that require the use of specific knowledge and skills. Therefore, funds of knowledge can be thought of as an array of knowledge and skills that are of strategic importance to households. For example, Latino households have accumulated a wide breadth of knowledge in areas such as mining and metallurgy, ranching and animal husbandry, and transborder transactions (González, Moll, & Amanti, 2005).

By using a systemic approach to households, Vélez-Ibañez and Greenberg (1992) studied how these funds of knowledge were formed, learned, transmitted, and socially distributed among Mexican-origin households living near the U.S.-Mexico border. They found that individuals within these households had gained and continued to gain funds (or skills and knowledge) through their (1) participation in the labor market(s), (2) interaction with other households (both in the United

States and in Mexico), (3) daily and/or frequent activities, and (4) educational experiences and language use. Vélez-Ibañez and Greenberg claim that if educators and policymakers aspire to help Latina/o students succeed in school, they must recognize households' funds of knowledge. In other words, what they suggest is a reconsideration of the cultural basis of instruction and pedagogy, as well as of the evaluation and assessment processes that are currently in place. They argue that education reform should capitalize on household and community resources if it is to succeed.

DEFINITION OF FUNDS OF KNOWLEDGE

Moll, Amanti, Neff, and González (1992) used this same approach to study in more detail the literacy practices of Latina/o (predominantly Mexican) working-class children. They argue that the literacy practices in which Latino households engage are constantly formed and transformed within sociohistorical circumstances (González, Moll, & Amanti, 2005). In other words, the practices in which Latino households engage are the result of their lived experiences, including their social interactions, their participation in multiple job markets, and their varied language-related activities. The concept of funds of knowledge is defined by Moll and González (1994) as:

Those historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well-being. As households interact within circles of kinship and friendship, children are "participant-observers" of the exchange of goods, services, and symbolic capital which are part of each household's functioning. (p. 443)

It is important to note that there are two critical components embedded in this definition. First, funds of knowledge are comprised of all those skills and knowledge that household members have acquired through their involvement in many activities, such as labor markets and diverse social interactions. Second, members of a household, including children and youth, have access to these various funds of knowledge by engaging in household activities, and by observing how members within their household interact with members of other households. More specifically, the household works as a hub of activities, resources, and patterns of interaction that are available to children and youth and that, I argue, may be directly and indirectly associated with children's learning in general, and specifically with academic and reading achievement and literacy outcomes.

Funds of knowledge is, undoubtedly, a concept that involves not only the type of knowledge and skills available to children, but also the dynamism entrenched in households' social, cultural, and linguistic interactions, particularly of Latino households. However, the notion of funds of knowledge appears to share some commonalities with other notions of capital, such as human, social, linguistic, cultural, and symbolic capital. These concepts have been used as theoretical frameworks to explain academic achievement variation among students, including Hispanics. A clear example of this is the use of "symbolic" capital in Moll and González's (1994) definition of funds of knowledge. Perhaps they recognize the fact that the hub of activities, resources, and patterns of interaction is related in some way to specific forms of capital. While it would be desirable to explore in detail the relationship between funds of knowledge and other forms of capital, it is not within the scope of this paper. This study concentrates on examining the relationship between funds of knowledge and Latina/o students' academic and reading achievement and literacy outcomes.

RESEARCH ON FUNDS OF KNOWLEDGE

The concept of funds of knowledge presents a theoretical framework for challenging the "deficit" models of Latino communities that have characterized much educational theorizing (Olmedo, 1997). As argued by Moll, Amanti, Neff and González (1992), the concept of funds of knowledge is based on the premise that people are competent and have knowledge, and their life experiences have given them that knowledge. Moreover, these authors claim that the documentation of the competence and knowledge inherent in Latina/o families leads to many possibilities for positive pedagogical actions. In other words, this theoretical framework has been mostly used by many researchers (e.g., Andrews & Yee, 2006; Ares & Buendía, 2007; Lee, 2001; Mercado, 2005; Olmedo, 1997; Rubinstein-Avila, 2006) to help teachers link curriculum to students' lives. For example, Street (2005) used a funds of knowledge approach to explain why minority families and children often feel alienated from schools. Similarly, Upadhyay (2006) studied the meaning of students' funds of knowledge to an elementary science teacher working in an urban school. Another example of an application of the concept of funds of knowledge is a study by Rubinstein-Avila (2006), which urged teachers and educational leaders to incorporate into the curriculum students' funds of knowledge, to effectively help Latina/o students succeed academically.

As previously argued, the importance of the funds of knowledge

framework for pedagogical action is very well documented in the literature. However, there has been no previous attempt to examine (from a quantitative perspective) the relationship between funds of knowledge and students' educational outcomes. For this reason, this study moves forward the research on funds of knowledge by designing a survey instrument that attempts to measure the various components embedded in the concept of funds of knowledge (i.e., households' labor history, households' social interactions, households' educational experiences and language use, and households' frequent activities).

METHODOLOGY

DATA

The data for this study were drawn from two main sources: (1) the responses to the *Latino/Hispanic Household Survey* (LHHS) and (2) the Latina/o students' test scores (i.e., Stanford achievement [SA], English Language Arts [ELA], and grade point average [GPA]) that school district PRSD provided to the researcher.³ The LHHS includes a set of questions in five broad categories that were used as proxies for funds of knowledge, and a set of questions in two broad categories that were used as proxies for English and Spanish literacy outcomes (see Appendix A for details on the data collected by the survey instrument).

SAMPLING

The random sample of this study consisted of 1,100 Latina/o students currently enrolled in a school district—PRSD—located in the U.S. Northeast in grades K through 12. PRSD currently enrolls 36,000 students in pre-K through grade 12. The ethnic makeup of the student population is 64% African-American, 20% Hispanic, 14% White, and 2% Native American, Asian, and other minorities. Like large urban districts across the country, PRSD faces a number of challenges that impact student achievement. Among these is pervasive poverty. Eighty percent of the district's students are eligible for free or reduced-price lunch, based on family income.

The survey (both an English and Spanish version) was initially mailed to parents/caregivers of Latina/o students currently enrolled in PRSD on September 28, 2006. Three mail reminders were sent to non-respondents to minimize nonresponse bias. In total, 212 parents or caregivers returned the mailed questionnaire, for a response rate of 19% (including both usable and non-usable surveys). This response rate, while seem-

ingly low compared to others reported in large-scale studies, is tolerable, considering the fact that the survey was sent to a group of respondents that were known to have low response rates—parents and minorities. Indeed, as argued by Kitson et al., (1982) family survey research suffers from very low response rates (ranging to as low as 11.5%). Other authors (e.g., Vigdor, 2004) have also argued that mail response rates of Hispanics and African Americans are significantly lower than those of Whites and Asians. Vigdor found that the mail response rates of minority groups were associated with an individual's perceived identification with his/her community. For example, Vigdor studied how certain demographic characteristics of other members of the community, such as socioeconomic status and age, affected mail response rates. He found that communities with more educated populations tended to have higher response rates. Also, he found that 25- to 44-year-old individuals had significantly lower response rates than younger individuals (18 to 25 years old). These findings suggest that response rates of minority groups are indeed associated with an individual's perceived level of similarity within a community along multiple dimensions. In order to avoid relatively low response rates among Latino families, it would be desirable to explore alternative modes of data collection, such as face-to-face interviews conducted at the home (e.g., Portes & Rumbaut, 2001).

Now, it is important to mention that the attempt to measure the selected sample cases did not achieve full success, as previously established. Thus, this study suffers from some level of nonresponse error. Nonresponse error arises when the values of statistics computed based only on respondent data differ from those based on the entire sample data (Groves et al., 2004). Thus, the generalizability of this study's findings is compromised by the relatively low response rate.

ASSESSMENT OF THE REPRESENTATIVENESS OF THE SAMPLE

The issue of sample representativeness is critical in research. Even probability samples, just as the one selected in this study, may not be representative, because self-selection bias, especially with regard to non-reachable subjects and refusals, may distort the statistical findings from being unbiased estimates of the targeted population's values (Braver & Bay, 1992). In general, sample statistics from an obtained sample should be only negligibly biased estimates of its population values if either of two properties hold: (1) if the proportion of nonrespondents is very small or (2) if the distribution of values on variables of interest for respondents is very close to the distribution on these variables for the entire targeted sample (Kalton, 1983). As explained earlier, Kitson et al. (1982) found that the

proportion of nonrespondents is typically quite large in most family research using probability samples. Consequently, researchers can only assume negligible bias as long as property (2) above holds (Braver & Bay). Indeed, many approaches to assess the representativeness of samples exist. For example, Kitson et al.'s proposed solution to the problem was for researchers to provide more standard, detailed descriptions of their samples so that readers could critically assess the generalizability of the findings reported. Braver and Bay recommended comparing respondents and nonrespondents on the variables of interest and on "correlated characteristics" (p. 926). While the responses on the variables actually of interest are, in fact, typically unavailable for the nonrespondents, other variables, variables that are characteristics plausibly correlated to the responses of interest, such as demographic indices, are more frequently available, even for nonrespondents.

