An Ethnographic Inquiry Connecting Home to School for Literacy and Mathematics Learning of Hispanic Families

by

Gilbert Dueñas

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Approved by

Charles J. Eick, Chair, Associate Professor of Curriculum and Teaching
Shelly Bowden, Distinguished Teaching Professor of
Early Childhood Elementary and Reading Education
Marie Kraska, Mildred Cheshire Fraley Distinguished Professor of Educational Foundations,
Leadership and Technology
Marilyn E. Strutchens, Mildred Cheshire Fraley Distinguished Professor of
Curriculum and Teaching

Abstract

There is limited research on bilingual classroom teachers who conduct household visits of non-English speaking Hispanic families. The author and teacher explored (a) ways that three migrant, Hispanic families were involved with their children's school to promote mathematics and language literacy learning and communication; and (b) how these Hispanic parents viewed themselves as critical partners in their child's literacy learning. Findings from four months of household visits involving interviews, observations, and analysis of student schoolwork indicated the parents held several expectations. These parents hoped for a home-school partnership based on mutual respect and trust; and they desired that their children's cultural experiences be woven into classroom learning. Older siblings served as language brokers between their non-English speaking parents and younger siblings during at home learning; and family members often code-switched when talking with each other about homework and understanding school notes. To connect with their children's mathematics learning, these parents accessed their prior learning in Mexico. While in school, these parents memorized multiplication facts and solved computation problems in their mind. These parents also enriched their children's mathematics via cooking, singing, paying utility bills, or buying refreshments from a passing ice cream vendor. These were the kinds of mathematics activities about which the parents felt most confident and knowledgeable. The parents often engaged their children in mathematics discourse at the kitchen table, living room, and the outside yard or local market. The parents' voices echoed a persistent hope that their children would one day learn school mathematics and use that knowledge to push

for needed social changes. Based on the researcher's household visits, this paper recommends suggestions for improving home-school partnerships with migrant Hispanics and for reforming school mathematics' practices to incorporate the student's cultural knowledge and experience.

Acknowledgments

I dedicate this dissertation to our Lord whose endless reach and strength inspired his servant to write an important reflection of three Hispanic families. Second, I dedicate this writing in memory of my deceased parents, Agustina and Rudolfo Dueñas and my deceased sister, Martha Dueñas. Third, I dedicate this dissertation to my loving wife, Becky, our daughter, Julie, my brothers, Rudy and Tony, and my sister, Teresa

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Chapter 1

Introduction and Overview of the Study

An Ethnographic Inquiry Connecting Home to School for Literacy and Mathematics Learning of Hispanic Families

Introduction

> Soy padre de un niño en su escuela. Como puedo yo aprender lo que mi niño está aprendiendo en la escuela? (As a parent of a child in your school, how can I learn what my child is learning?) Yo quiero ayudar mi niños hacer buenos estudios en la escuela pero yo no hablo Ingles." (I want to help my children do well at school but I do not speak English.) From my fellow teachers, I have heard their concerns, and I want to reach out to Hispanic parents about what their child is learning in literacy. I want to build a meaningful relationship with my students' parents, but how can we start a dialogue when I do not speak Spanish?[Mar. 2008]

Increasingly, significant numbers of linguistically diverse families have migrated to the United States; and their children have entered schools across the country with the hope of acquiring competency in the English language and gaining access to relevant academic experiences. Yopp and Stapleton (2008) suggested, "Educators face an unprecedented challenge as English Language Learners in public pre-kindergarten through 12th grade schools number more than 5 million, or 10.1% of the total enrollment" (p. 374). These numbers are up nearly 100 percent from a decade earlier (Short & Echevarria, 2004/2005). In defense of education for children of immigrant families (and most tend to be from Mexico) is the U.S. Supreme Court decision, *Plyler v. Doe* that stipulated the children of immigrant families have a right and obligation to attend public school through grade 12 (Gonzalez & Huerta-Macias, 1997). Notwithstanding a subsequent U.S. Supreme Court decision, *Lau v. Nichols*, instructed schools to provide an education comprehensible to limited English proficient students. Howe (1994) reported, "School administrators were still struggling to develop appropriate instructional programs to address the particular cultural needs of Hispanics" (p. 42). Mays (2008) reiterated

an alarming trend, "As the minority population in the United States continues to grow; the rapidly increasing epidemic of students left behind is one of grave concern for early childhood educators nationwide" (p. 415). With the dramatic increase in Hispanic students with limited or no English language skills, teachers must address a fundamental issue, which is establishing a relationship with parents in an effort to promote literacy learning amongst their children (Bazron, Osher, & Fleischman, 2005; Fitzgerald, 1993).

Statement of the Problem

Growing Shift in School Demographics

There is an increasing level of attention in professional publications reiterating the need for educators to support their linguistically and culturally diverse students to acquire the language skills necessary to participate and succeed in literacy and mathematics. However, there is limited research focusing on the bilingual teacher as a mediator between school and Latino parents and on the cultural perspectives and feelings of Latino parents on how to bridge the gap between home and school particularly in inner-city schools (McCarthey, 2000; Moll, Amanti, Neff, & Gonzalez, 1992; Epstein & Dauber, 1991). In the past twenty years, the United States Hispanic populace increased more than total growth (Lundgren & Morgan, 2003). Similarly, Williams (2001) cited demographic data from the National Center for Education Statistics (1997), "It is projected that between the years 2000 and 2020, there will be a 47% increase in Hispanic children from the ages of 5 to 13 in U.S. schools" (p. 750). Additionally, a significant number of Spanish-speaking children have entered preschool and elementary schools in the southeast and Midwest where there has not previously witnessed such historic ethnic or racial diversity—a trend that is expected to grow at an increasing rate (Lundgren & Morgan, 2003).

Defining "Literacy learning" – Connecting Home and School Culture

In research on English Language Learners developing proficiency in a new language, Ben-Yosef (2003) noted, "Literacy is about knowledge in general, knowledge that informs the ways in which we make meaning from texts and understand the world around us" (p. 81). Similarly, Cook (2005) identified several out-of-school literacy practices, such as children conversing in the back seat of a car; a child writing in a diary; or parents and their children exchanging ideas that facilitate development in reading, writing, and thinking. To address the concept of how Hispanic parents might be involved with their children's academic learning, Riojas-Cortez, Flores, Smith, and Clark (2003) indicated the parents' use of traditional family literacy practices such as telling cuentos (Spanish for storytelling) can support school literacy practices. In their research on parents as a resource for their children's literacy growth, Flood, Lapp, Tinajero and Nagel (1995) found that parents can contribute family stories, favorite books, a memorable event or life history. Additionally, teachers can contact parents to discuss ideas to support the student's literacy like having a special read aloud followed by a question and answer session (Strickland, Morrow, Taylor, & Walls, 1990).

Research on family and school connections offers purpose for initiating mathematics reform. Sheldon and Epstein (2005) suggested classroom teachers first offer their support to parents in learning English language skills and then offer ideas about mathematics learning in the classroom. Likewise, Morrow, Kuhn, and Schwanenflugel (2006) found a home-school connection based on involving parents in literacy instruction could benefit all readers—English speaking, at risk, and English language learners. Classroom teachers and Hispanic parents can work as partners as they share information about home and school literacy practices with the purpose of supporting the children's efforts to gain academic knowledge and become proficient

in a second language (Lazar & Weisberg, 1996). Allen (2008) defined reciprocity as, "A healthy partnership in which teachers and parents give in ways that support one another and support the student" (p. 24). Furthermore, Whittaker, Salend, and Gutierrez (1997) found, "Incorporating resources that give voice to migrant children and their families is a powerful way of validating their significant contribution to the communities in which they live" (p. 491).

Dworin (2006) articulated the findings from a "Family Stories Project" in which the Latino students of a fourth grade class used Spanish and English for thinking about and sharing ideas with others in writing stories of their families. In a similar inquiry, Freeman and Freeman (1993) discussed the importance of permitting a student's peers, their parents, and teacher aides to both read and write with students who speak English as a Second Language. In this manner, a supportive, positive role model could offer the Spanish-speaking students support in academic learning and in gaining English language proficiency. Whittaker, Salend, and Gutierrez (1997) indicated inclusion of the strengths and cultural resources of migrant families in classroom learning served to validate the significance of the students' communities.

Parent-School Connection: At Home Literacy Learning

Research in promoting a collaborative effort between schools and parents of ELL students has focused on sending literacy materials home (Yopp & Stapleton, 2008; Morrow, Kuhn & Schwanenflugel, 2006; Padak & Rasinski, 2006; Peterson & Heywood, 2007). Research that explored the parent-school connection discussed telling parents to read to their children or encouraging parents to describe barriers to reading to their children (Saenz & Felix, 2007); and creating an outreach center for immigrant parents (Sobel & Kugler, 2007). Other practices utilized to forge a parent-school relationship included inviting immigrant parents to visit their child's classroom and sharing in meaningful activities at school (Spielman, 2001; Gray &

Fleischman, 2004/2005); and conducting school-parent surveys on various measures such as teacher practices and parental involvement (Epstein & Dauber, 1991). The research has also recorded efforts toward inviting parents to attend school orientation meetings and maintaining a parent journal (Lazar & Weisberg, 1996; Morningstar, 1999); and drawing of neighborhood maps and photographic documentation (Allen, 2008; Allen & Labbo, 2001; Spielman, 2001).

Apart from the above-mentioned literacy learning strategies, this paper discussed the importance of planned opportunities, such as collaborative learning in paired or small group activities as one approach to scaffold oral language development for English language learners (Hadaway, Vardell, & Young, 2001). In their research on extending the literate community, Koskinen and Shockley (1994) reiterated the school's role as "teachers of children" to facilitate parental access to school literacy and recognize parents as their children's first and primary teachers. Similarly, Hammerberg (2004) suggested the teacher's comprehension instruction communicated implicit messages about the role of cultural knowledge and family experience in school literacy learning.

Incorporating At Home Mathematics Learning

Family dialogue can create opportunities for learning. Civil (2008) noted the need for more research focused on immigrant parents and teachers working together, and how both perceive each other in relation to the kind of mathematics learning provided to children. In addressing the gap between out-of-school and in-school mathematics Civil (2002) suggested, "working class, minority parents want to learn the mathematics their children are learning in school and they want to understand this mathematics and not just to be told or shown a formula to memorize" (p. 146). Gonzalez, Moll, Tenery, Rivera, Rendon, Gonzalez, and Amanti (1995) suggested classroom teachers learn more of their students' lives and how family experiences have

influenced their usage of mathematics at home. Similarly, Gutstein, Lipman, Hernandez, and de los Reyes (1997) reported the importance of teachers in the project using their students' informal mathematical knowledge and culture as viable sources in constructing the classroom curriculum.

When teachers acknowledge the diverse student background, they become more self-confident and feel their contribution is worthwhile despite their limited English language proficiency (Furner, Yahya, & Duffy, 2005). In studies with children of Mexican culture, Rothstein-Fisch, Greenfield, and Elise-Trumbull (1999) noted, "When teachers understand and respect the collectivistic values of immigrant Latino children, the opportunities for culturally informed learning become limitless" (p. 66).

Weaving Language Objectives with Mathematics Learning—Key to Extending Access

Educators have an immense challenge to orchestrate classroom instruction so English Language Learners can equitably participate and succeed in a mathematics classroom. Bay-Williams and Herrera (2007) indicated one perspective presupposes symbols used to represent addition, subtraction, or multiplication problems are widely known; thus ELL students can readily understand their function in mathematics. English Language Learner students are challenged in such learning environments because the above perspective presumes the ELL student previously acquired a sufficient level of the English language to write and read mathematics to coincide with their translation of the symbols. As an alternative, the classroom teacher's strategy might be to engage students in small-group learning or use visual aids to scaffold the mathematics learning of ELL students. Bay-Williams and Herrera (2007) also noted a reliance on "standards-based practices" offered ELL students' greater access to mathematics learning; however, this second perspective overlooked the necessity to make specific accommodations to scaffold their language needs. A third perspective toward making

mathematics learning accessible to language minority students is to simultaneously offer bilingual instruction and content instruction in mathematics. In defense of the third approach, Moschkovich (2002) found, "Classroom instruction should support bilingual students' engagement in conversations about mathematics that go beyond the translation of vocabulary and involve students in communicating about mathematical concepts" (p. 208). Moschkovich (2002) urged teachers to permit and even encourage the ELL student to incorporate the use of code-switching, gestures and concrete objects as part of the classroom discourse on mathematics. Such a teaching strategy, in turn permits teachers to assess the ELL students' mathematical competence.

Acquiring a Deeper Knowledge of Students' Mathematics Learning

As a third grade teacher for the past seven years, I realized that my students have previously learned and tend to use different problem-solving strategies during mathematics lessons. For example, I observed that some students referred back to their knowledge of addition facts to solve a word problem involving the multiplication of the digits 5 and 7. Their scratch paper calculations showed me evidence of adding "5" seven different times to arrive at the solution. I observed that other students relied on their knowledge of multiplication facts to numerically portray their mathematical thinking about the relationship between the factors 5 and 7 and their steps taken to arrive at a problem solution. Furthermore, I noted that three of my students, one Hispanic and two African-American who sat in the same row, typically engaged in dialogue with each other as their strategy for understanding and working through the different elements of the mathematics' word problem. From listening to their dialogue, I acquired a clearer perspective of how their preference for sharing knowledge enabled them to reach the solution. To further support my emerging understanding of the students' mathematics

knowledge and practices, I followed Carpenter, Fenema, and Franke's (1996) Cognitively Guided Instruction (CGI) model as a framework for placing my children's thinking at the heart of classroom instruction and the interpretation of their preferred strategies for solving problems. During whole group, small group or one-to-one instruction, I expended effort to create a learning environment that encouraged student discourse and a forum in which varied problem solving techniques were acknowledged.

Vignette 1: In solving a word problem that prompted the students to determine the amount of change after purchasing two objects, I engaged the students in the following exchange:

Teacher: Children, the problem says that Lee went to the store and bought a book for $0.52 and a pencil for $0.18. If Lee gave the store clerk a $1.00 bill, how much change did he get back?

Timothy: I think that we need to add the two things that he bought, but I don't know what to do next.

Teacher: Good. Timothy, why do you say that we need to add the two things that he bought?

Timothy: We add the two things that Lee bought so we know how much to pay.

Teacher: Very good. Ross, could you continue with Timothy's idea that we need to know how much to pay so we can figure out the change. At this point, Ross goes to the board.

Ross: On the board, he does the addition problem of $0.52 + $0.18 and shows the sum of $0.70. Teacher, you have shown us before that we can take the total price of $0.70 and subtract it from the $1.00 that we gave the store. This will tell us the amount of change.

Teacher: Timothy, can you come back to the board and tell us why we need to subtract the $0.70 from the $1.00.

Timothy: I think we subtract because the $1.00 is what we gave the store and the $0.70 is the total cost of the two things he bought. And we want to find out what is the change.

From these and other classroom experiences in which the children and I worked together to solve mathematics word problems, I became more conscious of their initial tendency to emulate the techniques and language that I had modeled in the classroom. Over time, I also became intuitively aware of their learned procedures to solve multi-step problems using addition, subtraction and regrouping principles alongside manipulatives and visual aids. As noted in

Carpenter, Fennema, and Franke's (1996) portrayal of Cognitively Guided Instruction, the researchers posited that teachers of mathematics could bring about real reform in classroom pedagogical practices by focusing on the process in which students evolve from solving mathematics problems with concrete materials to connecting abstract ideas with their existing knowledge.

From research of an after-school program in a predominantly Latino/a community, Diez-Palomar, Simic, and Varley (2006) showed the importance of allowing Latino students to use their knowledge and experience to talk about and solve problems at their school and neighborhood. In this after-school project, "The Math Club," the students explored their classroom; took photographs as they walked through their community; and constructed mathematical problems that were relevant to the entire Latino community in the United States. The significance of this project was that students were allowed to freely reflect on each other's ideas and solutions; draw on multiple sources of knowledge; and make connections of mathematics to their everyday lives.

Khisty and Chval (2002) noted within the classroom environment, the teacher still served as a pivotal role in the communication of mathematics and especially where some of the students were second language learners. In this setting, the teacher's use of mathematics' talk provided the framework for ELL students to interact during problem solving; collaborative and independent thinking; and meaningful communication designed to construct knowledge through questioning techniques and guidance (Khisty & Chval, 2002).

Vignette 2. Small group discussion on using elapsed time

During a series of lessons on telling time, using the nearest hour and a calendar, I employed concise, clear language (in Spanish and English) during whole class instruction so my

ELL students gained control of the necessary mathematical discourse to express their understanding of the passing of time. What follows is an excerpt of a small group discussion with six students (two were ELL students) on using a 30-day calendar to explain the concept of "elapsed time" between the start and end of an event. As a teacher, it was important to me that my ELL students were able to use mathematical words to explain their ideas and reasoning and to allow for native language intervention.

Teacher: Ricardo, vamos a utilizar un calendario para explicar el tiempo." (Translation: We will use a calendar to explain time.) ¿Cómo crees que el calendario nos ayuda a decir la hora? (Translation: How do you think a calendar helps us to tell time?)
Ricardo: The student utters the word "el tiempo" and then says it tell the days and weeks.
Teacher:¿Cuántos días hay en una semana?" (Translation: How many days in a week?)
Ricardo: Using the calendar, hay siete días en cada semana. (Translation: There are seven days in a week.)
Teacher: Muy bien (Very good) Pointing to the January calendar, Si empezamos el 7 de enero y finalizará el 14 de enero, ¿cuántos días transcurren (esta palabra significa pasar)? (Translation: If we start on January 7 and we finish on January 14, how many days have gone by or elapsed?
Ricardo: With calendar, the time that goes by is 7 days.
Teacher: Very good. You now know that another way to explain the time that passes between dates on a calendar is elapsed time.

Pesek and Kirshner (2000) explained that pressures of time or standardized testing often replaces instruction designed to instill understanding of mathematical ideas with instruction focused primarily on mathematics involving recall and procedural-skill development. Thus, a student's prior mathematics' experience with mainly instrumental [rote] learning functioned as an obstacle in that student's subsequent attempts to explain how a mathematical concept could be used to solve a mathematical problem or a real world situation. Results of the research, which explored the effects of classroom instruction emphasizing rote learning versus meaningful, critical thinking, will prompt educators to make reforms in their mathematics instruction.

In 1989, the Ford Foundation introduced the Quantitative Understanding Amplifying Student Achievement and Reasoning (QUASAR) project following a series of publications by

the National Council for Teachers of Mathematics' (NCTM) that pushed for major changes in mathematics curriculum, instruction and assessment. The project's aim was to help improve the mathematics learning of students at six middle school sites across the United States serving disadvantaged urban student populations (Secada, Ortiz-Franco, Hernandez, & De La Cruz, Eds., 1999). At one school, where English Language Learners represented three-fourths of the student enrollment and their primary at home language was other than English, the curriculum was teacher-directed with minimal student participation. Following staff development and guidance from several community resources in the district, the classroom teachers encouraged students to decide what was important to include in their presentations and to explain their solutions with fellow students using a four-point rubric to evaluate presentations (Secada, Ortiz-Franco, Hernandez, & De La Cruz, Eds., 1999). Several student reactions were drawn from this project. When allowed to work in groups, the English Language Learner students (with a majority being Latino), indicated they learned better when having the choice of using the problem-solving technique; and feeling more confident while helping the group solve the problem (Secada et al., 1991).

Vignette 3. Small group discussion on determining probability of an outcome

Recognizing that collaborative learning and communication were strategies that benefit the learning of culturally diverse students, I used Silver's (1995) discussion of QUASAR classrooms as a framework for scaffolding the students' level of mathematical reasoning. In providing mathematics instruction, e.g., in determining the probability that a particular colored marble might be pulled from a bag filled with different colored marbles, my students and I agreed upon certain rules of conduct to ensure each student's ideas and questions were encouraged and respected. Secondly, the students in the class were arbitrarily assigned to small groups with no

connection to their current academic standing or cultural background. In this setting, I rotated through four different groups to guide the expression of ideas amongst the members and to probe their mathematics reasoning. What follows is an excerpt of the dialogue during a small group discussion of probability designed to scaffold student connections amongst divergent ideas:

Teacher: We have a bag that has 15 different colored marbles. In the bag there are 6 green marbles, 4 yellow marbles, 3 brown marbles and 2 purple marbles. What is the probability or chance that a yellow marble will be chosen?
Student 1: Since there are 4 yellow marbles, there is some chance.
Teacher: Very good. I need for the group to talk about the kind of chance we have to pick a yellow marble. As Student 1 said, there is a chance to pick a yellow marble. How can we express the chance of picking a yellow marble?
Student 2: Teacher, I would like to pull out all the marbles and show you what I am thinking.
Teacher: Go ahead. I am very interested in what you learn from this activity.
Student 2: Since there are only 4 yellow marbles, we could say that there is some chance that we will pull a yellow marble.
Teacher: Good. I'd like for the group to talk more about this idea of probability. Let everyone talk and ask each other a question on what they think is the answer. I will move to the next group but I will be back in 5 minutes.
Student 3: Teacher, we talked about the probability of picking a yellow marble and we decided to put the marbles back in the bag and we practiced taking the marbles out of the bag. We discovered that in pulling all 15 marbles, there were 4 chances in 15 of pulling a yellow marble.
Teacher: Good. From a choice of impossible, likely, unlikely, or certainty, what word could we use to explain the chances of picking a yellow marble?

As noted in the above dialogue with my small group, my intent was to prompt further thought about their discovery and the mathematical ideas relevant to the probability of pulling a yellow marble. I was also interested in the children's ability as described in Silver (1995) to express their opinions, questions, conjectures, and their acquired shared understanding. As the students arrived at a possible solution, I further prompted them to use a table or chart that represented their solution to the probability problem. As described in Silver and Stein (1996), my students experimented with using a visual representation involving fractions to illustrate their increased level of mathematics understanding.

To reiterate, minority, non-English speaking students do bring family knowledge and experience to school. However, Civil (2008) stipulated that traditional school practices that overlook a student's cultural knowledge or native language tend to lessen that student's opportunity for success at learning mathematics and literacy. Gutstein (1996) and Sleeter (1997) found that as educators, we do not know a great deal about how Latino/a parents view their children's at-school mathematics and literacy learning, or of how students' everyday lives connect with school mathematics.

Purpose of the Study

I proposed to conduct an in-depth examination of three Hispanic families to understand the manner in which cultural knowledge, prior experiences, and frames of reference were critical resources in at-home literacy and mathematics learning, and how family-school dialogue could enrich the relevance of at-school learning (Bazron, Osher, & Fleischman, 2005; Ben-Yosef, 2003; Diez-Palomar, Simic, & Varley, 2007; Civil, 2008; Allen, 2008). Bogdan and Biklen (2007) explained that qualitative research in education arose in the 1960s as an accepted research paradigm to expose differences in school practices and to elevate the voices of those often excluded from mainstream America.

By interacting directly with this group of Hispanic families within their homes, I hoped to gain an appreciable understanding of their feelings of alienation or disconnect between them and school; in turn, I hoped these new insights of culturally diverse families would be shared with fellow teachers to help make literacy and mathematics more culturally relevant (Flood, Lapp, Ranck-Buhr, 1995). Gonzalez, Andrade, Civil, and Moll (2001) stated that classroom teachers can learn of the student's daily life experiences and skills [referred to as funds of knowledge] through frequent visits to their student's households. From the home visits, Allen and Labbo

(2001) indicated a level of *confianza* (mutual trust) and a sense of partnership were created between teachers and parents. Ginsberg (2007) noted teachers can show their respect toward families of new immigrants by making home visits, which can help inform educators of the household learning context.

The sense of alienation or disconnect was generally defined as "a lack of knowledge of cultural and societal contexts of second language literacy" (Fitzgerald, 1993, p. 641) or a lack of awareness of parents'/ home approaches to mathematics learning (Civil, 2008). The concept of "*funds of knowledge*" was generally defined as incorporating out-of-school experiences into their mathematics learning (Diez-Palomar, Simic, & Varley, 2006; Reyes & Fletcher, 2003; Gonzalez, Andrade, Civil, & Moll, 2001) and literacy learning (Teale, 2009). As teachers and parents begin to openly communicate and work together to connect school and at home literacy practices, meaningful partnerships can become the framework for promoting student success (Paratore, 2005). Lundgren and Morrison (2003) noted, "Person-to-person communication is the preferred method, preferably through a Spanish-speaking staff person" (p. 92). Vandegrift and Greene (1992) proposed communication between parents and school can be improved by "meeting parents where they are" (p. 59), and replace the expectation of parental involvement with parental support. Similarly, Sobel and Kugler (2007) proposed that in an immigrant-rich environment, traditional approaches to building parental involvement must go beyond business as usual—personal contact must occur, beyond one or two interactions with a faculty member. In forging relationships between the home and school, Evers, Lang, and Smith (2009) stipulated efforts to link classroom literacy learning with the student's home experiences, such as their parent's written stories, could demonstrate a respect and appreciation for families of different cultures. From her ethnographic study with 10 Mexican immigrant families, Valdes (1996)

discussed respect in terms of educators showing an interest for the strength and richness in cultural values and family practices of these new families in the United States. Since this study involved a common culture, language, and life experiences between the Hispanic families and me; and their struggles strongly resonated at the core of my personal belief system; my voice alongside their voice served as a narrator in expressing this important ethnographic account.

Research Questions

As part of this research study, I explored the parents' perspectives via the following research questions. Based on the convergence of themes, drawn from several data collection sources, I revised the following set of research questions to correspond with the prevalent propositions or themes expressed by the Hispanic parents involved in this ethnography study:

1. In what ways were Hispanic parents involved with their child's school to promote literacy learning and communication?

2. How did Hispanic parents view themselves as critical partners in their child's literacy and mathematics learning?

3. What other ways for doing and representing mathematics do households possess to help strengthen the home school connection?

Causes for Misunderstandings or Disconnect Between School and Home

As a tutor for numerous Hispanics desiring to learn the English language, I visited with them in their homes and often interacted with them at school events. Having been raised in a traditional Hispanic household with the Spanish language as the basis for household discourse, I was continually sought by non-English speaking parents who respectfully expressed their sincere desire to participate with their children's academic education. What follows are anecdotal comments from my informal conversations with Hispanic parents:

> Porque no es posible que la escuela no pregunta por nuestra ayuda? Nosotros podemos soportar la escuela también." In their words, "Why doesn't the school ask for our help? We can also support the school." "Tenemos que trabajar muchas horas y hay veces cuando no tenemos el tiempo para ayudar nuestros niños en completar la tarea." In their words, "We often need to work many hours to support our children, and we do not have the time to help our children complete their assigned homework. "Es importante que la maestra obtenga una indicación de la manera que los padres pueden ayudar el niño en sus estudios académicos, porque hay veces que no sabemos cómo ayudar nuestros niños." "It is important that the teacher gain some idea of how the parent can help their child's learning at school because there are times when we do not know how to help our children (Oct. 2007)

Their perceived feelings of "disconnect" between the school and home represented for me an important issue that (as noted earlier) underscored the academic and language acquisition experiences of Hispanic students. Their feelings of alienation were similarly felt by other Hispanic families, not only at schools in the southeastern region but also across all other schools in the United States. The subsequent literature review addressed several factors underlying the "sense of disconnect" or misunderstanding between Hispanic parents and schools.

Chapter 2

Literature Review

Hispanic Parents' Perspectives

Fears, expectations, assumptions of Hispanic parents toward schooling. From their studies on developing parent-teacher partnerships at a school with students of different cultural backgrounds, there were unspoken reasons for non-parental involvement, such as not knowing the English language; not having the skills to support their children's academic learning; being different from other parents; or being afraid of being laughed at (Flood, Lapp, Tinajero, & Nagel, 1995). In her ethnographic study of 10 recent immigrant families from Mexico, Valdes (1996) reported that mothers perceived their role as caring for the moral upbringing of their child; in contrast, the parents viewed the teacher as primarily responsible for their child's education. Gonzalez and Huerta-Macias (1997) addressed the tenuous relationship in border communities between immigrant families and schools, referring for example to a parent who feared that her illegal status in the United States would be discovered when asked to visit her child's school to complete registration or leave an emergency contact number. Pena (2000) identified cultural differences between parents born in the United States and those born in Mexico; for example, in traditional Mexican homes, the mother was expected to stay at home and care for the children.

Parental challenges in supporting their children's literacy and mathematics learning. In research with four Mexican immigrant students within the context of their homes and families, Commins (1989) noted parental involvement was more often affected by the parents' limited English language proficiency versus a work consideration; in turn, the school's practice of sending information home only in the English language led to parents feeling ignored and distant from any connection with the school. From talks with Latino parents and parents in two low-

income Anglo neighborhoods, Finders and Lewis (1994) listened to the parents, whose voices were rarely published, regarding their feelings on being disenfranchised from the school. The researchers remarked the parents' own experiences such as dropping out of school, inflexible work hours, difficulty with the English language, and the inability to connect with what their children were learning at school all combined to produce frustration and separation away from ever participating at the school (Finders & Lewis, 1994). Gorski (2008); Sobel and Kugler (2007) indicated low-income parents did not participate in school functions or volunteer in their children's classrooms because they had less access to school involvement; or they were more likely to work multiple jobs and work evenings. Other reasons given for their non-participation included having jobs without paid leave; not being able to afford child and public transportation; or being overwhelmed by a new culture. Lindeman (2001) emphasized immigrant parents did value education; but, they often worked long or irregular hours, sometimes worked at two jobs, had a fear of formal communication in English, or were confused about coping with educational practices that contrasted with prior learning.