In order to evaluate the representativeness of the sample obtained in this study, Braver and Bay's (1992) recommendations were followed. First, a random sample of 200 students whose parents/caregivers did not respond to the survey was created. After selecting this random sample, an independent samples t-test of means was used to determine whether or not the mean student achievement of these students significantly differed from that of students whose parents/caregivers answered the survey. No significant difference between the means of the two groups was found ($t = 1.26, p > .05$). Second, 35 randomly selected non-respondents were contacted via telephone to gather information on other demographic characteristics of interest: (1) gender, (2) country of origin, and (3) highest level of education completed. Only 28 nonrespondents were reached by phone. The results revealed that the demographic characteristics of these randomly selected nonrespondents were similar to those of respondents included in this study. Third, census data (U.S. Census 2000) was obtained to compare respondents and nonrespondents—Latinos living in the same city and state in which the PRSD was located—in two relevant demographic characteristics (i.e., educational and occupational attainment). The percentage of college graduates for respondents to the survey was 10%, compared to 12% and 10% for nonrespondents living in the same city and state respectively (Bose, 2006). Another important comparison was to country of birth. According to the U.S. Census, 17% of respondents (Puerto Ricans, not U.S.-born) have a college degree, while for nonrespondents (Puerto Ricans, not U.S.-born) the percentages are 21% and 11% respectively (Bose). Finally, occupational attainment was compared. Twelve percent of respondents held managerial and/or professional jobs, compared to 16% and 11% of nonrespondents (Bose). Since no significant differences in the percentages detailed earlier were

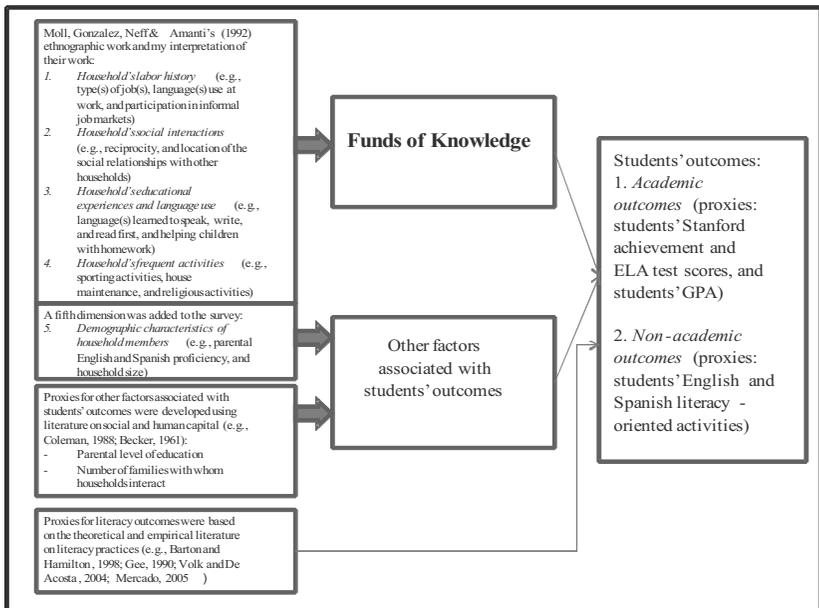
detected, it can be concluded that, while some selection bias was present, it was minor.

Another important potential bias to take into consideration in survey research is related to missing data, which is virtually inevitable in this particular method of collecting data. In this particular study, two specific methods were used to deal with the potential bias generated by missing data: (1) data deletion and (2) mean substitution. The extent of the use of each of these methods varied according to the variable. A discussion of how many cases were either deleted or substituted is offered in subsequent sections of this study.

SURVEY INSTRUMENT

To answer the research questions, key constructs were measured in the survey instrument: the components of funds of knowledge (i.e., household’s labor history, household’s social interactions, household’s educational experiences and language use, and household’s frequent activities) and the proxies for the English and Spanish literacy outcome variables. Figure 1 conveys the rationale behind the design of the LHHS. In addition, this figure shows the conceptual model of this study.

Figure 1. Logic model for survey design



The design of the survey instrument was informed by (1) my own interpretation of Moll and González's (1994) qualitative research on funds of knowledge; (2) Moll and González's conceptualization of funds of knowledge; and (3) previous empirical studies on human capital (Becker, 1964; Schultz, 1961), social capital (Bourdieu, 1986; Portes, 1998), cultural capital (Bourdieu), linguistic capital (Bourdieu & Passeron, 1977; Kingston, 2001), and literacy practices (Jiménez, García, & Pearson, 1996; Reese, Gallimore, & Goldenberg, 1999; Moll & González, 1994; see Appendix A for details on the data collected by the survey instrument). The survey instrument was pretested in a focus group discussion with Latina/o parents/caregivers. These parents were similar to those targeted in this study, sharing some of the demographic characteristics of interest here. For instance, some of them were born in the United States, while others were born in Puerto Rico. Furthermore, all these parents had children attending schools in the PRSD in K-12 grades. The final instrument was four pages in length and required 15 to 20 minutes to complete.

ASSESSMENT OF THE VALIDITY AND RELIABILITY OF THE SURVEY INSTRUMENT

A principal component and factor analysis with varimax rotation was conducted in an effort to assess the validity of the survey instrument proposed in this study.⁴ While thirteen factors explained 50% of the variation, and 28 factors had eigenvalues greater than 1, a more parsimonious solution with seven factors was found to be consistent with the theoretical framework of this study.

The following guidelines were employed in making the final decisions about creating scales and including items in each subscale. Only items with loadings of 0.40 or higher in the exploratory factor analyses were considered for inclusion in a factor. It is important to note that the significance of factor loadings depends on the sample size. According to Stevens (1992) and Field (2000), with a sample size of 200 a loading of an absolute value of 0.36 should be considered to be important.⁵ Thus, the criteria used in this study meets what other researchers (e.g., Stevens, 1992; Field, 2000) argue should be taken into consideration when conducting a factor analysis. Finally, factors 3 and 4 were combined to create one subscale, namely the social reciprocity subscale. The reason for doing so was because some of its items were loading on both factors. For example, the survey item providing house maintenance support cross-loaded simultaneously with both factors. While, there is no consensus on strategies for items that cross-load with two or more factors, combining these factors into one seemed a reasonable strategy in this study.

Researchers (e.g., Jaeger, 1993) argue that when factors have relatively high correlations, as it is the case for factors 3 and 4 in this study, they can be combined into one factor. Another reason for combining these factors into one is that the theoretical framework of funds of knowledge attempts to capture the reciprocity embedded in the social interactions among Latino households.

To summarize, six theoretically relevant subscales emerged from the factor analysis after combining two factors into one: (1) Spanish literacy-oriented activities, (2) English literacy-oriented activities, (3) social reciprocity (i.e., social support received and provided among Latino households), (4) household's frequent activities, (5) language acquisition, and (6) parent's educational philosophy (see Appendix B for details on the loadings of each factor). It is important to note that correlations among the factors found were moderate to low. Moderate and low correlations among factors is desirable according to researchers (e.g., Meyers, Gamst, & Guarino, 2006) because the goal of factor analysis is to find a set of factors that are independent of one another. In addition to the assessment of validity, an additional statistical analysis was conducted to measure the reliability of each subscale proposed. Cronbach's alpha is the most common test of internal consistency. Moreover, it assesses how well a set of items (or variables) measures a single unidimensional construct (Jaeger, 1993). Murphy and Davidshofer (2001) argue that reliability coefficient estimates of below 0.60 are usually regarded as unacceptably low. The subscales proposed in this study show satisfactory reliability coefficient estimates. Table 1 summarizes the reliability analyses conducted for each of the subscales created.

Table 1. Results of Reliability Analysis

Subscale		Cronbach's alpha (α)
English Literacy-oriented Activities	[EL]	.92
Spanish Literacy-oriented Activities	[SL]	.95
Social Reciprocity	[REC]	.66
Frequent Activities	[FACT]	.80
Language Acquisition	[LAQ]	.79
Parental Educational Philosophy	[EPH]	.83

MEASURES

DEPENDENT VARIABLES

Academic outcomes: students' academic and reading achievement

The PRSD provided me with recent data of Hispanic student achievement—academic years 2005–2006 and 2006–2007. The proxies of

academic and reading achievement used in this study are SA and ELA test scores, and GPA. It is important to mention that the student achievement data provided by the PRSD is in different scale scores. While the ELA and Stanford achievement test scores range from 1 to 4, the GPA ranges from 0 to 4.5. Having different scale ranges would complicate the statistical analyses and interpretation of the results. For this reason, the three measures of reading and academic achievement—ELA test scores, Stanford test scores, and GPA—were combined to have one single objective measure of students' academic outcomes. Standardized scores were used to merge the three measures into one.⁵

Nonacademic outcomes: English and Spanish literacy-oriented activities

The dependent variables English literacy-oriented activities ($\alpha = .92$) and Spanish literacy-oriented activities ($\alpha = .95$) are summative scales that resulted from the factor analysis previously discussed. All the items included in these scales asked respondents to determine the type and frequency of the English and Spanish literacy-related activities they practiced with their children (e.g., singing songs, reading books, writing, and discussing TV shows). Responses to each item ranged from 1 to 5, where, 1 = almost never, 2 = at least once a year, 3 = at least once a month, 4 = at least once a week, and 5 = almost daily.⁶

INDEPENDENT VARIABLES

Household's social reciprocity

The social reciprocity subscale attempts to provide a measure that captures the reciprocity embedded in the social relationships among Latino households. Each item asked respondents how frequently they received and provided support to and from other Latino families with whom they interacted on a regular basis (e.g., childcare, organizing social activities, translation services, and financial support). Responses to each item ranged from 1 to 5, where, 1 = almost never, 2 = at least once a year, 3 = at least once a month, 4 = at least once a week, and 5 = almost daily. Respondents could also answer that they neither received nor provided a particular type of support. In that case, responses were coded as 0. The range for this summative scale is from 0 to 90.⁷ Normal probability plots were used to examine the variable, and it showed a distribution that was negatively skewed. For this reason, a transformation of this variable (i.e., the natural logarithm of the reciprocity scale) was used in the analyses, resulting in a range from 0 to 1.9 for this transformed summative scale.

Household's frequent activities

A set of questions focused on the type and frequency of the activities, including sporting, cultural, and religious activities in which parents and children engage together. Responses to each item ranged from 1 to 5, where 1 = almost never, 2 = at least once a year, 3 = at least once a month, 4 = at least once a week, and 5 = almost daily. Respondents could also answer that they did not engage in a particular activity. In that case, responses were coded as 0, thus making 0 a plausible value in the subscale. The range of this summative scale was 0 to 50.⁸

Parental language acquisition

A set of dummy variables was created for the factor of parental language acquisition that emerged from the factor analysis. A summative scale was not constructed for this factor because the survey questions were categorical. Researchers (e.g., Dillon, Madden, & Mulani, 1983) claim that creating a scale with categorical data requires complex statistical methods (i.e., latent structure models) that were beyond the scope of this study. For this reason, I only created a set of dummy variables that were included in the regression analyses presented in the results section.

Parents' educational philosophy

Each item on the parental educational philosophy scale asked respondents how much they agreed or disagreed with several statements, such as "The education that my child gets will help him/her get a better job." The response options ranged from 1 = strongly disagree to 4 = strongly agree. Given these possible values, the range of this summative scale was 3 to 12.⁹

STATISTICAL CONTROLS

Four variables were used as statistical controls in the regression analyses: 1) parental level of education, 2) whether or not parents were born in the United States, 3) whether or not the student was born in the United States, and 4) whether or not the student was born in Puerto Rico. Two of these variables (i.e., student born in the United States and student born in Puerto Rico) were recoded and entered as dummy variables in the regression analyses. No additional dummy variables were created for other subgroups of Latina/o students because of small sample sizes.

DATA ANALYSIS

To begin, descriptive analyses were conducted to examine the distribution of each of the dependent and independent variables. Next, simple correlations were obtained to examine the strength of the relationships between all the variables of interest in this study. Finally, a series of ordinary least square (OLS) regression analyses were conducted to examine the relationship between funds of knowledge and students' outcomes (i.e., students' academic and reading achievement, and English and Spanish literacy). Regression analyses were useful in determining how much of the variance in the outcome measures was attributable to the constructs of interest in this study (i.e., funds of knowledge). Regression analyses also had the capability of predicting students' academic and reading achievement and literacy outcomes, given the estimated coefficients.

LIMITATIONS

BIASES

Selection bias is a distortion of evidence or data that arises from the way that the data are collected. Sample selection may threaten both internal and external validity (Winship & Mare, 1992). For example, when using OLS to estimate a regression model where large values of the dependent variable are underrepresented in a sample, the estimates of slope coefficients may be biased. As explained earlier in this paper, there was some bias present in this study. Thus, findings of this study may not be generalizable to the population of interest.

Another limitation of this research was the bias that resulted from social desirability. Social desirability is the tendency on the part of respondents to give responses that they think are socially and culturally accepted responses (Podsakoff et al., 2003). This tendency can be problematic because it can potentially bias the answers of respondents (i.e., change the mean levels of the response), but it may also disguise the true relationships between two or more variables (Podsakoff et al.). In this study, parents/caregivers were asked to self-report their experiences, perceptions, and participation in several activities (e.g., labor market and educational experiences and frequent activities in which they engaged with their children). Thus, it may be possible that regression coefficients either over- or under-estimated the "true" relationships between funds of knowledge and the reading achievement and literacy outcomes of

Latina/o students. Consequently, interpretations and discussion of findings need to take into consideration this type of bias.

ANALYSES OF DIFFERENT SUBGROUPS OF LATINA/O STUDENTS

This study may also be limited by the analyses of different subgroups of Latina/o students. The sample sizes of the different subgroups of Latina/o students available in this study were very small, thus impeding the analyses of the differences among the various subgroups. Consequently, the results of the study were limited to comparisons between Latina/o students who were born in Puerto Rico versus those who were born in any other Latin American countries.

CROSS-SECTIONAL DATA ANALYSIS

In this particular study, cross-sectional data was used to capture behavior, attitudes, practices, skills, and knowledge of Latina/o students and their families at one moment in time. While findings of this study are important, they were limited by the dimension of time used in cross-data analysis.

CAUSALITY

Another possible drawback was the type of inferences that could be made. This study will not be able to make causation arguments due to the nature of the data collected and the statistical procedures used to analyze the data (i.e., regression analysis). It is very likely that other factors, such as school and classroom characteristics, which were not the focus of this study, may also have affected Latina/o students' reading and academic achievement and their English and Spanish literacy outcomes. Thus, findings from this study need to be interpreted carefully.

FINDINGS

DESCRIPTIVE ANALYSIS

DEMOGRAPHIC INFORMATION OF RESPONDENTS

Eighty-eight percent of the respondents were females. Forty-three percent of the respondents were born in the United States, while 57% were born in other countries. Of the respondents who were born *outside* the

United States, 77% were born in Puerto Rico, 9% in the Dominican Republic, 5% in Cuba, and 9% in other Latin American countries (e.g., Mexico and Colombia). With respect to the highest level of education attained by the respondents, the distribution was as follows: 6% completed elementary school, 27% completed middle school, 33% finished high school, 22% attended some college, 10% had a bachelor's degree, and 2% had a graduate degree. The educational attainment distribution was similar to the Latinos living in the state where the sample was drawn. According to the U.S. Census data for the year 2000, 23% of Latinos in the state had a high school diploma, 15% had some college, and 7% had a college degree.

DEMOGRAPHIC INFORMATION OF STUDENTS

The only demographic information collected in the survey was the students' country of origin. Seventy percent of the Latina/o students included in the sample were born in the United States. These percentages reflect the demographic trends of Latinos in the United States, which show that the majority of Latina/o school-age children are second-generation students (Pew Hispanic Center, 2005).¹⁰ Of the students who were born *outside* the United States, 23% were born in Puerto Rico, 3% in the Dominican Republic, 2% in Cuba, and the rest in other Latin American countries, including Mexico and Colombia.

DESCRIPTIVE STATISTICS OF STUDY VARIABLES

Table 2 provides the descriptive statistics for the dependent and independent variables used in this study. As shown in Table 2, the average Latina/o students' reading and academic achievement score was 0 ($SD = 1$). It is important to remember that the scores were standardized, so the values for the mean and the standard deviation for this variable were as expected. The range of possible values for the variables English and Spanish literacy-oriented activities was from 0 to 45, with a mean of 24 for both outcome measures. These means were slightly above the average, which means that students were practicing literacy-related activities in English and in Spanish periodically (at least once a month). The social reciprocity scale ranged from zero to 1.90. The mean value for the social reciprocity scale was 1.24 ($SD = .36$). This means that households, on average, exchanged services and support with other households very frequently (at least once a month). The mean value for the variable parental educational philosophy was 11.11 ($SD = 1.24$). The range of possible values for this subscale was from 4 to 16. This means that the Latino parents,

on average, valued education highly. The range of possible values for the frequent activities subscale was from zero to 50. The mean value for this subscale was 31.37 ($SD = 9.28$). This value was higher than 25, which means that parents and children were engaging in many different activities at least once a week. Finally, the data show that the majority of respondents learned to speak Spanish first (64%). Also, most respondents reported that they learned to write and to read first in Spanish (59% and 58%, respectively).

Table 2. Descriptive Statistics of Study Variables

VARIABLE	MEAN	SD	MIN	MAX
<i>Dependent Variables</i>				
Academic Achievement [ACH]	0.00	1.00	-2.38	2.59
English Literacy-oriented Activities [EL]	24.20	13.21	0.00	45.00
Spanish Literacy-oriented Activities [SL]	23.86	14.33	0.00	45.00
<i>Independent Variables</i>				
Social Reciprocity [REC]	1.24	0.36	0.00	1.90
Frequent Activities [FACT]	31.37	9.28	0.00	55.00
Parental Educational Philosophy [EPH]	11.11	1.24	0.00	16.00
Speak English First [SEF]	0.18	0.38	0.00	1.00
Speak Spanish First [SSF]	0.64	0.47	0.00	1.00
Write English First [WEF]	0.32	0.47	0.00	1.00
Write Spanish First [WSF]	0.58	0.49	0.00	1.00
Read English First [REF]	0.31	0.46	0.00	1.00
Read Spanish First [RSF]	0.58	0.49	0.00	1.00
<i>Statistical Controls</i>				
Prior Academic Achievement [PRACH]	0.00	1.00	-1.57	1.21
Parental Level of Education [PED]	3.10	1.16	1.00	6.00
Parent Born in the U.S. [PUS]	0.43	.49	0.00	1.00
Student Born in the U.S. [SUS]	0.69	.42	0.00	1.00
Student Born in Puerto Rico [SPR]	0.23	.46	0.00	1.00

CORRELATIONS AMONG STUDY VARIABLES

Correlations were examined to understand the relationships among all study variables (see Table 3). It is not surprising that the correlation between prior academic achievement and reading and academic achievement was quite strong ($r > .5$). It was also not unexpected that the relationship between reading and academic achievement and parental level

Table 3. Bivariate Correlations of Study Variables

SCALE	PRACH	ACH	EL	SL	REC	EPH	FACT	LAQ	SEF	SSF	WEF	WSF	REF	RSF	PED	PUS	SUS	SPR
PRACH	1																	
ACH	.517*	1																
EL	.005	-.028	1															
SL	-.103	-.125	.141*	1														
REC	-.087	-.003	.252**	.277**	1													
EPH	-.06	.072	.162*	.069	.066	1												
FACT	-.051	-.111	.407**	.455**	.235**	.075	1											
LAQ	-.235**	-.120	-.075	.262**	.021	.119	.091	1										
SEF	.162*	.035	.206**	-.229**	.016	-.054	-.029	-.761**	1									
SSF	.019	.051	-.391**	.278**	-.019	.058	-.020	.321**	-.644**	1								
WEF	.143	.046	.289**	-.324**	-.040	-.172*	-.030	-.764**	.654**	-.708**	1							
WSF	-.056	.043	-.408**	.288**	-.011	.091	-.013	.388**	-.569**	.862**	-.834**	1						
REF	.156	.034	.295**	-.289**	.019	-.100	-.028	-.800**	.670**	-.683**	.928**	-.790**	1					
RSF	-.058	.019	-.367**	.278**	-.021	.095	-.012	.410**	-.569**	.839**	-.834**	.956**	-.814**	1				
PED	.158*	.289**	.224**	-.153*	.090	.188*	.084	-.014	.081	-.151*	.116	-.180*	.106	-.128	1			
PUS	.032	-.007	.393**	-.218**	-.039	-.065	-.018	-.326**	.470**	-.657**	.626**	-.687**	.581**	-.686**	.159*	1		
SUS	.267*	.101	.337**	-.272**	-.020	-.090	.061	-.213**	.287**	-.377**	.400**	-.424**	.392**	-.428**	.209**	.421**	1	
SPR	-.280*	-.132	-.241**	.288**	-.015	.015	-.022	.210**	-.220**	.323**	-.355**	.358**	-.348**	.361**	-.246**	-.343**	-.838**	1

** Correlation significant at a .01 level; * Correlation significant at a .05 level

PRACH = prior academic achievement; ACH = academic achievement; EL = English literacy-oriented activities; SL = Spanish literacy-oriented activities; REC = social reciprocity; EPH = parental educational philosophy; FACT = frequent activities; SEF = speaking English first; SSF = speak Spanish first; WEF = writing English first; WSF = writing Spanish first; REF = reading English first; RSF = reading Spanish first; PED = parental level of education; PUS = parent born in the United States; SUS = student born in the United States; SPR = student born in Puerto Rico.

of education was strong ($r = .28$). These relationships are similar to what the extensive literature on family background and educational development has found. The correlations between English and Spanish literacy-oriented activities and the components of funds of knowledge (i.e., parental language acquisition, social reciprocity, frequent activities, and parental educational philosophy) were weak to moderate. Finally, it is important to mention that the correlations discussed here were helpful in examining the strength of the relationship to the outcome variables, and thus, determining the order of entry of the variables in the regression analyses.