Language barrier at school events. From a year-long case study of an elementary school in Texas, Pena (2000) examined several reasons affecting Mexican-American parental involvement in their child's education such as the English language being the preferred language at most parent meetings and the lack of Spanish translation at such meetings. McCarthey (2000) stipulated that Spanish-speaking parents opted to decline invitations to school meetings when English-Speaking parents were also present. Lundgren and Morrison (2003) cited several reasons to explain the lack of parental participation with their child's school such as prior negative experiences that bordered on racial or linguistic discrimination; the absence of an equal partnership with the school; their own limited education; or the lack of school information about

school policies. Ochoa and Rhodes (2005) offered the following commentary: “Many ELL parents have endured the educational and emotional hardship that often accompanies limited English proficiency and earnestly desire their children to learn English as rapidly as possible” (p. 86). Similarly, Becker (2001) asserted, “If parents do not know how their child’s school functions, what options they have, what the expectations are for their children and for themselves, it will be more difficult for them to participate in their child’s education, let alone to support it” (p. 172). Pena (2000) further explained Hispanics were more likely to cite the attitude of the school principal, classroom teacher, or specialist toward parental involvement as justification for not being involved. Peterson and Haywood (2007) reported teachers and schools characterized immigrant parents as uninvolved in their child’s literacy learning when the parents did not participate in the storybook reading program.

Hispanic parents’ perception of the classroom teacher: source of knowledge. In studies of low-income parents rating the importance of helping their children with academic work, such as reading and mathematics, Drummond and Stipek (2004) indicated Latino parents viewed their role as assisting in their child’s academic learning, especially at the younger ages and ensuring that their children had good relationships with others. Pena (2000) stipulated some Mexican parents restricted their involvement with their child’s education to assisting with their child’s homework or transporting their child to a school function. They assigned to the school the responsibility for their child’s education. Due to differences in income or cultural values, some Latino families were afraid to ask questions of the classroom teacher. In cases where their child had a problem at school, the family blamed themselves instead of looking at school practices as the source of the problem (Lundgren & Morrison, 2003). In their studies regarding parental expectations of North American schools, Anderson and Gunderson (1997) stipulated that many

parents brought their own cultural and school experiences and automatically concluded that their children's teacher was the repository of knowledge which was subsequently imparted to the student. Additionally, many immigrants interpreted learning as a process of rote learning via isolated drill and practice.

Perceived role differentiation between teacher and parent. Drummond and Stipek (2004) indicated that some Latino parents viewed their role as primarily one of supporting the classroom teacher versus actively suggesting ideas or collaborating with the teacher as part of their children's academic learning. Likewise, some Latino families emphasized their children's moral upbringing as the basis for other learning. McCarthey (2000) similarly reported Latino families emphasized the development of autonomous and conforming behaviors and parental monitoring with the classroom teachers viewed as primarily responsible for education. Advocating a slightly different perspective, Saenz and Felix (2007) indicated Spanish-speaking Latino parents carried the traditional view that teachers guided their child's literacy growth; however, Latino parents, with higher levels of education and English language fluency, assumed a greater role in their children's literacy instruction. In their research on the reasons for the limited participation of Latino families in their children's school, Lundgren and Morrison (2003) reported Hispanic families felt it was the school's responsibility to educate their children and the family's job to nurture and meet their basic needs.

High expectations of Hispanic parents for schooling. Whitaker, Salend, and Gutierrez (1997) noted minority parents viewed education as a means for their children to escape the grasp of migrancy and ultimately to be successful in their local community and society. Thus, minority parents viewed homework as a means to improve their children's education and show respect for the teacher's knowledge. However, the need for migrant families to constantly

relocate in order to find employment, and the migrant students' challenge to learn English as a second language reduced their probability for academic success. In recognition of migrant students' transition to many schools or efforts in learning a second language, teachers need to find different ways to incorporate the voices of these families (Whittaker et al., 1997).

Latino families and mathematics learning. Civil, Diez-Palomar, Menendez-Gomez, and Acosta-Iriqui (2008) stated the parents' own experiences, as learners of mathematics, influenced their manner of helping their children; and parents interpreted the level of mathematics taught in Mexico as higher than the United States. Similarly, Civil (2008) noted Mexican parents perceived language as the main obstacle that impeded their children learning mathematics. While offering that Mexican parents may be unaware of school placement policies involving for example language proficiency or mathematics knowledge, it is generally recognized that a child's home environment affects his or her desire to learn mathematics (Sheldon & Epstein, 2005). However, school workshops in mathematics presented only in the English language served little benefit to non-English speaking parents desiring to support their children's success in mathematics. Yan and Lin (2005) argued that Hispanic American's mathematics success was related primarily to parental expectations. However, Hispanic parents often did not know how to help their children succeed at school and because of their own prior education did not want to question the teacher's experience.

Teachers of Hispanic Students' Perspectives

Teacher perspectives and pedagogical practices toward culturally/linguistically diverse families. In their research of minority families, who served as caregivers of their child's literacy experiences at home, Waldbart, Meyers, and Meyers (2006) discussed common assumptions that teachers held of non-majority families. Teachers unknowingly associated

nonparticipation in traditional school literacy activities as non-supportive of their child's literacy skill development; when in fact, such parents were deeply involved and influential in teaching their children; and demonstrated an awareness of their child's academic weaknesses (Waldbart et al. 2006; Peterson & Heywood, 2007; Manyak, 2007). Moll, Amanti, Neff, and Gonzalez (1992) noted children in Mexican households were actively engaged with household chores; used what they knew of the English language to mediate between their parents and local community businesses or schools; and used familiar cultural contexts to take part in activities with people they trust. From research of a Mexican community in northern California, Manyak (2007) discovered that families regularly combined their language skills in Spanish and English when visiting doctor's offices or interpreting tax and immigration documents.

Despite efforts to gain parental involvement of minority families, there were still differences in perspectives between educators and families about school participation (Waldbart, Meyers, & Meyers, 2006). As noted earlier, teachers may not realize that a myriad of challenges keep non-majority families from attending school events, such as a workplace that do not allow immigrant parents to leave work for one or two hours, or a family that has only one car which is utilized by the working parent. McCarthey (2000) indicated teachers are not aware of the cultural differences in literacy practices between parents and school; and such differences in the teaching of children serve as barriers to communication and academic learning. It is also perceived when immigrant parents or parents of low socio-economic status do not take part in established school programs and events, teachers and school administrators conclude it is because these families do not care (Pena, 2000; Peterson, & Heywood, 2007; Sobel & Kugler, 2007). Sobel and Kugler (2007) emphasized immigrant parents care a great deal about their children's education; however, many misunderstand what is expected of parents in U.S. schools or do not know how

to get involved. Similarly, Jimenez (2001) suggested traditional school assumptions of instructional methods and literacy practices of Latina/o students are often inadvertently alienating, that is do not recognize the potential value of ELL students utilizing a bilingual literacy skills approach to learn the curriculum. Epstein and Dauber (1991) stated, "When teachers differ culturally and educationally from their students or when they teach greater numbers of students, they are less likely to know the students' parents and therefore more likely to believe that parents are disinterested or uninvolved" (p. 298).

Teachers' perceptions of parents' native language and out-of-school learning. A related assumption is minority families' native language and culture cannot contribute to their children's literacy development in English; and teachers and principals cannot show a genuine concern for the language and cultural skills that minority-language students bring to school (Peterson & Heywood, 2007). Barillas (2000) also noted many U.S. teachers presume an immigrant parent's inability to speak English precluded helping their child with homework and interfere with the pace at which their child acquires the English language. Reflecting on one of my childhood experiences, in which our entire family traditionally gathered in the living room, adults sitting on one of two sofas while my seven fellow siblings and I sat on the tile floor, to watch the Spanish soap opera.

> During the commercial breaks, our parents asked us questions about what the characters had talked about and what we thought might happen next. Each member of the family took turns summarizing the sequence of events and boldly predicted what might happen next. In turn, other family members responded with questions or comments to the speaker's original ideas. Since our parents had often watched the Spanish soap opera, they were able to assess our level of understanding about the storyline. As I look back on this special family tradition, I now realize that our parents recognized the value of the entire family assembling together, engaging in social dialogue, and openly sharing ones perspective with each other (Aug. 1968).

Pena (2000) indicated teachers are not thoroughly trained on establishing parental involvement, or the additional time require apart from the daily teaching responsibilities preclude meaningful contact with parents. In those instances when parents do not speak English or have limited education, it is much easier to conclude parents would not be able to help their children with schoolwork. Commins (1989) noted, "From the school's point of view, the parent's lack of English hindered them in helping their children academically" (p. 32). Osterling, Violand-Sanchez, and von Vacano (1999) pointed out that immigrant families want to be involved in their children's academic achievement but are often discouraged because their native language is ignored in schools, and their children only wish to communicate at home in the English language.

Deficit Viewpoint of Hispanic Culture and Knowledge

It is widely understood that ignoring a student's native language and cultural knowledge can affect success in the classroom, and how that culturally diverse individual functions within the community at large (Bazron, Osher, & Fleischman, 2005). Gorski (2008) poignantly addressed the concept of deficit theory to highlight how the perpetuation of myths regarding poor families affected the interaction between educators and students. Believing poor people endure poverty, based on their own difficulties or their own refusal to take part in education, served to create classism or a social divide between the privileged class and a working class (Gorski, 2008). The prevalence of the deficit perspective has continued and functions as an obstacle to building home-school connections for low-income families and schools and perceiving the home environment as lacking in ability to support their children's literacy learning. Thus, school teachers have utilized literacy curriculums favoring the more affluent middle class life experiences and lessening the importance of working class experiences (McCarthey, 2000).

Within many school systems, the deficit view presupposed if Latinos would stop speaking in their native language and adopt the English language they would ultimately succeed in school and later in life. In other words, the focus was on what the diverse student did not have rather than appreciating the cultural experiences they brought to the school (Rolon, 2003). Mays (2008) strongly urged educators to capitalize on their ELL students' primary and academic Discourses as one strategy for promoting equity in school learning and thus narrowing the achievement gap.

The Dominant Perspective of Society

The unexamined norm—a subtle factor impeding culturally responsive instruction. Rolon (2002/2003) posed the question, "Does incorporating the culture and language of Latino students into the classroom curriculum seem unnecessary" (p. 43)? With the influx of Latinos and other diverse groups entering our schools, Rolon (2002/2003) stipulated that classroom teachers reflect on their own upbringing and education that may possibly be influencing their willingness toward using culturally relevant instruction to welcome the distinct language, culture, and experiences of such students. Critical Race Theory (CRT) is one plausible explanation to understand the dominance or oppression of one group over another (Ladson-Billings, 1999). Bartlett, McKinley, and Brayboy (2005) suggested, "CRT posits racism is endemic in society and in education, and that racism has become so deeply engrained in society's and schooling's consciousness that it is often invisible" (p. 366). Since storytelling has previously been used to perpetuate the dominant views of mainstream reality in law and education, Ladson-Billings (1999) directed attention to the voice component in CRT as a way to express minority cultural viewpoints and raise racial oppression to the level of social awareness. Ladson-Billings and Tate (1995) emphasized, "The voice of people of color is required for a

complete analysis of the educational system…Without authentic voices of people of color it is doubtful that we can say or know anything useful about education in their communities" (p. 58). In addressing an important aspect of CRT, Dixson and Rousseau (2005) portrayed CRT as a tool to refute negative stereotypes and subliminal [racial] school practices designed to minimize the experiences of those minorities not otherwise heard. Likewise, Ladson-Billings (1999) suggested CRT used race-neutral instructional strategies to legitimize labeling African American students as deficient when teaching strategies did not achieve the desired results. Solorzano and Yosso (2002) introduced the concept of "majoritarian storytelling" to explain the manner in which U.S. educational institutions unknowingly distorted and silenced the experiences of people of color. A closer look at the coverage of cultural groups in U.S. historical accounts indicated "White upper-class and middle-class stories are privileged; whereas the stories of people of color are distorted and silenced" (Solorzano & Yosso, 2002, p. 36). In an effort to overcome the effect of majoritarian stories, designed to sustain assumptions that subordinate all other minority, cultural groups, women, and working class under a white middle class paradigm, Solorzano and Yosso (2002) stressed serious academic discussions must incorporate multiple sources of information that contextualized the unheard histories and lives of people of color and furthered the struggle for racial reform. Thus, CRT may serve as a useful tool for exposing problems of race, racism and social injustice in the classroom and school and to propose radical solutions (Ladson-Billings, 1999). Dixson and Rousseau (2005) asserted it was not sufficient to recount the stories of people of color; the educational experiences portrayed via the stories must be analyzed using a CRT lens; and "The stories must move us to action and the qualitative and material improvement of the educational experiences of people of colour" (p. 13).

A Call for Culturally Responsive Instruction

Disconnect between instructional practices and students' cultural background. Classroom teachers may at times have perceived differences in the behavior of a culturally, diverse student as disruptive to traditional classroom practices. Additionally, teachers may not realize that minority learners may have been previously assigned to low performance groups where rote memorization learning activities were emphasized and a systemic learning environment that reinforced their inability to attain academic success (De La Luz Reyes & Molner, 1991). Schools developing curriculums and programs frequently do not realize that Hispanic children speak a language other than English; must learn to use the English language and an academic vocabulary to succeed in content areas; or bring to school both cultural and linguistic skills essential for understanding academic concepts (Garcia & Jensen, 2007). Reyes and Fletcher (2003) suggested that teachers who feel they have control over their curriculum are more inclined to incorporate various techniques with their classroom practices to enhance learning and have greater success in teaching migrant students. These teachers perceived themselves as innovators and felt responsible for offering their students challenging learning experiences that contributed to their academic success.

Connecting instructional literacy learning with Hispanic culture. One of the reasons schools experience difficulty facilitating the literacy development of Latina/o students is instructional activities are inadvertently alienating, i.e., do not connect with who the students are, what they want, and need to accomplish through literacy (Jimenez, 2001). Linguistically diverse learners, whose cultural background values cooperative behaviors, can benefit from classroom environments that included cooperative learning activities as students have equitable access to the teacher and enjoyed supportive interaction amongst their peer group (De La Luz Reyes &

Molner, 1991). Reyes and Fletcher (2003) indicated a serious concern in mathematics education as migrant students often do not see a connection between at-school mathematics learning and their daily lives. Apart from the abrupt relocation to another community, due to the availability of jobs and daily challenges in acquiring a second language, minority students are often confronted with school curriculums that failed to portray the migrant families' experiences and struggles (Whitaker, Salend, & Gutierrez, 1997). Regarding the nature of literacy instruction that is usually provided for low socioeconomic and ethnic minority children, Zecker, Pappas, and Cohen (1998) indicated such students are more apt to experience rote learning in contrast to collaborative learning experiences in which spontaneous discussions are used as a vehicle for literacy learning. Gutierrez (2001) noted the "one size fits all" policies embedded in the New Literacy movement intentionally exclude linguistically and culturally diverse students from using their primary language to develop English language proficiency. Koskinen and Shockley (1994) stated, "Schools often unintentionally deny families access to school literacy by their rigid adherence to packaged programs such as basals" (p. 500). The net effects are a perpetuation of the myth that families are unable or do not wish to help support their child's academic learning and parental views that only school professionals could teach the highly sophisticated reading work (Koskinen & Shockley, 1994).