REGRESSION ANALYSES

Factors and scale scores derived from the preceding analyses and other survey items served as independent variables in the regression analyses of students' outcomes. Five different models were estimated (see Tables 4, 5, and 6) for each of the outcome variables: (1) reading and academic achievement, (2) English literacy-oriented activities, and (3) Spanish literacy-oriented activities. Prior academic achievement, parental level of education, parent born in the United States, student born in the United States, and student born in Puerto Rico were entered first. This model was labeled as *baseline model*. In subsequent models, (i.e., Models II, III, IV, and V) distinct blocks of variables were entered into the regressions. Correlation analyses helped to determine the order of entry of variables. This particular strategy was chosen because the theoretical framework of funds of knowledge did *not* suggest any particular order of entry of the variables. Furthermore, the models constructed in this study did not posit any particular causal ordering among the independent variables. The focus of the analyses was upon the strength and form of the relationships between students' outcomes and a set of proxies for funds of knowledge in the presence of other statistical controls. Comparing the R-square and coefficients of the baseline model with those of the subsequent ones enabled this researcher to examine how different components of funds of knowledge related to students' outcomes in the presence of additional sets. Comparison of R-square levels showed the degree to which the addition of sets of variables increases the variation explained in students' outcomes. Changes in coefficient values of sets of variables after the addition of another set reflected the covariation between these variables in relationship to students' outcomes. For example, if a coefficient value for social reciprocity were reduced with the addition of the frequent activities variable, this would suggest that the relationship between social reciprocity and students' outcomes reflected,

in some part, an association between social reciprocity and engaging in different household activities.

RELATIONSHIP BETWEEN FUNDS OF KNOWLEDGE AND STUDENTS' READING AND ACADEMIC ACHIEVEMENT

In the first model, the baseline model, prior academic achievement, and all the statistical controls were introduced. Prior academic achievement and parental level of education were significant predictors of students' reading and academic achievement. The signs of these relationships were as expected. The baseline model explained 33% of the variation in students' outcomes (see Table 4). The second regression model (i.e., Model II) added the dummy variables related to parental language acquisition. None of the parental language acquisition variables were found to be significant predictors of students' reading and academic achievement. The significant predictors of students' reading and academic achievement were the same as in the baseline model: prior academic achievement and parental level of education. In fact, the addition of the parental language acquisition variables reduced the proportion of variation (from 33% to 30%) in students' reading and academic achievement. That is explained in the second model compared to the first model, where prior academic achievement and the statistical controls were entered. The third regression model (i.e., Model III) added the frequent activities subscale. The significant predictors of students' reading and academic achievement were the same as in the baseline model. Thus, adding this variable did not contribute to explaining additional variation in students' reading and academic achievement. The fourth model (i.e., Model IV) added the parental educational philosophy subscale. Adding this factor increased by a very small margin (1%) the proportion of variation explained in students' reading and academic achievement. Finally, the fifth model (i.e., Model V) added the social reciprocity subscale. The significant predictors remained the same, and the proportion of variation in students' explained educational outcomes was reduced by 1%.¹¹

RELATIONSHIP BETWEEN FUNDS OF KNOWLEDGE AND STUDENTS' ENGLISH LITERACY-ORIENTED ACTIVITIES

In the first model, the baseline model, the baseline model, prior academic achievement, and all the statistical controls were introduced. Parents being born in the United States and students being born in the United States were significant predictors of students' English literacy-oriented activities. The signs of these relationships were as expected: Students

Table 4. Summary of Multiple Regression of Reading and Academic Achievement on Funds of Knowledge Variables and Statistical Controls (N = 155)

VARIABLES	Baseline Model		Model II		Model III		Model IV		Model V	
	B	S.E.	β	S.E.	B	S.E.	β	S.E.	B	S.E.
PRACH	0.46**	0.08	0.44	0.47**	0.46	0.47**	0.45	0.49**	0.47	0.48**
PED	0.19**	0.05	0.31	0.19**	0.31	0.20**	0.32	0.18**	0.28	0.18**
PUS	-0.08	0.12	-0.06	0.00	0.00	0.16	-0.00	0.16	-0.00	0.16
SUS	-0.26	0.25	-0.16	-0.25	-0.16	0.26	-0.14	0.26	-0.11	0.26
SPR	-0.19	0.27	-0.11	-0.21	-0.13	0.17	-0.10	0.28	-0.08	0.28
SEF				-0.06	-0.03	0.24	-0.03	0.24	-0.01	0.24
SSF				-0.08	-0.05	0.26	-0.05	0.27	-0.02	0.27
WEF				0.15	0.10	0.14	0.09	0.23	0.15	0.20
WSF				0.69	0.54	0.47	0.68	0.63	0.54	0.64
REF				-0.21	0.30	-0.21	0.30	-0.13	-0.28	-0.26
RSF				-0.57	0.45	-0.39	-0.57	-0.39	-0.53	-0.55
FACT				-0.00	0.00	-0.00	-0.05	-0.00	-0.05	-0.00
EPH							0.06	0.04	0.11	0.06
REC				0.30	0.30	no change	0.31	0.31	-0.08	0.17
Adj. R ²	0.33			-6%				+1%		-1%
Δ Adj. R ²										

**p ≤ .001; *p ≤ .05

PRACH = prior academic achievement; ACH = academic achievement; EL = English literacy-oriented activities; SL = Spanish literacy-oriented activities; REC = social reciprocity; EPH = parental educational philosophy; FACT = frequent activities; SEF = speaking English first; SSF = speak Spanish first; WEF = writing English first; WSF = writing Spanish first; REF = reading English first; RSF = reading Spanish first; PED = parental level of education; PUS = parent born in the United States; SUS = student born in the United States; SPR = student born in Puerto Rico.

whose parents were born in the United States had significantly higher English literacy-oriented activities than students whose parents were born outside the United States. Similarly, students who were born in the United States had significantly higher English literacy-oriented activities than those students who were born in other countries. The baseline model contributed to explaining 12% of the variation in students' English literacy-oriented activities (see Table 5). The second regression model (i.e., Model II) added the dummy variables related to the parental language acquisition. None of the parental language acquisition variables were found to be significant predictors of students' English literacy-oriented activities. The only significant predictor of students' English literacy-oriented activities was the statistical control of students born in the United States. The addition of the parental language acquisition variables reduced by 4% the proportion of variation in students' English literacy-oriented activities that is explained in the second model compared to the first model where prior academic achievement and the statistical controls were entered.

The third regression model (i.e., Model III) added the frequent activities subscale. Adding this variable increased by a considerable amount (100%) the proportion of variation in students' explained English literacy-oriented activities. The R-squared for Model III was now 22% compared to 12% and 11% from previous models. The frequent activities subscale was found to be the only significant predictor of students' English literacy-oriented activities in Model III. Model IV added the social reciprocity subscale. Adding the social reciprocity scale, once again, increased the proportion of variation explained in students' English literacy-oriented activities by 21%. The significant predictors of students' English literacy-oriented activities in Model IV were the frequent activities and social reciprocity subscales. Finally, the fifth model (i.e., Model V) added the parental educational philosophy subscale. The proportion of variation in students' English literacy-oriented activities was once again increased (by 9%) by adding the parental educational philosophy subscale. The three subscales: frequent activities, social reciprocity, and parental educational philosophy were significant predictors of students' English literacy-oriented activities.¹²

RELATIONSHIP BETWEEN FUNDS OF KNOWLEDGE AND STUDENTS' SPANISH LITERACY-ORIENTED ACTIVITIES

In the first model, the baseline model, prior academic achievement and all the statistical controls were introduced. Two predictors were significant: parent born in the United States, and student born in Puerto Rico.

Table 5. Summary of Multiple Regression of English Literacy-Oriented Activities on Funds of Knowledge Variables and Statistical Controls (N = 155)

VARIABLES	Baseline Model		Model II		Model III		Model IV		Model V						
	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.				
PRACH	-1.51	1.84	-0.07	-1.24	1.94	-0.06	-0.62	1.82	-0.03	-0.28	1.77	-0.01	0.17	1.75	0.00
PED	1.63	1.09	0.14	1.53	1.10	0.13	1.02	1.04	0.08	0.72	1.01	0.06	0.10	1.04	0.00
PUS	5.28*	2.57	0.19	0.96	3.41	0.03	2.64	3.21	0.09	3.44	3.12	0.12	3.59	3.07	0.13
SUS	12.15*	5.04	0.42	11.56*	5.46	0.40	7.58	5.18	0.26	9.18	5.06	0.31	10.59*	5.01	0.36
SPR	6.77	5.88	0.22	7.18	5.91	0.23	2.46	5.63	0.08	4.10	5.49	0.13	5.25	5.42	0.17
SEF				0.67	5.21	0.02	0.92	4.86	0.02	0.01	4.72	0.00	1.16	4.67	0.03
SSF				-3.10	5.70	-0.10	-2.93	5.32	-0.10	-3.02	5.15	-0.10	-1.71	5.10	-0.05
WEF				-5.97	7.10	-0.20	-4.87	6.63	-0.17	-2.05	6.50	-0.07	0.54	6.50	0.01
WSF				-10.29	11.54	-0.37	-8.59	10.77	-0.31	-10.11	10.45	-0.37	-11.50	10.29	-0.42
REF				0.18	6.43	0.00	0.24	6.00	0.00	-1.85	5.86	-0.06	-3.83	5.83	-0.13
RSF				1.85	9.60	0.06	2.01	8.96	0.07	4.72	8.73	0.17	5.78	8.60	0.21
FACT							0.51**	0.12	0.35	0.42**	0.12	0.30	0.42**	0.12	0.28
REC										9.49*	3.42	0.24	9.38*	3.36	0.23
EPH															
Adj. R ²	0.12			0.11			0.22			0.27			0.29		
Δ Adj. R ²				-4%			+100%			+21%			+9%		

*** $p \leq .001$; ** $p \leq .05$
 PRACH = prior academic achievement; ACH = academic achievement; EL = English literacy-oriented activities; SL = Spanish literacy-oriented activities; REC = social reciprocity; EPH = parental educational philosophy; FACT = frequent activities; SEF = speaking English first; SF = speak Spanish first; WEF = writing English first; WSF = writing Spanish first; REF = reading English first; RSF = reading Spanish first; PED = parental level of education; PUS = parent born in the United States; SUS = student born in the United States; SPR = student born in Puerto Rico.

The sign of the coefficients was as expected. The baseline model contributed to explaining 13% of the variation in students' Spanish literacy-oriented activities (see Table 6). The second regression model (i.e., Model II) added the dummy variables related to parental language acquisition. None of the variables in the model were significant predictors of students' Spanish literacy-oriented activities. However, the addition of the parental language acquisition variables increased the proportion of variation in students' Spanish literacy-oriented activities that was explained in the second model compared to the first model. The increase (31%) in the proportion of variation explained was substantial.

The third regression model (i.e., Model III) added the frequent activities subscale. The significant predictor of students' Spanish literacy-oriented activities was the frequent activities subscale. Adding this variable contributed to explaining additional variation (67% increase) in students' Spanish literacy-oriented activities. The fourth model (i.e., Model IV) added the social reciprocity subscale. Both the frequent activities and the social reciprocity scales were significant predictors. Adding this factor increased the proportion of variation explained in students' Spanish literacy-oriented activities by 11%. Finally, the fifth model (i.e., Model V) added the parental educational philosophy subscale. Adding this subscale reduced the proportion of variation in students' Spanish literacy-oriented activities by 1%.¹³

DISCUSSION

ON MEASURING FUNDS OF KNOWLEDGE

Six theoretically relevant factors emerged from the factor analytic solution: English literacy-oriented activities, Spanish literacy-oriented activities, social reciprocity, frequent activities, parental educational philosophy, and parental language acquisition. Note that other components of the concept of funds of knowledge did *not* emerge in this solution. For example, none of the components of the household's labor history (e.g., the type of job parents had and the languages spoken at work) had loadings on the factors greater than 0.30, consequently they were not included in any factor. In addition, some components of households' educational experiences and language use (e.g., parental English and Spanish proficiency and helping children with homework), and households' social interactions (e.g., parental social capital) were also not captured in the factor-analytic solution. The relatively small sample sizes may have exerted an influence on the factor-analytic solution. Another explanation relies on the proxies used in the study. It is likely

Table 6. Summary of Multiple Regression of Spanish Literacy-Oriented Activities on Funds of Knowledge Variables and Statistical Controls (N = 155)

VARIABLES	Baseline Model			Model II			Model III			Model IV			Model V		
	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β	B	S.E.	β
PRACH	-0.77	1.87	-0.03	-0.43	1.91	-0.02	0.22	1.77	0.01	0.52	1.72	0.02	0.43	1.74	0.02
PED	-0.94	1.10	-0.07	-1.07	1.09	-0.08	-1.61	1.01	-0.13	-1.88	0.99	-0.15	-1.75	1.03	-0.14
PUS	-6.24*	2.60	-0.22	-1.77	3.36	-0.00	3.12	0.00	-0.00	0.72	3.05	0.02	0.69	3.06	0.02
SUS	4.95	5.47	0.16	5.25	5.37	0.18	5.04	0.03	-0.14	2.51	4.94	0.08	2.22	5.00	0.07
SPR	12.28*	5.95	0.39	10.90	5.93	0.34	0.19	0.28	-0.10	7.41	5.36	0.23	7.18	5.41	0.22
SEF				4.94	5.20	0.14	5.20	4.72	0.14	4.37	4.61	0.12	4.14	4.66	0.11
SSF				9.24	5.17	0.31	9.42	5.17	0.31	9.34	5.03	0.31	9.08	5.09	0.30
WEF				-8.02	6.98	-0.27	-6.86	6.44	-0.23	-4.30	6.35	-0.14	-4.82	6.49	-0.16
WSF				4.48	11.35	0.16	6.27	10.47	0.22	4.90	10.21	0.17	5.18	10.27	0.18
REF				-4.12	6.32	-0.14	-4.06	5.83	-0.13	-5.96	5.72	-0.20	-5.56	5.82	-0.18
RSF				-12.10	9.44	-0.43	-11.94	8.70	-0.42	-9.47	8.53	-0.34	-9.69	8.57	-0.34
FACT							0.53**	0.12	0.35	0.46**	0.12	0.30	0.46**	0.12	0.30
REC										8.16*	3.34	0.21	8.63*	3.35	0.21
EPH													-0.39	0.90	-0.03
Adj. R ²				0.13			0.30			0.34			0.33		
Δ Adj. R ²				+31%			+67%			+11%			-1%		

** $p \leq .001$; * $p \leq .05$

PRACH = prior academic achievement; ACH = academic achievement; EL = English literacy-oriented activities; SL = Spanish literacy-oriented activities; REC = social reciprocity; EPH = parental educational philosophy; FACT = frequent activities; SEF = speaking English first; SSF = speak Spanish first; WEF = writing English first; WSF = writing Spanish first; REF = reading English first; RSF = reading Spanish first; PED = parental level of education; PUS = parent born in the United States; SUS = student born in the United States; SPR = student born in Puerto Rico.

that these proxies did not capture the complexities embedded in the conceptualization of funds of knowledge.

Given these findings, I think it is critical to refine the survey instrument used and to conduct more statistical analyses that can help provide researchers and educators with an instrument that is highly valid and reliable. To do so, it will be critical to conduct a confirmatory factor analysis or to use item response theory to assist in that process.

RELATIONSHIP BETWEEN FUNDS OF KNOWLEDGE AND STUDENTS' ACADEMIC AND READING ACHIEVEMENT

This study's findings are consistent with "traditional" models that have attempted to explain variation in the academic achievement of students in general, and of Latina/o students in particular. These "traditional" models have confirmed that human and economic capital (as measured by the socioeconomic status of families and parental level of education) are significant predictors of academic and reading achievement (Battle, 2002; Desimone, 1999; Coleman et al., 1966; Lee & Croninger, 1994; Padilla, 1996; Portes, 2000). Actually, this study's correlation coefficient between students' reading and academic achievement and parental level of education ($r = .28$) is almost the same as that found by Lee and Croninger.

This study also found that other factors that attempted to capture the concept of funds of knowledge (i.e., social reciprocity, parental educational philosophy, frequent activities, and parental language acquisition) were *not* significantly associated with students' academic and reading achievement. It is very likely that standard methods of assessing students' academic and reading achievement do not take into consideration the funds of knowledge existing in Latino households that are available to children and youth. Numerous research studies (e.g., Haertland & Herman, 2005; Haladyna, 2006) have argued that standardized tests measure exclusively what is taught in schools, and most importantly, what is defined as "valued learning outcomes" (Haertland & Herman, 2005, 2). There is another line of inquiry that has examined more closely the effects of standardized testing on Latina/o students. McNeil and Valenzuela (2000) found that the subjects tested by standardized tests (i.e., the Texas Assessment of Academic Skills [TAAS]) were reduced to isolated skills and fragments of fact. It can be argued then, that standard forms of assessment used to measure students' academic and reading achievement (i.e., ELA, SA, and GPA) capture only what is taught in classrooms and not the many practices (e.g., social and literacy) in which Latina/o children and families engage. Thus, the concept of funds of

knowledge, which attempts to capture a broader set of knowledge and skills, will not help to explain variation in Latina/o students' reading and academic achievement, unless these are broadened.

Alternatively, the proxies used in this study to measure the components of funds of knowledge did not adequately capture Latino households' knowledge, skill, and resources. If this is the case, then it is possible to find not statistically significant relationships between these proxies and students' academic and reading achievement. In addition, as previously discussed, there is a possibility that the relatively small sample size of this study did not capture the significance of the relationships between the components of funds of knowledge and Latina/o students' academic and reading achievement.

RELATIONSHIP BETWEEN FUNDS OF KNOWLEDGE AND STUDENTS' LITERACY-RELATED ACTIVITIES

The examination of funds of knowledge and English literacy-oriented activities also provided remarkable findings. This study found that the association between social reciprocity, frequent activities, and parental educational philosophy and students' English literacy-oriented was positive and significant. The variables that were found to be not statistically significant were those that attempted to capture parental language acquisition. It is important to note that this study's findings are consistent with existing research (e.g., Volk & De Acosta, 2004; Moll & González, 1994; Strickland & Taylor, 1989) that has documented the relationship between diverse parent-child interactions around non-school-related literacy activities and children's literacy development. Everyday activities such as shopping, playing music, sporting activities, and using the computer also encourage the acquisition of many literacy skills and linguistic resources (Moll & González; Volk & De Acosta). Moreover, frequent activities allow for a positive interaction between children and their parents (Strickland & Taylor). In addition, research (e.g., Saracho, 1997) suggests that the quality and quantity of parent-child interactions is important for children's development of literacy. The interactions between Latina/o youth and parents are also documented, although these interactions may differ from those between young children and parents. Latina/o children and adolescents act as family's translators or "para-phrasers" (Faulstich-Orellana, Dorner, & Pulido, 2003), as well as contributors to household tasks, and facilitators of access to services (Zentella, 1997).

Similar to the English literacy-oriented activities, this study found that social reciprocity and frequent activities were significantly associated with students' Spanish literacy-oriented activities. These findings are consis-

tent with the research mentioned previously, which documents the relationship between parent-child interactions and children's literacy development. However, little is known about the family factors associated with students' Spanish literacy-oriented activities. Lutz (2006) found that students' Spanish speaking proficiency was associated with opportunities to speak Spanish that were structured differently by family and neighborhood contexts, which allowed for greater or lesser contact with Spanish. Similarly, Reese, Garnier, Gallimore, and Goldenberg (2000) studied students' literacy development in both English and Spanish, and how the promotion of language-related activities in both languages could positively affect students' literacy outcomes. The findings from this study suggest that the interaction in regular activities between children, youth, and parents are beneficial to students' literacy development in both languages.

DISAGGREGATING DATA BY POPULATION SUBGROUPS

Currently, the academic achievement of Hispanics is mostly discussed as a whole, and assumes that the term "Hispanic" has a uniform meaning. Exceptions include studies (e.g., Rumberger & Larson, 1998; Marcelli & Cornelius, 2001; Wojtkiewicz & Donato, 1995) that deal with only one of the major Hispanic groups (Mexicans, Mexican Americans, and Puerto Ricans). Very few studies (e.g., Padilla, 1996; Portes, 2000; Glick & White, 2003) simultaneously analyze different subgroups of Hispanics (e.g., Mexicans, Cubans, and Puerto Ricans). While it is critical to continue analyzing the overall educational achievement of Hispanics, educational research can no longer deny the existence of complex intragroup differences among Hispanic children and their families. Thus, one of the goals of this study is to continue refining research by breaking down the category of "Hispanic" and/or "Latino" children into smaller subgroups. However, this study recognizes the difficulty in conducting research that examines the educational outcomes of different subgroups of Latinos, because it is extremely difficult to draw a random sample that will be representative of the various subgroups of Latinos that live in the United States. Since the random sample used in this study was drawn from Latinos currently living in the northeast of the United States, this study was capable of comparing two subgroups of Latinos (e.g., students born in Puerto Rico versus students born in other countries in Latin America). Future research on Latinos could avoid this problem by thinking more carefully about the sampling strategy. One alternative, used by Portes and Rumbaut (2001), is to select cities (e.g., San Diego and Miami) that have attracted a large number of immigrants from Latin America (and other

Asian countries). Once the cities are selected, then random samples of students can be drawn.