Teachers' lack of experience with culturally and linguistically diverse students. Lenski, Ehlers-Zavala, Daniel, and Sun-Irminger (2006), suggested, "Many teachers have little experience with ELLs and may not understand the challenges faced by students in the process of acquiring English" (p. 25). With regard to classroom teachers facing the challenge of providing better literacy instruction to the increasing numbers of ELLs in U.S. public schools, Mohr (2004) explained some teachers require less of their ELLs not because they sanction such an approach

but because they do not know what to do and hope the English as Second Language (ESL) teacher will offer more appropriate instruction. Cummins, Bismilla, Chow, Cohen, Giampapa, Leoni, Sandhu, and Sastri (2005) discussed several strategies such as allowing ELL students to use their home language and cultural knowledge as viable resources during literacy discussions and promoting genuine respect for each student's personal investment in classroom learning. Similarly, Schwarzer, Haywood, and Lorenzen (2003) addressed misconceptions that impede monolingual classroom teachers facilitating linguistic diversity in a classroom in which students speak a language other than English. The researchers highlighted myths such as teachers cannot foster a multiliterate learning community because they do not know other languages; teachers view themselves as the only ones able to teach language in the classroom; or a belief the second language learners' native literacy progress cannot be assessed since the teacher did not understand the student's home language (Schwarzer et al., 2003).

Ethnography—A Lens to Cultural Learning beyond the Classroom

Drawing on Hispanic families' linguistic and cultural diversity. In terms of the question, "How can schools meaningfully engage families in supporting student learning?" Allen (2008) reported that home visits with three families with multilingual students permitted teachers to "Establish a level of "confianza" or mutual trust and to create a spirit of reciprocity in which both parents and teachers support each other and the student" (pp. 22-23). Through the home visits, the teachers learned that all families possessed knowledge, skills, and experiences that could be incorporated with classroom teaching, and the teachers became more knowledgeable about how their students learned outside school (Allen, 2008). In studies regarding the importance of ethnographic studies to better connect their students' lives with school learning, Commins (1989) reported that by viewing the students within the context of their homes and

families, "It was possible to begin to understand their linguistic proficiency, their school performance, and their attitudes about learning and themselves" (p. 30). Similarly, De La Luz Reyes, Laliberty, and Orbanosky (1993) utilized ethnographic data collection methods, i.e. observations, field notes, audiotapes, interviews, writing samples, and videotapes to gain awareness of and sensitivity to the link between culture and language. Moll, Amanti, Neff, and Gonzalez (1992) conducted ethnographic observations, open-ended interviewing, life histories and case studies of household practices amongst Mexican communities in Tucson, Arizona to discover the "funds of knowledge," i.e. the array of cultural and intellectual resources in such homes in an effort to promote connections between home and school. While doing household interviews, a team of one teacher and a researcher realized that the teacher's "special status" with the family was instrumental in building trust necessary for the exchange of information (Moll, Amanti, Neff, & Gonzalez, 1992). In attempting to learn about their local community in Kazakhstan, Landis, Kalieva, Abitova, Izmukhanbetova, and Musaeva (2006) utilized an ethnographic inquiry to address questions such as, "How do people describe their activities? How do they define their roles in local events? What perspectives do they take about the events?" (p. 194). What follows is a discussion of how ethnography will potentially enrich this researcher's perspective of a select group of Hispanic families.

Finders (1992) proposed ethnographies could provide critical lenses through which teachers better realized their own underlying assumptions. In an ethnographic study, the observer entered an unfamiliar social setting; took part in their daily activities; and then as observer-participant recorded in some organized manner the significance of the observations to those being observed (Miles & Huberman, 1994). Similarly, Frank, Arroyo, and Land (2004) noted an ethnographic perspective helped students to view academic school life from their peers'

perspective and understand why different students interacted in particular ways. Finders (1992) further defined ethnography as, "A richly textured description of community life that allows us to understand others on their own terms" (p. 60) and enable us to more vividly conceptualize the homes of students from diverse backgrounds. The ethnographer was mainly concerned with everyday interpretations of life shared by cultural participants and the representation of the insider's view for others not familiar with the participants' setting (Bogdan & Biklen, 2007). In reaching a more detailed understanding about the students' cultural setting, such as home and neighborhood, Finders (1992) asserted teachers could ultimately connect classroom decisions with the student's life experiences. Likewise, Pryor (2004) characterized full ethnographies as "rich descriptions situated within a cultural context and coupled with analyses" (p. 397), and as a research process that explored the culture and its defined ways of everyday interaction.

Thus, the choice of an ethnographic study was chosen because of its potential via recognized methodologies, such as observations and interviews; and description, analysis of cultural themes, and interpretation, for helping me to better understand the day-to-day lives of a group of three Hispanic families to connect with schools and support their children's literacy and mathematics learning (Webb, 2003). Ethnographies cannot solve all of the problems that teachers face; however, ethnographies help to place those problems (and in this case, the connection between schools and Hispanic parents) into contexts (Finders, 1992).

Chapter 3

Research Design and Methodology

Forging New Bridges between Family and School via Ethnographies

Bogdan and Biklen (2007) discussed the paradigms or implicit assumptions of a qualitative research design with the terms, "rich, thick contextual descriptions," and "naturalistic data" to highlight the reflective approach toward data collection. Under this research design, data was collected from field observations as opposed to laboratories; and in an informal manner, the observer collected data from participants as he interacted with individuals in their everyday environment (Bogdan & Biklen, 2007). In contrast to fields of research which drew attention to other's behavior without any concern for the significance of their actions, Emerson, Fretz, and Shaw (1995) expressed their views of ethnographic research and emphasized, "The object of participation is ultimately to get close to those studied as a way of knowing and understanding what their experiences and activities mean to them" (p. 12). In sum, the purpose for conducting ethnographic research was to gain a perspective from the participant's view of ordinary and daily life circumstances through continuous observation and dialogue (Creswell, 2003).

Research Design

Ethnographic Study Approach

I have chosen an ethnographic research design because I was very interested in observing and studying the behaviors of the Hispanic parents in their home setting so that I could learn how to support their children's literacy (Bogdan & Biklen, 2007). In their literature on ethnographic field notes, Emerson, Fretz, and Shaw (1995) explained the ethnographer "Enters a social setting and gets to know the people involved in it" (p. 1). While participating in the ordinary activities of their social world, the ethnographer forms connections with the people in this setting and

constructs written accounts of that world by drawing upon such participation (Emerson, Fretz, & Shaw, 1995). By immersing myself within their everyday lives and by documenting emerging themes, I hoped to gradually understand these three Hispanic families and to view life experiences from their frame of reference (Emerson et al., 1995). Consequently, I proposed to describe their values, beliefs, expectations, and struggles in terms of working with an inner city public school to further their child's education, particularly in language and mathematics learning. This group of three Hispanic families was instrumental to this ethnographic study because they identified with each other, i.e. migrated to the United States within the past four to ten years to provide a better life for their children; they lived and interacted with each other in one community located in a southeastern state; and they shared common expectations for their children's school learning (Bogdan & Biklen, 2007). Collectively, the daily lives of these three Hispanic families were so intertwined in terms of their determination to succeed regardless of the challenges before them; and each family was reflective of a traditional Mexican household in which roles and responsibilities were defined and clearly understood (Valdes, 1996). While teaching their children, tutoring their children after school, helping the parents learn the English language, or making home visits to offer my support, I became more attuned to their persistent and respectful voice; their struggle to find connections within this new country; and their unwavering hope to impart a lasting legacy on their children. These parents were important to my study because in so many words they asked that I serve as their vocal ambassador!

Viewing classrooms from an insider's point of view; understanding the everyday life of a classroom community from the perspective of students and teachers; and thinking about "why" with the goal of gaining a deeper understanding of each other's actions represented the role of the ethnographer (Finders, 1992). Gonzalez, Andrade, Civil, and Moll (2001) noted teacher-

researchers could use ethnographic research design, i.e., interviews and other firsthand experiences to, "tap into the reservoirs of accumulated knowledge and strategies for survival that Latino, African American or Native American households possess" (pp. 116-117). The ethnography sought to clearly portray what its participants considered as their cultural patterns of behavior and was the basis for reflection, interpretation and analysis (Pryor, 2004). In sum, through this ethnographic research study, I discovered the unspoken, critical questions that served as a starting point for implementing change in terms of incorporating the family's cultural knowledge and resources often referred to as the "funds of knowledge" with classroom practices (Moll, Amanti, Neff, & Gonzalez, 1992). Secondly, I learned from the perspective of these parents the areas of confusion and misunderstanding that obstructed connectedness between home and school (Valdes, 1996). Last, I learned new paradigms of instructional practices for supporting school efforts to foster (as noted in Diez-Palomar, Simic, & Varley, 2006) multicultural learning communities that prepared students to make changes in their neighborhood and beyond.

Context for Proposed Study

The researcher's role. My researcher's voice (values, assumptions, and biases) was influenced by various life experiences. I was born in 1955 as the second of five children of Mexican parents who immigrated to the United States in an effort to provide their children a better life. As my parents arranged with my relatives in Tijuana, Mexico, to raise three of my cousins, I was one of eight children raised in a three-bedroom stucco home in East Los Angeles, California. In 1973, at the age of 18, I entered military service and subsequently served a 30-year military career in the United States Air Force, with travel to various stateside assignments on the east and west coast and to several countries, such as Japan, Korea, Germany, Italy, and Turkey.

Following the conclusion of my military career in 2003, I became an elementary school teacher at a K-3 inner city public school in the southeast United States where I taught for over seven years; the school has shown a gradual increase in the population of English Language Learners. Of the 830 enrolled students, there was approximately a 17% English Language Learner (ELL) student population. As I was the only bilingual (English-Spanish) speaking teacher at the elementary school, I was often asked to assist school administrators and fellow teachers to communicate with non-English speaking Hispanic parents. And, for the past three years, I provided English language instruction during after school hours or on weekends to Hispanic parents either at the school or in a trailer or home of a Hispanic family. From the collective sum of experiences, I clearly understood the immense challenge facing Hispanic parents' to support their child's quest to acquire and utilize the English language—an important element in their future success in the United States (Fitzgerald, 1993). In their research on dual language programs for English language learners, Estrada, Gomez, & Ruiz-Escalante (2009) reported, 'ELLs need five to seven years to master English well enough to work as proficiently in English as they could in their native language" (p. 56).

From continuous dialogue with both Hispanic parents and fellow classroom teachers, I have often heard the above plea. Unable to find the appropriate medium for interaction, parents and classroom teachers often feel "disconnected" and thus unable to capitalize on each other's cultural knowledge, skills and experiences as partners in facilitating student learning (Allen, 2008). Many immigrant parents actually desire to participate in their child's schooling; however, often do not know how to get involved or misunderstand what is expected (Sobel & Kugler, 2007). In his research with Mexican immigrants and factors underlying the absence of a home-school partnership, Commins (1989) reported that the parents' work schedule and their limited

English language proficiency have generally led to parental feelings of isolation and alienation from their children's school. Schools have generally interpreted the parent's inability to speak English as a barrier to supporting their child's academic learning. The continuance of this daily reality has affected the second language learners' success in academic and English language acquisition (Goldenberg, 1992/1993; Garcia & Jensen, 2007).

Setting. This six-month study involved home visits with three Hispanic families who lived in the same community; their children attended school in the same school district. The three families resided in a county of approximately 223,510 citizens, located in the southeast region of the United States (2000 U.S. Census Bureau). Within this school district there were 39 elementary schools, 13 middle/junior high schools, and 8 high schools. Some schools were classified as Title I schools because of federal funding provided to assist with economically and educationally disadvantaged students. The children of these Hispanic families attended Greymark Elementary School, Lilac Peterson Elementary School, and Redgrass Elementary School (all school names are pseudonyms). Greymark Elementary and Redgrass Elementary were classified as Title I schools. At present, I did not teach any of these children nor were the children enrolled at my school of employment. As a third grade classroom teacher, I was employed at a K-3 inner city public school with a student enrollment of 750 students. As of the 2009 - 2010 school year, the student enrollment at this inner city public school was comprised of approximately 82% African American; 16% Hispanic; 1% White, and 1% of other cultural ethnicities. With seven years of classroom teaching experience (that included one year as the ELL teacher) at an inner city school composed of a culturally diverse student community, I served as the researcher and ethnographer for this study.

Participants. As noted above, this ethnographic study included three Hispanic families whose children were enrolled at three elementary public schools in one school district. The participating Hispanic parents and their families migrated within the past four to ten years from Mexico to a southeastern state in the United States (Ochoa & Rhodes, 2005). In the majority of cases, the non-English (or limited) speaking Hispanic parents worked about 10 - 12 hours daily [late afternoon to midnight] at poultry processing centers, retail stores, restaurants, or lawn care management. Second, this research study drew additional insight about the connection between Hispanic families and schools and how those relationships facilitated mathematics and literacy learning from a Latino religious leader who has served in this southeast region of the United States for the past 20 years. Born in the country of Ecuador, this religious, community leader served for the past five years as the sole Spanish-speaking minister at a catholic church for Mexican, Guatemalan, Nicaraguan, and South American families. Within this church community, he provided a wide array of church services ranging from baptizing newly born Hispanic children, preparing young teenagers to receive their confirmation, to presiding over funerals for members of Hispanic families who have passed away. He also routinely helped these Hispanic families resolve various problems in adjusting to life in the United States. In speaking with the three Hispanic families chosen for this study, only two families regularly attended his church services. For 15 years, he also worked as a church minister for Hispanic families in a different community, located in this same southeastern region of the United States. Thus, his firsthand interaction with Hispanic families in this community offered this ethnographic study an alternative perspective to the challenges in raising children in the American educational system where English was the predominant language and to the unarticulated fears and misunderstandings of Hispanic families as they have attempted to achieve success in a different

world. Of equal significance to the credibility of this study was the minister's own personal effort to immerse himself in the American culture since migrating from Ecuador to the United States. His personal experiences from his migration to a new country and frequent dialogue with the Hispanic congregation of his church community clarified the data collected from the three Hispanic families. I maintained an ongoing dialogue with this community leader throughout the study because he served as a source of triangulation for the experiences of the Hispanic families and their difficulties. He aided me with the interpretation of my data that I shared with him anonymously (Creswell, 2003).