Taking into consideration the limitations discussed earlier, this study found that there were *not* statistically significant differences in the academic and reading achievement and in the English literacy-oriented activities between students born in Puerto Rico and students born in other Latin American countries. Nevertheless, this study found a statistically significant difference in the Spanish literacy-oriented activities between students born in Puerto Rico and students born in other Latin American countries. Researchers (e.g., Torres, 1997; Zentella, 1997) have studied the uses of English and Spanish among Puerto Ricans in distinct New York suburbs. Results from these studies suggest that, across generations, Spanish is used less than is English, contrary to what is typically thought (Zentella). However, even when students are using more English, they often do not perform well on standardized tests (in English) because they are constantly negotiating the use(s) of both English and Spanish in their academic, familial, and community lives. In other words, “the pull between what is rewarded and school and expected at home, and the stress occasioned by learning to speak and act appropriately in both worlds, make most Latina/o children true “border children,” even those who live miles away from the Rio Grande (Zentella). Likewise, Torres found that although Puerto Ricans of all ages report that both languages are important to them, “English is valued for instrumental reasons while Spanish is important for affective reasons” (p. 17).

IMPLICATIONS

The existing policy context (e.g., No Child Left Behind [NCLB]) is focused on students’ academic achievement defined only in terms of standardized outcomes, such as SA and ELA test scores. Consequently, efforts to help minority students (including Latina/o students) succeed in school are largely based on providing students with curricula and programs to improve their test scores (Ares & Buendía, 2007). Unfortunately, these test scores have served as a definitive measure of success. As a result, students’, families’, and communities’ insights, knowledge, and skills—funds of knowledge—have been largely ignored. This study’s findings suggest that Latina/o students and families *do* engage in many different activities that contribute to students’ learning. So, instead of viewing Latino families as needing remediation services and lacking resources to support students’ learning, it is critical to build on their life experiences, knowledge, and skills. It is also clear that there is need for refining the approaches and methodologies used to explain

and understand the educational outcomes of Latina/o students. This study addressed only some of the limitations that currently exist in the literature, by attempting to provide different proxies of factors that are associated with Latina/o students' educational outcomes, based on existing qualitative research on Latino families. Recognition of the existence of funds of knowledge in Latino households and its significant relationship to students' learning is a starting point for better understanding Latina/o students' achievement. As Cummins (1986) argues, students, especially minority students, will succeed to the extent that household and community participation is encouraged as an integral component of their education.

Notes

1. The terms Hispanic and Latino differ. The term Hispanic derives from the Iberian Peninsula, which includes Spain and Portugal. The term Hispanic was added to the U.S. census questionnaire around 1970. The term Latino derives from indigenous people in America. The term Latino began to be recognized in the United States around 1980, due to the large number of immigrants from Latin America living in the United States (Orfield, 1986; U.S. Census Bureau, 2000). In this study, both terms, Hispanic and Latino, will be used interchangeably to refer to children and families who were born in Latin America or who have Latin American origins.

2. It is important to state that the source of information, as well as the methodology utilized to calculate the dropout rates, will exert an influence on the magnitude of this indicator. For example, the Pew Hispanic Center reports dropout rates as a percentage of 16- to 19-year-olds, while the NCES reports Hispanic status dropout rates as a percentage of 16- to 24-year-olds. Thus, the Pew Hispanic Center reports a Hispanic dropout rate of 22%, while NCES reports a Hispanic dropout rate of 28%. Moreover, issues of nationality will yield different measures from the same two sources. NCES, for example, reports status dropout rates of 44% for Hispanics born outside the United States, which is more than double the rate of 16% of Hispanic youth born in the United States. On the other hand, the Pew Hispanic Center reports a Hispanic dropout rate of 33% for Hispanics born outside the United States, which contrasts with a 15% dropout rate for Hispanics born in the United States. Regardless of the source and method, there is a persistent gap in the educational attainment of Hispanic Americans and a sharp difference in attainment between foreign-born and native-born Hispanics.

3. PRSD is a pseudonym.

4. Principal component analyses with a varimax and an oblimin rotation were conducted to examine potential differences in the number of factors extracted, and in the structure of the factors. Both rotation methods yielded the same results. Researchers (Meyers, Gamst, & Guarino, 2006) have shown that both rotation techniques are equivalent with relatively large sample sizes. I report here the results from the varimax rotation because the correlations among the factors are relatively low; thus, it is reasonable to conclude that the assumption of independence among factors was met. Moreover, I chose to report the results of the varimax rotation because this method focuses on the factors and helps researchers interpret them (Meyers et al.).

5. Since not all students included in the random sample had surveys with complete

information, and since some student achievement data was not valid and/or missing, 57 cases were eliminated from the analyses.

6. Missing values were substituted with the mean values. Missing values for items on the subscales English and Spanish literacy outcomes ranged from 3% to 5%.

7. Missing values were substituted with the mean values. Missing values for items on the social reciprocity subscale ranged from 5% to 6%.

8. Missing values were substituted with the mean values. Missing values for items on the frequent activities subscale ranged from three to 5%.

9. Two outliers were identified by looking at the histogram of this variable. These outliers were removed from the analyses.

10. This study defines second-generation students as those students native-born of foreign parentage (Portes & Rumbaut, 2001).

11. A post hoc power analysis for all the R-squared coefficients was conducted. The power (or the ability to detect an effect size of this magnitude) was high. Power (1—) ranged from 0.96 to 1. Additionally, power analyses were conducted for each insignificant coefficient. All analyses yielded powers between 0.10 and 0.60. Based on this analysis, almost none of the coefficients would be detected in terms of statistical significance.

12. A post hoc power analysis for all the R-squared coefficients was conducted. The power (or the ability to detect an effect size of this magnitude) was moderate. Power (1—) ranged from 0.60 to 0.84. Additionally, power analyses were conducted for each insignificant coefficient. All analyses yielded powers between 0.66 and 0.98. Based on this analysis, all of these, except “parental level of education,” should be detectable in terms of statistical significance.

13. A post hoc power analysis for all the R-squared coefficients was conducted. The power (or the ability to detect an effect size of this magnitude) was moderate. Power (1—) ranged from 0.55 to 0.91. Additionally, power analyses were conducted for each insignificant coefficient. All analyses yielded powers between 0.15 and 0.79. Based on this analysis, all of these, except “parental level of education,” “parental educational philosophy,” and “student born in the United States,” should be detectable in terms of statistical significance.

References

- Andrews, J., & Yee, C. W. (2006). Children’s “funds of knowledge” and their real life activities: Two minority ethnic children learning in out-of-school contexts in the UK. *Educational Review*, 58, 435–449.
- Ares, N., & Buendía, E. (2007). Opportunities lost: Local translations of advocacy policy conversations. *Teachers College Record*, 109(3), 561–589.
- August, D., & Shanahan, T. (2006). *Developing literacy in second-language learners: Report of the National Literacy Panel on language-minority children and youth*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Bean, F., & Tienda, M. (1987). *The Hispanic population of the United States*. New York, NY: Russell Sage Foundation.
- Battle, J. (2002). Longitudinal analysis of academic achievement among a nationwide sample of Hispanic students in one- versus dual-parent households. *Hispanic Journal of Behavioral Sciences*, 24, 430–477.
- Becker, G. (1964). *Human capital*. New York, NY: Columbia University Press.
- Bose, C. (2006). City variation in the socioeconomic status of Latinos in New York State: A 2006 policy brief for the New York State Assembly Puerto Rican/Hispanic Task Force. Retrieved from <http://assembly.state.ny.us/comm/PRHisp/20070110/>