Data Collection

The goal of this ethnography was to collect detailed information on the perspectives of three Hispanic families with regard to their children's school learning in literacy and mathematics using a variety of data collection types such as observations, interviews, documents, and audiovisual materials. I used my digital camera to take photographs to allow participants to directly share their daily life experiences. Prior to the research study, the three Hispanic families and the religious community leader were given an informed consent letter in Spanish explaining the purpose of the study asking for their participation (see Appendices 1 - 7). As some parents were not fully literate in Spanish reading and writing, I read and explained to them the provisions of the informed consent letter.

Field notes. The ethnographic research study included bi-monthly home visits to the three Hispanic families over a period of two months; the length of each visit were about 30 minutes to an hour on Friday afternoons and for about two hours on weekends. At the beginning of the home visits, I recorded field notes taken during my participation in various settings such as a family dinner, birthday celebration, at-home learning, a group discussion about the day's events,

or use of home resources to complete household projects (Emerson, Fretz, & Shaw, 1995). I recorded immediate, insightful impressions reflective of the household setting and the people within it, such as their living accommodations, the number of occupants, or the roles and responsibilities of the household. Initially, I contemplated the possibility of finding a two-bedroom trailer to be the home of not one but two or three families who recently migrated to the United States; or that the parents' long work hours necessitated that a non-working relative or an older sibling feed, care for, and watch over the little ones. Secondly, field notes captured sensory details (actual words, phrases or dialogue) on a range of incidents or interactions worthy of writing that generate a personal reaction, such as empathy, joy, disgust, sadness or resentment toward observations in the field (Emerson et al., 1995). Emerson et al. (1995) found a third usage of field notes was to go beyond a personal perspective and instead capture those things such as troubles or problems that were of particular importance to the participants studied. By attending to how participants interpreted or responded to those situations, I learned something about "The local knowledge and meanings embedded and expressed in naturally occurring interactions" (Emerson et al., p. 28).

One form of field notes was descriptive with the aim of providing a word picture of the setting, people, actions, and enough conversations of each of the three Hispanic families as observed, while a second form of field notes was a subjective reflection of the observer's personal thoughts, reactions, and even mistakes that occurred during the study (Bogdan & Biklen, 2007; Creswell, 2003). Appendix 12 included a selection of field notes representative of the information exchange between the school and parents, or daily family struggles to support their child's at-home academic learning. After concluding a household visit, I utilized the word-processing functions of my laptop computer and recorded in narrative form the observations such

as family discourse that occurred. The first page of my field notes about a particular observation contained a heading with certain entries such as when the observation was done, who did it, where the observation occurred, and the number of note sets in the total study. In an effort to make my notes useful for analysis, I started a new paragraph to reflect a change such as the topic of a conversation or the entry of a person into the setting, and I left generous margins on the left side of the page for notations and coding. It is Bogdan and Biklen's (2007) contention that the researcher's awareness of the need to write field notes after leaving the setting will compel the researcher to concentrate while gathering evidence. Similarly, the act of note taking encourages the researcher's mind to replay the events, i.e. to internalize what has been observed. Having textualized new understandings and insights, about each Hispanic family's daily lived experiences and connections between themselves and the school, while constructing the field notes, I used those notes as a basis for constructing general interview questions to incorporate during the one-to-one interviews (Emerson, Fretz, & Shaw, 1995).

One-to-one interviews. An interview is an active process in which knowledge is constructed during the interaction between two persons, i.e., the interviewer and interviewee; the interview is an interchange of views on a topic of mutual interest (Kvale & Brinkman, 2009). As noted above, after the recording of field notes, this ethnographic study included three different one-on-one bilingual, 20 to 30 minute audio-taped interviews with the parents of each family. The interviews focused on an emergent issue that addressed the research questions, such as finding ways to communicate with the school teachers and administrators or connecting with their child's teacher to make school learning culturally relevant to their child. The first of these interviews started in the second month, and the interviews continued into the third and fourth months of this study. These one-to-one interviews were conducted during various family settings

as noted in the previous paragraph. In this research study, I used an audio-cassette recorder with a built in microphone. These interviews generally involved a few unstructured, open-ended questions designed to elicit ideas and opinions from the parent (see Appendices 8 – 9) (Creswell, 2003).

Focus group interviews. Later in this study, after having collected data and refined my thinking about literacy and mathematics learning, within the context of their homes and families (Commins, 1989), I conducted a single 45-minute to one-hour focus group interview with multiple members, in each of the three Hispanic families in their homes, to gather emerging views of their voice on the home-school partnership. A focus group usually consists of a small number of participants led by a group moderator and characterized by a non-directive style of interviewing in which the primary aim is to elicit a variety of personal and conflicting viewpoints on the topic in focus for the group (Kvale & Brinkmann, 2009), with the interaction typically characterized by spontaneous and emotional statements about the topic under discussion (Kvale, 1996). In particular, we examined issues of respect, communication, and trust that influenced building bridges between parents and school. The strength of this partnership increased the prospect that Hispanic families and their children were successful in acquiring critical literacy skills in language and mathematics. These interviews also generally involved a few unstructured, open-ended questions designed to elicit ideas and opinions from the parent (Creswell, 2003). (see Appendices 10 - 11)

To reiterate, a series of field notes, bilingual informal interviews, and one bilingual focus group discussion in each family were used to obtain responses to general questions before moving to more specific questions that related to strengthening the parent-school connection. As noted above, the recording of field notes was taken in conjunction with my simultaneous

participation in daily family activities. I also looked at various exemplars of documents that these Hispanic parents received from schools, and what notes or correspondence they sent back to the school. I also took photographs because they offered an extensive amount of descriptive data to aid in the recollection of what I observed and to help me understand "how the participants defined their world; what they took for granted; and what they assumed was unquestionable" (Emerson, Fretz, & Shaw, 1996, p. 145). As part of our dialogue, the parents and I looked at how communication between the home and school might be improved such as through bilingual correspondence, bilingual school assemblies, parent-teacher workshops, bilingual parent-teacher journals, or culturally relevant teaching practices designed to acknowledge and incorporate at home practices in mathematics and literacy learning.

Analysis and Interpretation of Data

Categorizing evidence in order to answer the original aim of the study allowed me to look for certain words, phrases, patterns of behavior, subjects' ways of thinking, and repetitive events that could possibly be sorted under particular coding categories. Emerson et al. (1995) aptly noted, "Coding begins with the ethnographer mentally asking questions of specific pieces of field note data" (p. 146). The authors further explained that the secret of coding rests in transforming the answers into a particular style of writing—a word or a phrase—that connects a piece of data to a more general analytic issue (Emerson et al). I have included an extract of field notes with marginal codes that suggested a link between themes (see Appendix 12).

Open coding defines the researcher's effort to make sense of the collected data and organize it into discrete categories with the goal of creating groups of data that represent a meaningful spectrum of perspectives and behaviors observed (Kvale & Brinkman, 2009). As an example of contextualizing data, I found the recurring use of the term, "Respeto" meaning

respect but also reflecting the expected behavior or personal regard for all members of a Mexican family (Valdes, 1996). Examples of coding categories might be setting or context codes, perspectives held by subjects, subject's way of thinking about people and objects, activity codes, and narrative codes.

After data, such as field notes, transcripts, or other documents were reviewed and systematically organized, I analyzed and interpreted the data to see emerging patterns of behavior, and how these emerging constructs were associated with the literature and to larger community or social issues (Bogdan & Biklen, 2007). The process of coding and recoding was completed when observed incidents had been categorized, coding categories had been thoroughly saturated, and a sufficient number of repetitive behavioral patterns had been identified (Miles & Huberman, 1994) (See Appendix 13).

A narrative style of writing was used to report the results of my study. Within the narrative passage, I provided a detailed discussion of several themes that included sub-themes, specific illustrations, and multiple perspectives, for example from family members, quotations, and a discussion about the interconnection between themes. Drawing from research of Finders and Lewis (1994), who wrote about why parents were not involved in school, my findings prompted me to organize my ideas beginning with a heading such as "Barriers Affecting the Parent-School Connection" followed by minor themes on differences between parent's school experiences and current classroom teaching; work schedules and participation in school events; and misunderstandings between school and family cultural practices.

I also took the written research report that included quotations from interview transcripts back to my interview participants as part of the member-checking process to increase accuracy of the final report. In their exploratory study on the use of participants' perspectives on verbatim

quotations, Corden and Sainsbury (2006) noted, "Research participants preferred the version of the report which included spoken words, and saw ways in which spoken words contributed positively to interpretation and reporting" (p. 97). However, in the use of verbatim quotations, the authors highlighted several important considerations, such as participants (especially those who might not be able to read) actually understanding how their spoken words were used, or the way participants, for example minorities viewed themselves being represented through their spoken words. I balanced the need for conveying clarity against the expectation for presenting an accurate portrayal of the participant's actual use of words crucial to depict the speaker's emotional state or mood.

As a consequence of this ethnographic study, I brought the collected data together, framed the data in relation to theory, and then explained the significance of my findings to fellow educators. What follows is a general outline of steps that I performed as part of this study. First, I used my initial household visit and three other visits to move from a general review of the issues affecting the parent-school connection to a narrow focus of the settings, conditions, and participants that contributed to the mathematics and literacy learning of their children. As I narrowed my perspective of the parent-school connection, I decided to construct a detailed description of the at-home literacy and mathematics learning. Second, as I proceeded in my study, I decided which general research questions, from my initial list, were relevant and which ones were revised to guide my subsequent research. These research questions were critical because they guided my efforts in gaining a deeper understanding of the families' setting and the context in which household interactions and events occurred. Third, I regularly examined my field notes as one strategy to identify leads or pending questions in a particular setting, activity, or interview and thus strengthen the significance of the inquiry. In conjunction with field notes, I

recorded observer comments that reflected my thoughts, refined understanding, and an interpretation about the ideas that I recorded and experienced. One other piece of written note-taking that I used was one- or two- page summaries that served as anchors between various observations. Finally, after recording various pieces of data, visual devices such as diagrams, tables, and graphs helped summarize the relationship between participants and their perspectives and captured events significant to the people in the study.

Ethical considerations

Drawing from Bogdan and Biklen's (2007) research on ethical considerations, the following safeguards were used to protect the identity and rights of all participants.
The research objectives were articulated verbally and in writing for the Hispanic parents and the religious leader so that they were clearly understood. This information was presented in Spanish, the native language of the Hispanic parents.

1. Prior to proceeding with the research study, I obtained written permission from each participant.

2. I submitted an Institutional Review Board (IRB) proposal at Auburn University. The proposal included consent forms which were approved prior to the start of my research. The proposal also addressed ethical concerns involving breach of confidentiality and under-age children.

3. I advised participants of all data collection devices and activities.

4. Verbatim transcriptions and written interpretations and reports were made available to each informant.

5. I considered each informant's rights, interests and wishes prior to making decisions on data reporting.

Reporting the Findings

What follows then is a synopsis of the research methodology:

Data collection strategies. Data was collected from April through July, 2010. Starting in the first month of this study, I conducted bi-monthly, 30 minute to one-hour observations of the three Hispanic households followed by the writing of field notes. Photography of household activities was used to supplement the recording of field notes. Between March and June, I conducted three, 45-minute to one hour, one-to-one bilingual audio-taped interviews with each family. After the collection of initial data (from interviews, observations, field notes and so forth), I conducted 45-minute to one hour focus group discussions in Spanish with members of each family. I used the emergent data and ideas from the previously mentioned data sources and the focus group discussions to learn more and gain a deeper understanding of the issues presented by the three Hispanic families (Kvale & Brinkmann, 2009). Continuous dialogue with a religious, community leader was also included. I chose to visit three different Mexican family households to draw on various perspectives regarding the family-school connection. Additionally, I used an external auditor, a professor at a different university and new to this research investigation to provide an assessment of the research methodology and findings at the conclusion. I maintained an electronic field journal to record notes of my experiences, perspectives, questions, and reactions. To organize and prepare the data for analysis, I transcribed verbatim the audio-taped one-to-one and focused group interviews; typed field notes, and sorted the data based on where I collected the information such as at the kitchen table, local grocery store, or in a family room. Field notes and daily entries in my electronic field journal were reviewed regularly.

Data analysis procedures. In recognition that subjective interpretations of life experiences and perceptions of home-school connections were addressed, I used triangulation, i.e., gained corroboration of themes from multiple data sources. Second, I used member checking and provided the Hispanic families and the religious community leader the opportunity to offer feedback regarding the Spanish version of written interview notes ensuring that my perspectives accurately corresponded with the contextual meaning intended prior to converting the interview notes to the English language. Third, I conducted visits to three Hispanic households for four months. The intent was to collect enough information from the three families and the community leader to answer the original research questions and to render rich, thick descriptions of the setting and the shared experiences. Fourth, I created a coding system of words and phrases to represent those patterns or regularities in the data and to create a physical separation from the other data. Fifth, I utilized the intent of peer debriefing and collaborated with a member of my advisory planning committee so that a neutral perspective examined, analyzed and interpreted the data findings.

Chapter 4

Abstract: There is limited research concerning bilingual classroom teachers who conduct household visits of non-English speaking Hispanic families. The author and teacher explored (a) ways that three Hispanic families were involved with their children's school to promote mathematics and language literacy learning and communication; and (b) how these Hispanic parents viewed themselves as critical partners in their child's literacy learning. Findings from four months of household visits involving interviews, observations, and analysis of student schoolwork indicated the parents hoped for a home-school partnership based on mutual respect and trust; parents desired that their child's family and cultural experiences be incorporated in classroom learning; older siblings often served as language brokers between their non-English speaking parents and younger siblings during at home learning; and parents and children often code-switched when communicating with each other during at-home learning and in making sense of school correspondence. Based on data collected during household visits, this paper provides recommendations for improving home-school partnerships with Hispanic immigrants.

Building a trusting relationship—
Appreciating the linguistic and cultural influence of three Hispanic families on school learning

Introduction

> In reality, most immigrant parents care intensely, but many misunderstand what is expected of parents in U.S. schools or do not know how to become involved (Sobel & Kugler, 2007, p. 63).

Increasingly, significant numbers of linguistically diverse families are migrating to the United States; and their children are entering schools across the country with the hope of acquiring competency in the English language while gaining access to relevant academic experiences (Rolon, 2002/2003; Garcia & Jensen, 2007; Osterling, Violand-Sanchez, & von Vacano, 1999). Yopp and Stapleton (2008) suggest, "Educators face an unprecedented challenge as English Language Learners in public pre-kindergarten through 12th grade schools number more than 5 million, or 10.1% of the total enrollment" (374). These numbers are up nearly 100 percent from a decade earlier (Short & Echevarria, 2004/2005). Mays (2008) reiterated an alarming trend, "As the minority population in the United States continues to grow, the rapidly increasing epidemic of students left behind is one of grave concern for early childhood educators nationwide" (p. 415). With the dramatic increase in Hispanic students with limited or no English

language skills, teachers must address a fundamental issue, which is establishing a relationship with parents in an effort to promote literacy learning amongst their children (Bazron, Osher, & Fleischman, 2005; Fitzgerald, 1993).