- Bourdieu, P. (1986). The forms of capital. In J. G. Richardson. (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). Westport, CN: Greenwood Press.
- Bourdieu, P., & Passeron, J. C. (1977). *Reproduction in education, society, and culture*. Beverly Hills, CA: Sage.
- Braver, S., & Bay, C. (1992). Assessing and compensating for self-selection bias (non-representativeness) of the family research sample. *Journal of Marriage and the Family*, *54*(4), 925–939.
- Caldas, S., & Bankston III, C. (1997). Effect of school population socioeconomic status on individual academic achievement. *Journal of Educational Research*, *90*, 269–278.
- Carter, P. (2003). “Black” cultural capital, status positioning, and schooling conflicts for low-income African American youth. *Social Problems*, *50*, 136–155.
- Chard, D., & Dickson, S. (1999). Phonological awareness. *Intervention in School and Clinic*, *34*(5), 261–270.
- Cheng, S., & Starks, B. (2002). Racial differences in the effects of significant others on students’ educational expectations. *Sociology of Education*, *75*, 306–27.
- Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., York, R., & Weinfeld, R. (1966). *Equality of educational opportunity*. Washington, DC: Government Printing Office.
- Coleman, J. (1988). Social capital in the creation of human capital. *The American Journal of Sociology*, *94*, S95–S120.
- Coles, G. (2003). *Reading the naked truth: Literacy, legislation, and lies*. Portsmouth, NH: Heinemann.
- Cummins, J. (1986). Empowering minority students: A framework for intervention. *Harvard Educational Review*, *56*, 18–36.
- Deil-Amen, R., & López Turley, R. (2007). A review of the transition to college literature in sociology. *Teachers College Record*, *109*(10), 6–7.
- DeLeon, A. (2002). *The urban high school’s challenge: Ensuring literacy for every child*. New York, NY: Carnegie Corporation.
- Desimone, L. (1999). Linking parental involvement with student achievement: Do race and income matter? *Journal of Educational Research*, *93*, 11–31.
- Dillon, W., Madden, T., & Mulani, N. (1983). Scaling models for categorical variables: An application of latent structure models. *Journal of Consumer Research*, *10*, 209–238.
- Education Trust (2003). *Latino achievement in America*. Washington, DC.
- Faulstich-Orellana, M., Dorner, L., & Pulido, L. (2003). Accessing assets: Immigrant youth’s work as translators or “para-phrasers.” *Social Problems*, *50*(4), 505–524.
- Fedderke, J., de Kadt, R., & Luiz, J. (1999). Economic growth and social capital: A critical reflection. *Theory and Society*, *28*, 709–745.
- Field, A. (2000). *Discovering statistics using SPSS for Windows: Advanced techniques for beginners*. Thousand Oaks, CA: Sage Publications.
- Freebody, P., Luke, A., & Gilbert, P. (1991). Reading positions and practices in the classroom. *Curriculum Inquiry*, *21*, 435–457.
- Fry, R. (2003). *Hispanic youth dropping out of U.S. schools: Measuring the challenge*. Washington, DC: The Pew Hispanic Center.
- Gándara, P. (1999). Telling stories of success: Cultural capital and the educational mobility of Chicano students. *Latino Studies Journal*, *10*, 38–54.
- García, E., & Cuéllar, D. (2006). Who are these linguistically and culturally diverse students? *Teachers College Record*, *108*(11), 2220–2246.
- Glick, J., & White, M. (2003). The academic trajectories of immigrant youths: Analysis within and across cohorts. *Demography*, *40*, 759–783.
- González, N., Moll, L., & Amanti, C. (2005). *Funds of knowledge: Theorizing practices in households, communities, and classrooms*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Groves, R., Fowler, F., Couper, M., Lepkowski, J., Singer, E., & Tourangeau, R. (2004). *Survey Methodology*. Hoboken, NY: Wiley & Sons.
- Haerteland, E., & Herman, J. (2005). A historical perspective on validity arguments for accountability testing. *Yearbook of the National Society for the Study of Education*, 104(2), 1–34.
- Haladyna, T. (2006). Perils of standardized achievement testing. *Educational Horizons*, 85(1), 30–43.
- Herman, J., & Golan, S. (1993). Effects of standardized testing on teaching and schools. *Educational Measurement: Issues and Practice*, 12, 20–25.
- Jaeger, R. (1993). *Statistics: A spectator sport*. (2nd edition). Newbury Park, CA: Sage.
- Jiménez, R. (2000). Literacy and the identity development of Latina/o students. *American Educational Research Journal*, 37, 971–1000.
- Jiménez, R., García, G., & Pearson, P. (1996). The reading strategies of bilingual Latina/o students who are successful English readers: Opportunities and obstacles. *Reading Research Quarterly*, 31, 90–112.
- Kalton, G., (1983). *Introduction to survey sampling*. Quantitative Applications in the Social Sciences Series. Newbury Park, CA: Sage.
- Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly*, 76, 1–19.
- Kingston, P. (2001). The unfulfilled promise of cultural capital theory. *Sociology of Education*, 74, 88–99.
- Kitson, G., Sussman, M., Williams, G., Zeehandelaar, R., Shickmanter, B., & Steinberg, J. (1982). Sampling issues in family research. *Journal of Marriage and the Family*, 44, 965–981.
- Ladson-Billings, G., & Tate, W. (1995). Toward a critical race theory in education. *Teachers College Record*, 97, 47–68.
- Lareau, A. (1999). Family-school relationships: A view from the classroom. *Educational Policy*, 3, 245–259.
- Lareau, A., & Horvat, E. (1999). Moments of social inclusion and exclusion race, class, and cultural capital in family-school relationships. *Sociology of Education*, 72, 37–53.
- Lareau, A., & Weininger, E. (2003). Cultural capital in educational research: A critical assessment. *Theory and Society*, 32, 567–606.
- Larson, J. (1997). Challenging autonomous models of literacy: Street's call to action. *Linguistics and Education*, 8(4), 439–445.
- Lee, C. (2001). Is October Brown Chinese? A cultural modeling activity system for under-achieving students. *American Educational Research Journal*, 38, 97–141.
- Lee, C. (2006). *Denver public schools: Resegregation, Latino style*. The Civil Rights Project. Harvard University. Retrieved from http://www.civilrightsproject.harvard.edu/research/deseg/Denver_Reseg.pdf
- Lee, V., & Croninger, R. (1994). The relative importance of home and school in the development of literacy skills for middle-grade students. *American Journal of Education*, 102, 286–329.
- Llagas, C., & Snyder, T. D. (2003). *Status and trends in the education of Hispanics*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Lutz, A. (2006). Spanish maintenance among English-speaking Latino youth: The role of individual and social characteristics. *Social Forces*, 84(3), 1417–1433.
- Marcelli, E., & Cornelius, W. (2001). The changing profile of Mexican migrants to the United States: New Evidence from California and Mexico. *Latin American Research Review*, 36(3), 105–131.
- Marshall, P. (2002). *Cultural diversity in our schools*. Toronto, Canada: Wadsworth Group.

- McDonough, P. (1997). *Choosing colleges: How social class and schools structure opportunity*. Albany: State University of New York Press.
- McNeal, L., & Valenzuela, A. (2000). *The harmful impact of the TAAS system of testing in Texas: Beneath the accountability rhetoric*. ERIC Document.
- Mercado, C. (2005). Reflections on the study of households in New York City and Long Island: A different route, a common destination. In N. González, L. Moll, & C. Amanti (Eds.), *Funds of Knowledge: Theorizing practices in households, communities, and classrooms* (pp. 233–255). Mahwah, NJ: Lawrence Erlbaum Publishers.
- Meyers, L., Gamst, G., & Guarino, A. (2006). *Applied multivariate research: Design and interpretation*. Thousand Oaks, CA: Sage.
- Moll, L., Amanti, C., Neff, D., & González, N. (1992). Funds of knowledge for teaching: Using a qualitative approach to connect homes and classrooms. *Theory into Practice, 31*, 132–141.
- Moll, L., Diaz, S., Estrada, E., & Lopes, L. (1992). Making contexts: The social construction of lessons in two languages. In M. Saravia-Shore & S. F. Arvizu (Eds.), *Cross-cultural literacy: Ethnographies of communication in multiethnic classrooms* (pp. 339–363). New York, NY: Garland.
- Moll, L., & González, N. (1994). Lessons from research with language minority children. *Journal of Reading Behavior, 25*, 439–456.
- Moll, L., & Greenberg, J. (1990). Creating zones of possibilities: Combining social contexts for instruction. In L. C. Moll (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 319–348). New York, NY: Cambridge University Press.
- Moll, L., & Ruiz, R. (2002). The schooling of Latino children. In M. M. Suárez-Orozco & M. M. Páez (Eds.), *Latinos: Remaking America* (pp. 362–374). Los Angeles, CA: University of California Press.
- Moreno, R. (2002). Teaching the alphabet: An exploratory look at maternal instruction in Mexican American families. *Hispanic Journal of Behavioral Sciences, 24*(2), 191–205.
- Morrison, K., & Lui, I. (2000). Ideology, linguistic capital, and the medium of instruction in Hong Kong. *Journal of Multilingual and Multicultural Development, 21*, 471–486.
- Murphy, K., & Davidshofer, C. (2001). *Psychological testing: Principles and applications*. (5th ed.). Upper Saddle River, NJ: Prentice-Hall.
- U.S. Department of Education, National Center for Education Statistics. (2004). *The Condition of Education 2004* (NCES 2004–077). Washington, DC: U.S. Government Printing Office.
- Ogbu, J. (1987). Variability in minority school performance: A problem in search of an explanation. *Anthropology and Education Quarterly, 18*(4), 312–334.
- Ogbu, J. (1991). Immigrant and involuntary minorities in comparative perspective. In M. Gibson & J. Ogbu (Eds.), *Minority status and schooling: A comparative study of immigrant and involuntary minorities* (pp. 3–33). New York, NY: New Press.
- Olmedo, P. (1997). Voices of our past: Using oral history to explore funds of knowledge within a Puerto Rican family. *Anthropology & Education Quarterly, 28*, 550–573.
- Orellana, M., & Reynolds, J. (2008). Cultural modeling: Leveraging bilingual skills for school paraphrasing tasks. *Reading Research Quarterly, 43*(1), 48–65.
- Orfield, G. (1986). Hispanic education: Challenges, research and policies. *American Journal of Education, 95*, 1–25.
- Padilla, Y. (1996). The influence of family background on the educational attainment of Latinos. *New England Journal of Public Policy, 2*, 25–48.
- Parcel, T., & Dufur, M. (2001). Capital at home and at school: Effects on student achievement. *Social Forces, 79*, 881–911.

- Pew Hispanic Center (2005). *Hispanics: A people in motion*. Washington, DC.
- Podsakoff, P., MacKenzie, S., Lee, J., & Podsakoff, N. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879–903.
- Pong, S. (1997). Sibship size and educational attainment in peninsular Malaysia: Do policies matter? *Sociological Perspectives, 40*(2), 227–42.
- Portes, A. (1998). Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology, 24*, 1–24.
- Portes, A. (2000). The two meanings of social capital. *Sociological Forum, 15*, 1–12.
- Portes, A., & McLeod, D. (1996). Educational progress of children of immigrants: The roles of class, ethnicity, and school context. *Sociology of Education, 69*, 255–275.
- Portes, A., & Rumbaut, R. (2001). *Legacies: The story of the immigrant second generation*. New York, NY: Russell Sage Foundation.
- Portes, P., & Zady, M. (2001, April). *Determinants of reading achievement of immigrant adolescents: The role of demographic and psycho-cultural factors in school adaptation*. Paper presented at the American Educational Research Association Meeting, Seattle, WA.
- Portes, A., & Zhou, M. (1993). The new second generation: Segmented assimilation and its variants. *Annals of the American Academy of Political and Social Science, 530*, 74–96.
- Reay, D. (1998). 'It's all becoming a habitus': Beyond the habitual use of habitus in educational research. *British Journal of Sociology of Education, 25*, 431–444.
- Reese, L., Gallimore, R., & Goldenberg, G. (1999). Job-required literacy, home literacy environments, and school reading: Early literacy experiences of immigrant Latino children. In J. G. Lipson & L. A. McSpadden (Eds.), *Negotiating power and place at the margins: Selected papers on refugees and immigrants, Vol. VII*, (pp. 232–269). Washington, DC: American Anthropological Association.
- Reese, L., Garnier, H., Gallimore, R., & Goldenberg, C. (2000). A longitudinal analysis of the ecocultural antecedents of emergent Spanish literacy and subsequent English reading achievement of Spanish-speaking students. *American Educational Research Journal, 37*, 633–662.
- Rodriguez, J. L. (2002). Family environment and achievement among three generations of Mexican American high school students. *Applied Developmental Science, 6*, 88–94.
- Rubinstein-Avila, E. (2006). Connecting with Latino learners. *Educational Leadership, 63*, 38–43.
- Rumberger, R. (1995). Dropping out of middle school: A multilevel analysis of students and schools. *American Educational Research Journal, 32*, 583–625.
- Rumberger, R., & Larson, K. (1998). Toward explaining differences in educational achievement among Mexican American language-minority students. *Sociology of Education, 71*, 69–93.
- Saracho, O. (1997). Perspectives on family literacy. *Early Child Development and Care, 127*, 3–11.
- Schmid, C. (2001). Educational achievement, language minority students, and the new second generation. *Sociology of Education, 74*, 71–87.
- Schultz, T. (1961). Investment in human capital. *American Economic Review, 51*, 1–17.
- Sirin, S. (2005). Socioeconomic status and academic achievement: A meta-analytic review of research. *Review of Educational Research, 75*(3), 417–453.
- Snow, W., Barnes, J., Goodman, I., & Hemphill, L. (1991). *Unfulfilled expectations: Home and school influences on literacy*. Cambridge, MA: Harvard University Press.
- Snow, C., Burns, S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.
- Stamps, K., & Bohon, S. (2006). Educational attainment in new and established Latino metropolitan destinations. *Social Science Quarterly, 87*, 1225–1240.