Hispanic immigrant parents new to the United States with limited or no English language fluency greatly appreciate the opportunity to establish a respectful, trusting relationship with their child's school and classroom teacher in which each other's perspectives of education and strengths are valued (Gonzalez, & Huerta-Macias, 1997). Unable to find the appropriate medium for interaction, parents and classroom teachers often feel "disconnected" and thus unable to capitalize on each other's cultural knowledge, skills and experiences as partners in facilitating student learning (Allen, 2008). Certainly as parents and teachers work together, opportunities grow for stakeholders to grow comfortable with one other while openly talking with each other about ways to support their child's literacy activities at home (Risko, & Walker-Dalhouse, 2009). In studies with children of Mexican culture, Rothstein-Fisch, Greenfield, and Elise-Trumbell (1999) noted, "When teachers understand and respect the collectivistic values of immigrant Latino children, the opportunities for culturally informed learning becomes limitless" (p. 66).

In research with four Mexican immigrant students within the context of their homes and families, Commins (1989) noted parental involvement was often more affected by the parent's limited English language proficiency versus a work consideration; in turn, the school's practice of sending information home only in the English language led to parents feeling ignored and distant from any connection with the school. Immigrant parents do value education; however, they are often unable to participate in school functions or volunteer in their child's classroom due to long or irregular work hours; a fear of formal communication in the English language; unable to afford child or public transportation; or are confused about educational practices that contrast

with prior learning. (Lindeman, 2001; Gorski, 2008; Sobel & Kugler, 2007). Lundgren and Morrison (2003) cited several reasons to explain the lack of parental participation with their child's school such as prior negative experiences that bordered on racial or linguistic discrimination; the absence of an equal partnership with the school; their own limited education; or the lack of information about school policies. In many instances, while immigrant parents do care about their child's school learning they choose not to because they are simply unaware of what is expected of them, or from their own cultural upbringing have learned that to question a teacher's instructional ways is to show disrespect (Sobel, & Kugler, 2007). Ochoa and Rhodes (2005) suggested, "Many ELL parents have endured the educational and emotional hardship that often accompanies limited English proficiency and earnestly desire their children to learn English as rapidly as possible" (p. 86). Similarly, Becker (2001) stated, "If parents do not know how their child's school functions, what options they have, what the expectations are for their children and for themselves, it will be more difficult for them to participate in their child's education, let alone support it" (p. 172).

Lindeman (2001) noted that nonnative parents, with children in US schools, may feel confused, troubled, and uncertain in attempting to respond to educational practices different from their own cultural upbringing. However, educators can choose to experiment with innovative ways to acknowledge the rich, cultural diversity and strengths that their students of immigrant families bring to the classroom (Lindeman, 2001), while reexamining traditional instructional practices (Garcia, 1999; Howe, 1994). Classroom teachers can explore different opportunities to build deeper relationships with parents, such as making household visits; assisting students with an out-of-school photography project; or exchanging a home-school reading journal. These opportunities engage parental involvement while sharing and understanding cultural differences

as the springboard for addressing the critical social responsibility of meeting the unique learning needs of each student (Allen, 2008). From research of school-family-community relationships, Sanders (1996) stipulated, "Partnerships can enhance students' learning and the ability of families to assist in that learning" (p. 61). Consequently, as classroom teachers explore ways to develop a home-school partnership with Hispanic parents, there must be a better knowledge of the unspoken reasons that Hispanic parents do not participate in school functions (Flood, Lapp, Tinajero, & Nagel, 1995). .

In recognition of the immense growth of the Latino community within public schools across the United States, classroom teachers must make the effort to discover more of their student's cultural background, primary language and family literacy experiences thus validating the voices of all students and the construction of classroom learning (Rolon, 2002/2003; Ben-Yosef, 2003). Likewise, teachers and parents who share knowledge of literacy activities such as home-response journals or reading experiences that occur at home and in the classroom can benefit the child's reading acquisition and allow parents the chance to express their own beliefs, strategies, and insights about literacy learning at home (Darling, 2005; Fisher, 2001; Koskinen & Shockley, 1994). Classroom teachers will gain an important lens through which schools view the contextual setting that underlies the student's literacy learning at home. By working together, school and home knowledge become complementary serving a framework for helping raise student achievement (McIntyre, Kyle, Moore, Sweazy, & Greer, 2001).

Consequently, the purpose of this ethnographic research study was to establish a level of "confianza" meaning mutual trust with three Hispanic families via household visits over a period of four months with the aim of discovering how the family's cultural and linguistic knowledge, skills and experiences contribute to their child's out-of-school literacy learning (Allen, 2008).

By interacting directly with this group of Hispanic families within their homes, an appreciable understanding of their feelings of alienation or disconnect between them and the school was acknowledged providing new insights of culturally diverse families to make literacy more culturally relevant (Flood, Lapp, & Ranck-Buhr, 1995). By being part of their everyday lives—their social setting; talking with family members in their native language; and making meaningful connections with these Hispanic families, I learned their frame of reference. By documenting and identifying emerging themes during the household visits, it provided understanding in the ways in which these Hispanic families interacted with their children's school to facilitate literacy learning and communication; viewing themselves as partners in their children's literacy learning (Emerson, Fretz, & Shaw, 1995).

Review of Literature

Teacher: Source of Knowledge

Minority parents view education as a means for their children to remove themselves from the grasp of migrancy and ultimately to be successful in their local community and society; thus, minority parents view homework as a means to improve their children's education and show respect for the teacher's knowledge (Diaz, Trotter, & Rivera, 1989). In studies of 234 low-income parents rating the importance of helping their children with academic work, such as literacy, Drummond and Stipek (2004) indicated Latino parents viewed their role as assisting in their children's academic learning, especially at the younger ages and ensuring that their children had good relationships with others. Pena (2000) stipulated some Mexican parents restrict their involvement with their children's education to assisting with their children's homework or transporting their children to school functions and delegating to the school the responsibility for their children's education. Due to differences in income or cultural values, some Latino families

may be afraid to ask questions of the classroom teacher. In cases where their children have a problem at school, the family may blame themselves instead of looking at school practices as the source of the problem (Lundgren & Morrison, 2003). Drummond and Stipek (2004) indicated that some Latino parents viewed their role as one of supporting the classroom teacher versus suggesting ideas or collaborating with the teacher as part of their children's academic learning; and some Latino families emphasized their children's moral upbringing as the basis for other learning. Conversely, Saenz and Felix (2007) indicated that Spanish-speaking Latino parents carried the traditional view that teachers guided their children's literacy growth; however, Latino parents, with higher levels of education and English language fluency, assumed a greater role in their children's literacy instruction.

Perceived role differentiation between teacher and parent. Despite efforts to gain parental involvement of minority families, there are still differences in perspectives between educators and families about school participation (Waldbart, Meyers, & Meyers, 2006). Teachers may unknowingly associate nonparticipation in traditional school literacy activities as non-supportive of their children's literacy skill development; when in fact, such parents were deeply involved and influential in teaching their children; and the parents demonstrated an awareness of their children's academic weaknesses (Waldbart et al., 2006; Peterson & Heywood, 2007; Manyak, 2007). It was also perceived, when immigrant parents or parents of low socio-economic status, did not take part in established school programs and events, teachers and school administrators concluded it was because these families did not care (Pena, 2000; Peterson & Heywood, 2007; Sobel & Kugler, 2007). Sobel and Kugler (2007) emphasized that immigrant parents care a great deal about their children's education; however, many misunderstand what is expected of parents in U.S. schools or do not know how to get involved. A related assumption

on the differences in viewpoint between schools and families is that the minority families' native language and culture cannot contribute to their child's literacy development in English. However, teachers and principals can show a genuine concern for the language and cultural skills that minority-language students bring to school (Peterson & Heywood, 2007). Barillas (2000) also noted that many U.S. teachers presumed an immigrant parent's inability to speak English precluded helping his/her children with homework and interfered with the pace at which his/her child acquired the English language. The continuance of this daily reality affected the second language learners' success in academic and English language acquisition (Goldenberg, 1992/1993; Garcia & Jensen, 2007). In research focused on the cultural context of out-of school learning of Hispanic children, Moll, Amanti, Neff, and Gonzalez (1992) noted that children in Mexican households were actively engaged with household chores; using what they knew of the English language to mediate between their parents and local community businesses or schools; and using familiar cultural contexts to take part in activities with people they trusted. For example, in research of a Mexican community in northern California, Manyak (2007) discovered that families regularly combined their language skills in Spanish and English when visiting doctor's offices or interpreting tax and immigration documents.

Connecting literacy and learning to Hispanic culture. McCarthey (2000) indicated that teachers were not aware of the cultural differences in literacy practices between parents and school; and such differences in the teaching of children served as barriers to communication and academic learning. Classroom teachers at times perceived differences in the behavior of a culturally, diverse student as disruptive to traditional classroom practices. Additionally, teachers may not realize minority learners may have previously been assigned to low performance groups where rote memorization learning activities were emphasized and a systemic learning

environment that reinforced their inability to attain academic success (De La Luz Reyes & Molner, 1991). Furthermore, the classroom teacher may not fully grasp how the need for migrant families to constantly relocate in order to find employment and the migrant students' challenge to learn English as a second language reduces their probability for academic success. In recognition of migrant students' transition to many schools or efforts in learning a second language, teachers need to find different ways to incorporate the voices of these families (Whittaker, Salend, & Gutierrez, 1997).

Apart from the abrupt relocation to another community due to the availability of jobs and daily challenges in acquiring a second language, minority students were often confronted with school curriculums that failed to portray the migrant families' experiences and struggles (Whitaker, Salend, & Gutierrez, 1997). Garcia and Jensen (2007) reported that schools, developing curriculums and programs, frequently do not realize that Hispanic children speak a language other than English; must learn to use the English language and an academic vocabulary to succeed in content areas; or bring to school both cultural and linguistic skills essential for understanding academic concepts. Generally speaking, the nature of literacy instruction that is usually provided for low socioeconomic and ethnic minority students is more apt to involve rote learning versus collaborative learning experiences in which spontaneous discussions are used as a vehicle for literacy learning (Zecker, Pappas, & Cohen, 1998). In their research regarding the effect of incorporating the student's native language and cultural knowledge in the classroom, Jimenez (2001) stipulated that traditional school assumptions of instructional methods and literacy practices of Latina/o students ar often inadvertently alienating. Often, classroom norms fail to recognize the potential value of ELL students utilizing a bilingual literacy skills approach to learn the curriculum. Within many school systems, there is a prevailing notion that if Latinos

stopped using their native language and adopted the English language they would ultimately succeed in school and later in life. In some instances there may be a subtle, pervasive racism that influences classroom teachers to deliberately exclude linguistically and culturally diverse students from using their primary language to develop English language proficiency (Rolon, 2002/2003; Ladson-Billings, 1999; Bartlett & Brayboy, 2005). In addressing the adverse effects of a "one size fits all" literacy policy, Koskinen and Shockley (1994) stated, "Schools often unintentionally deny families access to school literacy by their rigid adherence to packaged programs such as basals" (p. 500). In view of the concern for the dominance or oppression of one cultural group over another, Mays (2008) strongly urged educators to capitalize on their ELL students' primary and academic Discourses as one strategy for promoting equity in school learning and thus narrowing the achievement gap.

To reiterate the point concerning the home-school connection, teachers may not be thoroughly trained on establishing parental involvement or the additional time required apart from the daily teaching responsibilities may preclude meaningful contact with parents. In those instances when parents do not speak English or have limited education, it may be much easier to conclude that parents would not be able to help their children with schoolwork (Pena, 2000). Commins (1989) noted, "From the school's point of view, the parent's lack of English hindered them in helping their children academically" (p. 32). Epstein and Dauber (1991) stated, "When teachers differ culturally and educationally from their students or when they teach greater numbers of students, they are less likely to know the students' parents and therefore more likely to believe that parents are disinterested or uninvolved" (p. 298).

Drawing on a five-month qualitative research study, involving interviews and observations in four school districts with large student populations of migrant students, Lopez, Scribner, and

Mahitivanichcha (2001) examined several effective parental involvement programs with the aim of identifying successful strategies and practices for implementation at other schools. Using a semistructured interview protocol encompassing 12 group interviews and 5 individual interviews, the researchers reached several important findings. These findings reflected investments in building a home-school connection such as recognizing the family's social, economic, and physical needs; gaining an insider perspective with the migrant experience; showing a sincere commitment to migrant families and their needs; and creating relationships based on trust and communication.

Purpose of the Study

The purpose of this study was to conduct an in-depth study of three Hispanic families to understand the manner in which cultural knowledge, prior experiences, and frames of reference were critical resources in at-home literacy learning, and how family school dialogue could enrich the relevance of at-school learning (Bazron, Osher, & Fleischman, 2005; Ben-Yosef, 2003; Diez-Palomar, Simic, & Varley, 2007; Civil, 2008; Allen, 2008). Gonzalez, Andrade, Civil, and Moll (2001) stated that classroom teachers can learn of the student's daily life experiences and skills [referred to as the funds of knowledge] through frequent visits to their student's household. Ginsberg (2007) noted that teachers can show their respect toward families of new immigrants by making home visits, which can help inform educators of the household learning context. The sense of alienation or disconnect will be generally defined as "a lack of knowledge of cultural and societal contexts of second language literacy" (Fitzgerald, 1993, p. 641). As teachers and parents begin to openly communicate and work together to connect school and at home literacy practices, meaningful partnerships can become the framework for promoting student success (Paratore, 2005). In forging relationships between the home and school, Evers, Lang and Smith

(2009) stipulated efforts to link classroom literacy with the student's home experiences, such as their parent's written stories can demonstrate a respect and appreciation for families of different cultures. As part of this research study, I explored the parents' perspectives via the following research questions:

1) In what ways were Hispanic parents involved with their children's school to promote literacy learning and communication?

2) How did Hispanic parents view themselves as critical partners in their children's literacy learning?

Context for Proposed Study

An Ethnographic Approach: Forging New Bridges between Family and School via Ethnographies

Bogdan and Biklen (2007) discussed the paradigms or implicit assumptions of a qualitative research design with the terms, "rich, thick contextual descriptions," and "naturalistic data" to highlight the reflective approach toward data collection. Under this research design, data was collected from field observations as opposed to laboratories; and in an informal manner, the observer collected data from participants as s/he interacted with individuals in their everyday environment (Bogdan & Biklen, 2007). In contrast to fields of research, which drew attention to other's behavior without any concern for the significance of their actions, Emerson, Fretz, and Shaw (1995) expressed their views of ethnographic research and emphasized, "The object of participation is ultimately to get close to those studied as a way of knowing and understanding what their experiences and activities mean to them" (p. 12). The purpose for conducting ethnographic research was to gain a perspective from the participant's view of ordinary and daily life circumstances through continuous observation and dialogue (Creswell, 2003).

Drawing on Hispanic families' linguistic and cultural diversity. Allen (2008) reported that home visits with three families with multilingual students "permitted teachers to establish a level of "confianza" or mutual trust and to create a spirit of reciprocity in which both parents and teachers support each other and the student" (pp. 22-23). Commins (1989) addressed the importance of ethnographic studies in order to better connect students' lives with school learning and explained that by viewing the students within the context of their homes and families, "it was possible to begin to understand their linguistic proficiency, their school performance, and their attitudes about learning and themselves" (p. 30). Finders (1992) proposed ethnographies could provide critical lenses through which teachers better realized their own underlying assumptions.

Thus, I chose an ethnographic research design because I was very interested in observing and studying the behaviors of the Hispanic parents in their home setting so that I could learn how to support their children's literacy (Bogdan & Biklen, 2007). This group of three Hispanic families was instrumental to this ethnographic study because they identified with each other, i.e., migrated to the United States within the past four to ten years to provide a better life for their children; they lived and interacted with each other in one community located in a southeastern state; and they shared common expectations for their children's school learning (Bogdan & Biklen, 2007). Collectively, the daily lives of these three Hispanic families were so intertwined, in terms of their determination to succeed regardless of the challenges before them; and each family was reflective of a traditional Mexican household in which roles and responsibilities were defined and clearly understood (Valdes, 1996). While teaching their children, tutoring their children after school, helping the parents learn the English language, or making home visits to offer my support, I also became more attuned to the parents' persistent and respectful voice; their

struggle to find connections within this new country; and their unwavering hope to impart a lasting legacy on their children. These parents were important to my study because in so many words they asked that I serve as their vocal ambassador!

The researcher's role. My researcher's voice (values, assumptions, and biases) was influenced by various life experiences. I was born in 1955, as the second of five children, of Mexican parents who immigrated to the United States in an effort to provide their children a better life. As my parents arranged with my relatives in Tijuana, Mexico, to raise three of my cousins, I was one of eight children raised in a three-bedroom stucco home in East Los Angeles, California. In 1973, at the age of 18, I entered military service and subsequently served a 30-year military career in the United States Air Force, with travel to various stateside and overseas locations. Following the conclusion of my military career in 2003, I became an elementary school teacher at a K-3 inner city public school in the southeast United States where I taught for seven years [the first year as an English as a Second Language teacher and the last six years as a third grade teacher]; the school has shown a gradual increase in the population of English Language Learners. Of the 830 enrolled students, there was approximately a 17% English Language Learner (ELL) student population. As I was the only bilingual (English-Spanish) speaking teacher at the elementary school, I was often asked to assist school administrators and fellow teachers to communicate with non-English speaking Hispanic parents. And, for the past three years, I provided English language instruction during after school hours or on weekends to Hispanic parents either at the school, in a trailer community or private home of a Hispanic family. Additionally, I did not teach any of children involved in this research study, nor were the children enrolled at my school of employment. From the collective sum of experiences, I clearly understood the immense challenge facing Hispanic parents' to support their children's quest to

acquire and utilize the English language—an important element in their future success in the United States (Fitzgerald, 1993). In their research on dual language programs for English language learners, Estrada, Gomez, and Ruiz-Escalante (2009) reported, "ELLs need five to seven years to master English well enough to work as proficiently in English as they could in their native language" (p. 56).

Setting. This four-month study involved home visits with three Hispanic families who lived in the same community; their children attended school in the same school district. The three families resided in a county of approximately 223,510 citizens, located in the southeast region of the United States (2000 U.S. Census Bureau). Within this school district there were 39 elementary schools, 13 middle/junior high schools, and 8 high schools. Some schools were classified as Title I schools because of federal funding provided to assist with economically and educationally disadvantaged students. The children of these Hispanic families attended Greymark Elementary School, Lilac Peterson Elementary School, and Redgrass Elementary School (all school names were pseudonyms). Greymark Elementary and Redgrass Elementary were classified as Title I schools. As of the 2009 - 2010 school year, the student enrollment at this inner city public school were comprised of approximately 82% African American; 16% Hispanic; 1% White, and 1% of other cultural ethnicities. With over seven years of classroom teaching experience (that included one year as the ELL teacher) at an inner city school composed of a culturally diverse student community, I served as the researcher and ethnographer for this study.

Participants. The three sets of participating Hispanic parents and their families migrated within the past four to ten years from Mexico to a southeastern state in the United States (Ochoa & Rhodes, 2005). In the majority of cases, the non-English (or limited) speaking Hispanic

parents worked about 10 - 12 hours daily [late afternoon to midnight] at poultry processing centers, retail stores, restaurants, or lawn care management. Second, this research study drew additional insight about the connection between Hispanic families and schools, and how those relationships facilitated mathematics and literacy learning from a Latino religious leader who has served in this southeast region of the United States for the past 20 years. Born in the country of Ecuador, this religious, community leader has served for the past five years as the sole Spanish-speaking minister at a catholic church for Mexican, Guatemalan, Nicaraguan, and South American families. Within this church community, he has provided a wide array of church services ranging from baptizing newly born Hispanic children, preparing young teenagers to receive their confirmation, to presiding over funerals for members of Hispanic families who have passed away. He also routinely helped these Hispanic families resolve various problems in adjusting to life in the United States. In speaking with the three Hispanic families chosen for this study, only two families regularly attended his church services. For 15 years, he also worked as a church minister for Hispanic families in a different community, located in this same southeastern region of the United States.

Methodology

Data Collection and Analysis

Interview process. Data was collected from April through July, 2010 while conducting visits to three Hispanic households and the religious, community leader. The intent was to collect enough information from the three families and the religious, community leader to answer the original research questions prompting this study and to render rich, thick descriptions of the setting and the shared experiences. I used my initial three household visits to move from a general review of the issues affecting the parent-school connection to a narrow focus of the

settings, conditions and participants that contributed to the mathematics and literacy learning of their children. During the first month of this study, I conducted weekly, one-hour to three-hour observations of the three Hispanic households followed by the writing of field notes. It is Bogdan and Biklen's (2007) contention that the researcher's awareness of the need to write field notes after leaving the setting would compel the researcher to concentrate while gathering evidence; similarly, the act of note-taking encouraged the researcher's mind to replay the events, i.e. to internalize what was observed. The field notes were taken during my participation in various family settings, use of home resources to complete school assignments, or group discussions either with the parents or their children about the day's events. I regularly examined the field notes as one strategy to identify leads or pending questions that should guide my focus in a particular setting, activity, or interview and thus strengthen the significance of this research study (Emerson, Fretz, & Shaw, 1995). In conjunction with the field notes, I recorded observer comments that reflected my thoughts, refined understanding, or perhaps an interpretation about the ideas that I had recorded and experienced. I also used those notes as a basis for constructing general interview questions to incorporate during the one-to-one interviews (Emerson, Fretz, & Shaw, 1995).

Between May and July, I conducted two different one-on-one bilingual, 30 to 45 minute audio-taped interviews with the parents of each family. The interviews, an informal conversation between the parents and me, focused on topics of mutual importance that addressed the research questions, such as finding ways to communicate with the school teachers and administrators or connecting with their child's teacher to make school learning culturally relevant to their child (Kvale & Brinkman, 2009). The first of these interviews started in the second month, and the interviews continued into the third and fourth months of this study. These one-to-one interviews

were conducted during various family settings. In this research study, I used an audio-cassette recorder. These interviews generally involved a few unstructured, open-ended questions designed to elicit ideas and opinions from the parent (Creswell, 2003). Thereafter, I conducted a single 45-minute to one-hour bilingual, focus group interview with multiple members in each of the three Hispanic families in their homes to gather emerging views of their voice on the home-school partnership. In particular, I sought their heartfelt sentiments and concerns regarding the issues of respect, communication, and trust that influenced building bridges between parents and school (Kvale, 1996).

This ethnographic study also included monthly, one-hour discussions in the Spanish language with a religious, community leader. His personal experiences from his migration to a new country and frequent dialogue with the Hispanic congregation of his church community helped to clarify the data collected from the three Hispanic families. I maintained an ongoing dialogue with this community leader throughout the study because he served as a source of triangulation for the experiences of the Hispanic families and their difficulties. He aided me with the interpretation of data shared with him anonymously (Creswell, 2003). To organize and prepare the data for analysis, I transcribed verbatim the audio-taped one-to-one and focused group interviews; typed the field notes, and sorted the data based on where I collected the information such as at the kitchen table, outside the home for a family barbecue, or in a family room. Field notes were reviewed regularly (Emerson et al., 1995).

Refinement of thinking process. As I proceeded in this study on literacy and mathematics learning within the context of their homes and families, I decided which general research questions from my initial list were relevant to this ethnographic study and which ones should be revised to guide my subsequent research (Commins, 1989). These research questions were

critical because they guided my effort in gaining a deeper understanding of the families' setting and context in which household interactions occurred. For example, initially, I was focused on learning how they felt about the English language being the sole language used in school events, parent workshops, correspondence, or phone calls from the school. Through candid conversations with the families, I learned about the parents' genuine desire to be involved with their children's school and have a trusting relationship with the school--yet gradually, parents became frustrated because they did not understand how the school system operated, or they could not understand or speak in the English language. So, I revised my questions to learn more of how these families coped—managed to work around the language barrier; how did they remain connected with the school or classroom teacher and thus support their children's school learning. Second, I initially wanted to know how each family used their household, cultural resources to support their children's literacy learning. I originally thought each family depended exclusively on school-provided learning materials such as textbooks, basal readers, or teacher handouts to guide out-of-school literacy or mathematics learning. Through many hours of Spanish language conversations at the kitchen table, their trailer porch, and at family events on weekends, I realized each household drew upon a multitude of family and neighborhood resources. I often observed both parents and children watching a cartoon presentation on the English television network or a newscast on the Mexican television network; thereafter, the parents or an older sibling used their native language and emerging English language proficiency to build a younger child's understanding about the television presentation. Late in the evening, I observed the oldest son in one household using the Internet chat room to converse in the Spanish language with relatives living in another part of the neighborhood or in their parent's native homeland. And, on several occasions, I observed a parent sing a childhood Spanish language

melody or a parent model the use of algorithms via mental mathematics to promote her child's desire to learn how to solve a subtraction, multiplication, or division operation. As a result of these observations, I revised my line of questions to inquire in what ways were the parents acting as mentors and language brokers and thus guiding at-home learning; in what ways were the older and younger siblings interacting amongst themselves or with their parents to accomplish a school assignment; and in what ways were parents persistent in their efforts to increase the chances of their children being successful in acquiring a second language and gaining literacy and mathematics knowledge.

Analysis and interpretation process. In recognition that subjective interpretations of life experiences and perceptions of home-school connections would be addressed, I used triangulation, i.e., gained corroboration of themes from the three Hispanic families and the religious community leader. First, I created a coding system of words and phrases to represent those patterns or regularities in the data and to create a physical separation from the other data (Miles & Huberman, 1994). For example in gathering background data about the parent in one Hispanic family, the mother indicated, "When I came to United States, I knew no English but learned the basics from my oldest child's kindergarten teacher; I gradually learned more English through daily interaction with my children." In this instance, I coded the data as the parent's effort to learn a second language. In collecting data about the perspectives of parents, regarding the manner in which information is typically presented in the English language at parent-teacher assemblies, the father reported, "I have often felt frustrated, confused, embarrassed; felt talked down to; I feel the school is not especially concerned with whether the parents learn the English language." In this instance, I coded the data as schools did not understand the family's culture. Categorizing evidence in order to answer the original aim of the study allowed me to look for

certain words, phrases, patterns of behavior, subjects' way of thinking, and repetitive events that could possibly be sorted under particular coding categories. I used member checking and provided the Hispanic families and the religious community leader the opportunity to offer me feedback, regarding the Spanish version of my written interview notes, to ensure that my perspectives accurately corresponded with the contextual meaning intended prior to converting the interview notes to the English language. I took the written research report, that included quotations from interview transcripts, back to my interview participants, and I not only read aloud but also talked with each family about my understanding of their perspectives, as part of the member-checking process to increase accuracy of the final report. It was my intent to carefully balance the need for conveying clarity against the expectation for presenting an accurate portrayal of the participant's actual use of words crucial to depict the speaker's emotional state or mood. Last, I utilized peer debriefing and collaborated with a member of my advisory planning committee so that a neutral perspective could examine the manner in which I analyzed and interpreted the data findings. As a result of this ethnographic study, my expectation was to bring the collected data together, frame the data in relation to theory, and then explain the significance of my findings to fellow educators.

Through the process of immersing myself within the everyday lives of the three Hispanic families over four months and cross-checking firsthand observations, interview data, and subjective interpretations with the community, religious leader, I have reached several conclusions. First, these three Hispanic families were genuinely interested in their children's education; however, they often struggled as school learning was in the English language. Second, these families possessed household cultural resources that at times were ignored or undervalued at their children's school (Gonzalez, Moll, Tenery, Rivera, Rendon, Gonzalez, &

Amanti, 1995). Third, classroom teachers should explore the potential benefits of permitting bilingualism as a strategy for supporting English language learners in their quest to express themselves in the written and verbal form. Last, it was imperative that schools explore ways to create bridges of communication based on mutual respect, trust and openness with Hispanic parents. What now follows are the results of discovering the silent voices of these three Hispanic families; their hopes and struggles for their children's academic success in U.S. public schools.

Results

To better guide the reader in understanding the significance of this ethnographic research study involving three Hispanic families having emigrated from Mexico to the United States, this researcher arranged the findings into three major sections: language barriers, code switching, and family-teacher collaboration. To arrive at the three major sections, I analyzed and interpreted the data collected during the four months of household visits and created a preliminary coding system of about 50 categories of data. These tentative categories were created to encompass perspective and the ways in which the Hispanic families communicated; their ways of thinking about their children's school in the United States; and the repetitive patterns of interaction or events in one or all three families (Bogdan & Biklen, 2007). Secondly, I utilized the initial coding categories to combine strands of data, i.e. interviews, field notes, and observations that substantially illustrated emerging patterns of behavior across all three Hispanic families. At this juncture in the analysis of data, I also included particular categories to capture distinct parental perspectives or household literacy practices. In the next step of making sense of the data, I created a matrix to reflect further synthesis of the collected data and to visually correlate coding categories with words, phrases, events, and quotes across the three Hispanic households (Miles & Huberman, 1994). From the above analysis of collected data, I constructed an outline of the

three major themes and subtopics to guide the actual reporting of the results and drawing of implications for educators. As each major section is discussed, the reader will gain insight into several underlying themes that characterized the home-school connection and parents' efforts to facilitate their child's out-of-school literacy learning. In several instances, I included an English language translation of the original Spanish language remarks given by the parents or community religious leader.