- Stevens, J. (1992). *Applied multivariate statistics for the social sciences*. (2nd ed.). Hillsdale, NJ: Erlbaum.
- Street, B. (1987, October). *Comparative perspectives on literacy research*. Paper Presented at the Annual Meeting of the Boston University Conference on Language Development, Boston, MA.
- Street, B. (1997). The implications of the "New Literacy Studies" for literacy education. *English in Education, 31*, 45–59.
- Street, C. (2005). Funds of knowledge at work in the writing classroom. *Multicultural Education, 13*, 22–25.
- Strickland, D., & Taylor, D. (1989). Family storybook reading: Implications for children, families, and curriculum. In D. S. Strickland & L. M. Morrow (Eds.), *Emerging literacy: Young children learn to read and write* (pp. 27–34). Newark, DE: International Reading Association.
- Suárez-Orozco, M., & Paez, M. (2002). *Latinos: Remaking America*. Los Angeles, CA: University of California Press.
- Suskind, D. (2007). Going public: NCLB and literacy practices in teacher education. *Language Arts, 84*(5), 450–455.
- Torres, L. (1997). *Puerto Rican discourse: A sociolinguistic study of a New York suburb*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Trueba, H. (1988). Culturally based explanations of minority students' academic achievement. *Anthropology & Education Quarterly, 19*, 270–287.
- Trueba, H. (2002). Multiple ethnic, racial, and cultural identities in action: From marginality to new cultural capital in modern society. *Journal of Latinos and Education, 1*, 7–28.
- Upadhyay, B. (2006). Using students' lived experiences in an urban science classroom: An elementary school teacher's thinking. *Science Education, 90*, 94–110.
- U.S. Census Bureau (2000). *Census 2000 Data for Puerto Rico*. Retrieved from <http://www.census.gov/census2000/states/pr.html>
- Valencia, R. (1997). *The evolution of deficit thinking: Educational thought and practice*. The Stanford Series on Education and Public Policy. London, UK: Falmer Press.
- Valencia, R., & Villarreal, B. (2003). Improving students' performance via standards-based school reform: A critique. *The Reading Teacher, 56*(7), 612–621.
- Vélez-Ibañez, C., & Greenberg, J. (1992). Formation and transformation of funds of knowledge among U.S.-Mexican households. *Anthropology & Education Quarterly, 23*, 313–335.
- Vigdor, J. (2004). Community composition and collective action: Analyzing initial mail response to the 2000 Census. *Review of Economics and Statistics, 86*(1), 303–312.
- Volk, D., & De Acosta, M. (2004). Mediating networks for literacy learning: The role of Puerto Rican siblings. In E. Gregory, S. Long, and D. Volk (Eds.). *Many pathways to literacy: Young children learning with siblings, grandparents, peers, and communities* (pp. 25–39). New York, NY: Routledge Falmer.
- Weisskirch, R. & Alatorre Alva, S. (2005). Language brokering and the acculturation of Latino children. *Hispanic Journal of Behavioral Sciences, 24*, 369–378.
- Winship, C., & Mare, R. (1992). Models for sample selection bias. *Annual Review of Sociology, 18*, 327–50
- Wojtkiewicz, R., & Donato, K. (1995). Hispanic educational attainment: The effects of family background and nativity. *Social Forces, 74*(2), 559–574.
- Wolf, E. (1984). Culture: panacea or problem? *American Antiquity, 49*(2), 393–400.
- Zentella, A. (1997). Youth at home, in their communities, and in school: The language link. *Education and Urban Society, 30*, 122–130.
- Zhou, M. (1997). Growing up American: The challenge confronting immigrant children and children of immigrants. *Annual Review of Sociology, 23*, 63–95.

APPENDIX

APPENDIX A

Description of data collected by the survey instrument

Construct	Categories	Measure	LHHS Questions
Funds of knowledge	1) <i>Households' labor history</i> Proxies for the knowledge and skills accumulated and developed through the household's labor history	<ul style="list-style-type: none"> o Job(s) outside the home o Type(s) of job held outside the home o Type of job held in country of origin o Languages used in job(s) o How are languages used at job o Parent's and children's involvement in informal job market o Parent's and children's involvement in volunteering activities 	Q12 and Q13 Q14 Q6 Q15 and Q17 Q16 and Q18 Q24 and Q25
	2) <i>Households' social interactions</i> Proxies for the knowledge and skills accumulated and developed through the social interactions of household members	<ul style="list-style-type: none"> o Number of cities in the U.S. in which the respondent has lived o Number of Latino families with whom respondent has regular o Where do families with whom respondent interacts with live? o Type and frequency of support received from other households o Type and frequency of support provided to other households o Respondents' visit to country of birth 	Q26 and Q27 Q28 Q29 Q30 Q31
	3) <i>Household's frequent activities</i> Proxies for the knowledge and skills accumulated and developed through the frequent activities practiced by household members	<ul style="list-style-type: none"> o Type and frequency of activities in which the respondent and his/her children engage in 	Q32 Q5 Q43
	4) <i>Households' educational experiences and language use</i> Proxies for the knowledge and skills accumulated through the household's educational experiences and language use	<ul style="list-style-type: none"> o Language(s) learned to speak first o Language(s) learned to write first o Language(s) learned to read first o Respondents' English language proficiency o Respondents' Spanish language proficiency o Helping children with homework o Time spent with children after school o Parent's educational philosophy 	Q34 Q35 Q36 Q37 Q38 Q40 Q39 Q44
	5) <i>Household composition and demographic characteristics of household members</i>	<ul style="list-style-type: none"> o Number of children o Number of children currently living in the house o Number of adults living in the house o Relationship with respondent o English language proficiency o Country of birth o Level of education 	Q7 Q8 Q10 Q11a Q11b Q11c Q11d
Literacy outcomes	Proxies for English literacy outcomes	o English literacy-oriented activities in which parents and children engage in	Q41
	Proxies for Spanish literacy outcomes	o Spanish literacy-oriented activities in which parents and children engage in	Q42
Statistical controls	Parental country of birth	o Parental country of birth	Q2 and Q3
	Parental level of education	o Parent's highest level of education obtained	Q33
	Student's country of birth	o Student's country of birth	Q9

APPENDIX B

Factors and loadings

Factor name	Loadings
Factor 1: Spanish literacy-oriented activities	
– How frequently do you and your child write	.875
– How frequently do you and your child share family stories	.862
– How frequently do you and your child look for information	.842
– How frequently do you and your child read	.830
– How frequently do you and your child discuss TV shows	.828
– How frequently do you and your child repeat prayers	.772
– How frequently do you and your child repeat rhymes and riddles	.756
– How frequently do you and your child translate	.751
– How frequently do you and your child sing	.705
Factor 2: English literacy-oriented activities	
– How frequently do you and your child share family stories	.781
– How frequently do you and your child repeat rhymes and riddles	.741
– How frequently do you and your child sing	.739
– How frequently do you and your child discuss TV shows	.727
– How frequently do you and your child read	.724
– How frequently do you and your child repeat prayers	.717
– How frequently do you and your child write	.703
– How frequently do you and your child look for information	.650
– How frequently do you and your child translate	.631
Factor: Social reciprocity	
– How frequently do you provide support to find a job	.870
– How frequently do you provide car repair services	.862
– How frequently do you provide support to access services	.790
– How frequently do you receive support to access services	.750
– How frequently do you receive help to translate	.621
– How frequently do you provide financial support	.601
– How frequently do you receive financial support	.565
– How frequently do you receive car repair services	.543
– How frequently do receive house maintenance support	.492
– How frequently do you provide house maintenance support	.465
– How frequently do you receive transportation services	.418
– How frequently do you receive help to find a job	.412
Factor 4: Frequent activities	
– How frequently do you and your child practice house cleaning	.791
– How frequently do you and your child practice shopping	.690
– How frequently do you and your child practice house maintenance	.632
– How frequently do you and your child practice using computer	.632
– How frequently do you and your child practice cultural activities	.471
– How frequently do you and your child practice cooking	.433
Factor 5: Language acquisition	
– What language did you learn to read first	.856
– What language did you learn to write first	.842
– What language did you learn to speak first	.610
Factor 6: Parental educational philosophy	
– The education that my child gets will help him/her become a more educated person	.885
– The education that my child gets will help him/her get a better job	.852
– Boys and girls should get the same amount of education	.753

DR. CECILIA RIOS-AGUILAR is an Assistant Professor at the Center for the Study of Higher Education. Dr. Rios-Aguilar has conducted research on funds of knowledge, social, cultural, and human capital. Her research interests include education production function analysis for Latina/o students, educational policies targeted to Latina/o students, social network analysis, academic preparation, and access to higher education, and quantitative methods. Her recent publications include studies that examine the relationship between funds of knowledge and the forms of capital, and how funds of knowledge can be used to examine issues of college access among Latina/o students.