Language Barriers: Interpreting words and phrases and understanding the meaning behind an established school practice

In the process of establishing dialogue in their native language, taking part in their everyday lives, and earning the trust of these three Hispanic families, I came to understand their heartfelt plea of wanting to simply know what their child's school expected of them, and how could they contribute to their child's school learning. As I was allowed to observe firsthand their private lives, each Hispanic family echoed their choice to depart their native homeland, Mexico and to subsequently immigrate to the United States in the hope of providing a more secure future for their children. These three Hispanic families wanted to communicate with school officials and their child's classroom teacher—to understand the inner workings of the school system. Yet, all too often, the subtleties involved in interpreting the English language were nearly insurmountable to overcome. Consequently, these Hispanic families often became frustrated and felt alienated from the way others, who knew the English language, were able to understand the established school practices and readily participate in their child's school. Speaking to the Hispanic parents' feelings of ambivalence and uncertainty about how their child's school system works, the community religious leader commented,

> "Posiblemente, la dificultad está en la diferencia entre las idiomas de los dos países (los Estados Unidos y México) o posiblemente las familias mexicana nunca tuvieron la

> chanza de obtener una educación. Creo que hay un sistema diferente de aprender entre los dos países y una cultura diferente de aprender. Y, creo que eso es posible que haya problemas si los maestros escolares no comprenden la cultura de los estudiantes o la manera que los diferentes grupos culturales hacen cosas. Diría que las escuelas aquí en los Estados Unidos muy bien do pueden comprender las prácticas culturales, las luchas y los valores de la familia Mexicana"
>
> ["Perhaps the difficulty lies in the difference in language between the two countries (the U.S. and Mexico) or perhaps the Mexican families did not have the chance to get an education. I believe that there is a different system of learning between the two countries and a different culture of learning. And, I believe that there may be problems if the school teachers do not understand the culture of the students, the way different cultural groups do things. I would say that the schools here in the United States may very well not understand the cultural practices, struggles and values of the Mexican family."] (Researcher field notes, July 5, 2010)

For these three Hispanic families, their quest to forge a home-school connection had gradually become a silent struggle to make literal sense of words and phrases that echoed at parent-teacher association meetings or informational workshops; and formally described school events or homework instructions.

Knowing the right words to say. The Hispanic parents, with a limited mastery of the English language, came to their children's Open House in order to learn about the teacher's way of teaching; about the subjects their children would learn; and about the rules of conduct in the classroom. As these Hispanic parents attentively listened to the classroom teacher's 30-minute presentation—spoken in the English language—they wondered about the right words to express their desire to understand what had just been said. At a school meeting, to discuss instructional and assessment strategies for her non-English speaking child, a Hispanic parent recalled a meeting with the school's principal, classroom teacher, and English as a Second Language teacher (who only spoke English). Although the forms presented to the parent were in both English and Spanish, the parent could not articulate the words in the English language that represented her ideas for guiding her child's English language and academic learning. Later in

the school year, these Hispanic families would also attend a one-hour parent workshop addressing the school's strategies for supporting their children's phonemic awareness and oral reading fluency. Even though some of the words were somewhat familiar, the sheer volume of words made it nearly impossible to understand what was going on, and for these parents to decide how best to contribute to the school. Listening to the speaker, these parents viewed several terms on the overhead projector such as automaticity, tracking, and progress monitoring. For these Hispanic families, with a rudimentary knowledge of the English language, it seemed as if the classroom teacher spoke very fast and was unaware they had not understood the salient points of the presentation. The Hispanic parents' inability to understand the spoken words and phrases, and their inability to instinctively construct the appropriate words in the English language made them feel embarrassed and reluctant to ask a question. A Hispanic parent who had previously attended several school meetings and who spoke very little English shared the following perspective:

> "Frecuentemente yo he visto que otros que saben el idioma de ingles ponen sus manos juntos o levantan las manos para contestar una pregunta pero muchas veces no comprendo lo que pasa. Es importante que la escuela trate de dar la información en español quizás los principales temas así que podemos comprender y podemos decidir si podemos ayuda la escuela. Pienso que algunos cambios son necesitados en la manera la escuela nos da la información."
>
> ["I often notice others who know the English language clap their hands or raise their hands to answer a question but I often do not understand what is going on. It is important that the school try to give the information in Spanish perhaps the main themes so we can understand and decide if we can help the school. I think that some changes are needed in the way the school gives us information."] (Researcher field notes, June 10, 2011)

Making the right interpretation of school communication. A father recalled a letter he had received from his child's seventh grade teacher regarding attendance at summer school. Although the Hispanic parent possessed some English language proficiency, he expressed to me

confusion about the letter's purpose. The parent explained that he could not readily determine if the purpose of the letter stipulated that his son's attendance at summer school was optional and for academic enrichment or a strong recommendation as part of being promoted to the next school grade. The parent's confusion also derived from the fact that his son had attained report card grades between the 80th and 90th percentile in reading, science and mathematics throughout the school year. Another parent talked with me during a household visit to determine the meaning of the term "perfect attendance" appearing on her child's report card. The parent referred back to her school experiences in Mexico where the term "perfect attendance" signified that the student had attended school each day and had demonstrated exemplary conduct in all school activities. I explained that in U.S. schools the term "perfect attendance" only signified that the student had not been absent or tardy during the school year. The Hispanic mother of one child referred to a phone call from her child's school in which the school official had utilized the Spanish word "accidente" meaning accident in calling the parent about an incident involving her child at school. Immediately, the parent thought something terrible had happened to her child and quickly drove to the school. Upon arriving at the school and meeting with the classroom teacher, the parent discovered that in reality her child had soiled her pants just after lunch.

Parent's uncertainty of their child's two-way interpretation of school and parent concerns. As one viable strategy to understand the purpose of school assemblies, school correspondence, and teacher remarks at parent-teacher meetings, non-English speaking parents often asked their children to interpret for them. At a parent-teacher session, to discuss his child's abrupt decrease in reading and science grades, the father sat quietly as his son spoke in the English language with the teacher and subsequently interpreted the teacher's views. Thereafter, the father observed a two-minute discourse between his child and the classroom teacher. In

speaking with me, the father expressed his appreciation for his son's help toward creating a respectful connection with the classroom teacher. However, the father had self-doubts of whether his son [the focus of the discussion] had accurately and completely translated the two-way conversation while interpreting the sentiments of both parties. Having received a written note from the classroom teacher for a parent-teacher meeting, the parent, with very little knowledge of the English language, met with the sixth grade classroom teacher to discuss a change in her child's conduct in the classroom. As there was no bilingual teacher at the school, and the parent's familiarity with the English language was extremely limited, the parent asked her child (in the sixth grade) to serve as an intermediary and provide two-way interpretation. The parent recounted her observation of the teacher's facial expression which suggested disapproval of her child's classroom behavior. However, her child's translation of the teacher's remarks provided the parent little insight of what had transpired and self doubt as to her child's truthfulness in the representation of the teacher's perspective.

> "Mi hijo me ha ayudado traducir para que nosotros podemos hablar con la maestra. Pero mi sentimiento es que mi duda que mi niño está diciendo en realmente toda la información que la maestra nos dijo. Por ejemplo, la conducta de mi hijo cambio del grado A para el grado B. En hablando con mi hijo, el no podía dar mi una razón especifica que explico la razón por el cambio en grado de conducta."
>
> ["My son has helped translate so that we can talk with the teacher. But my sentiment is that I have self-doubts that my son is actually telling me all the information that the teacher is saying. For example, my son's conduct changed from an A to a B. In talking with my child, he could not give me a specific reason that explained the reason for the change in his conduct."] (Researcher field notes, April 9, 2010)

Use of Code Switching to Bridge Parent and Their Child's Knowledge and Experience

Preserve cultural ways of communicating. A Hispanic parent, who immigrated to the United States to secure a better life for her three children, readily admitted to weaving English words such as "okay, because, yesterday, and together" with her native Spanish language in

household conversations. For the parent, it was a way to model and encourage learning of the English language amongst her children and as a strategy to help ensure that the children viewed with pride their cultural identity as Hispanics.

> "Para que mis niños pueden hablar con sus abuelos que nomas hablan en español y todavía viven en México, y para que yo puedo tener una voz en la manera que mis niños aprenden la idioma de español y recuerdan las tradiciones importante de México son razones que un padre quiere que mis niños practican la idioma de español en la casa."
>
> ["So that my children can communicate with their Spanish-speaking grandparents living in Mexico. Secondly, for me to have a voice in their usage of the Spanish language and remembrance of important family traditions" are reasons that a Hispanic parent encourages her U.S. born children to routinely practice Spanish in the household."] (Researcher field notes, May 14, June 10, and July 13, 2010)

Nevertheless, the same Hispanic parent merged native Spanish and often-heard English words [the latter learned from fellow workers and American television] in acknowledgement that her child was growing up in the United States and getting an education with English as the predominant language at school. Although at times the dual use of the Spanish and English languages seemed awkward, the Hispanic parents deliberately chose this mode of communication. It was a way for the parents to express their cariño (or affection) with traditional Hispanic words, and to show respect for their child's gradual acquisition of a second language in conjunction with U.S. school learning.

Allow non-English speaking parents to participate in their child's out-of-school learning. In two Hispanic families, the parents used their limited knowledge of the English language, reinforced with their native language, to model letter sounds and everyday words and to teach their children traditional American melodies such as "the ABCs and Happy Birthday. In each household, a recurrent parental theme that prevailed was the parent's expectation that their children learned the English language in order to talk with their teachers and class friends; succeed at school studies in America; and do well in their future adult lives in the United States.

And, in each family, the eldest child who had practiced the Spanish language since birth became the 'de facto' language broker. In this capacity, that child mediated between the non- or limited-English speaking parent and the younger children's homework assignments published in the English language. For example, as part of the weekly household literacy learning, the older child routinely used his Spanish language skills to explain the main ideas of an accelerated reader or library book to his mother or father. Having understood the plot or moral of the story, the Spanish-speaking parent in turn used their native language to be involved with their children's literacy growth. Further, the parents used their prior schooling and life experiences in Mexico as a framework for asking open-ended questions of the setting, characters or illustrations. The Hispanic parent expressed her indebtedness to her oldest child being able to use his bilingual skills to help his younger brother and his mother become a part of the younger child's school learning.

> "Mi hijo mayor me ayuda ser parte de lo que mi hijo menor está aprendiendo en sus estudios. Cuando mi hijo menor no entendió la lección de lectura, mi hijo mayor le gusta usar las dos idiomas para dar una explicación de cómo pronunciar los sonidos, las palabras, o como se debe de leer las oraciones en una lectura de cuentas. Por esta razón, pienso que mis niños y yo somos más cerca emocionalmente e intelectualmente."
>
> ["My oldest son helps me be part of what my youngest son is learning at school. When my youngest son does not understand the reading story, my oldest son likes to use both languages to give an explanation of how to pronounce the letter sounds, the words, or how to read the sentences in a reading story. For this reason, I think that my children and I are closer emotionally and intellectually."] (Researcher field notes, July 16, 2010)

Thereafter, the elder child freely switched between both languages to summarize the printed English language storyline; the parent's questions and commentary in the Spanish language; and the younger sibling's responses that incorporated an emerging knowledge of the English and Spanish languages. I observed the emergence of a strong, emotional, and intellectual relationship

between the parents and the children as a result of multiple language resources being utilized during household Discourse to accommodate out-of-school learning.

Adaptive strategy for siblings to support each other's English language and academic learning. When the parent was not able to participate in their child's out-of-school learning, I often saw an older sibling sitting alongside and listening to the younger sibling practice aloud the week's letter sounds, spelling words, or reading passage. If the younger sibling repeated the same error, the older sibling intervened and modeled the correct sound in the English language. And, if the younger sibling continued to struggle with a particular vowel or consonant sound, the elder sibling switched back to the Spanish language as the medium for illustrating similarities with their native language. In yet another family setting, both the older and younger siblings routinely engaged in a mutually respectful dialogue in both languages while sketching drawings of ships, cars, and nature scenes in a notebook with daily entries. I observed both siblings collaborate on [or at times defend] the initial choice of drawing to create, the words to describe the sketch, and the mix of crayon colors to decorate the sketch (See Appendices 5 – 6). While the Hispanic parent of her two children prepared the evening meal for the entire family, the two children sat next to each other and watched cartoons either on the Mexican or the American television network. In certain instances, the younger sibling did not understand the "humorous punch line" implied in the cartoon segment and thus turned to her older sibling to provide an explanation. With caring demeanor, the older sibling used his English language proficiency and then resorted to their native Spanish language to reinforce his interpretation of the cartoon message. In response, the younger sibling remained curious and formulated a series of open-ended questions to better understand. In the midst of these bilingual cartoon discussions, the

older sibling influenced his younger sister's use of critical thinking skills such as compare and contrast different cartoon segments and making generalizations to get the "punch line."

Family-Teacher Collaboration—A Framework for Understanding School Systems of Mexico and U.S., and Cultural Views Toward Education

Understanding the inner working system of the school. So many unanswered questions generally characterized the tenuous relationship between these Hispanic parents and their children's school. Regardless of how many years each family's children had attended school in the United States, each family consistently expressed a deep-seated desire. These Hispanic parents wanted to know the rationale for the teacher's classroom practices; the goals of the school curriculum; ways to participate at the school; or the pathways to communicate with school officials. After several visits with one Hispanic family, they openly declared that the classroom teacher had not contacted them about opportunities to share household practices such as family traditions, songs, storytelling, bilingual television programs, or Hispanic tongue twisters used to guide their children's at-home literacy. A secondary concern from this same Hispanic family was a fervent expectation for understanding the most problematic sections of their children's fifth grade school curriculum. Although the parents previously attended multiple parent-school workshops and held a moderate level of English language proficiency, they felt restrained in supporting their children's school learning since they were unfamiliar with the major themes governing their children's grade level development. Another Hispanic family expressed ambivalence of how her child's report card grades were determined, i.e., what value was placed on examinations, class work, and homework assignments and how to formally inquire about the determination of grades. From the parents' perspective, their child's report card

grades, referred to as "calificaciones" in the Spanish language, did not correspond with the level of effort their child had exerted during the grading period.

> "No entiendo porque mi hijo mayor recibió calificaciones más bajo durante estas nueve semanas anterior. Mi hijo cada tarde regreso de la escuela e hizo su tarea en la mayoría y proyectos mayores. Y los papeles que el trajo a la casa cada dos semanas tenían en general grados alto, como A o B. Porque no puedo hablar la idioma de ingles muy bien yo no sé con quién puedo hablar y como decir mis preguntas."
>
> ["I do not understand why my oldest son received lower grades during this last nine weeks. My son each day returns from school and did his homework in the majority and his major projects. And the papers that he brought to the house each two weeks have in general high grades such as A or B. Because I cannot talk in the English language very well I do not know with whom I can talk with and if I can say my questions."] (Researcher field notes, April 23, 2010)

The non-English speaking and Hispanic parents of one child recalled that their child missed a cumulative total of two weeks of school due to medical considerations. Furthermore, the same parents were unaware of the need to bring a doctor's slip after each incident so their child's absences or late arrivals could be coded excused versus unexcused. The parents commented that this difficult situation was eventually resolved through the special intervention of the school's English as a Second Language teacher.

Recognizing cultural perspectives toward education—Mexican parent versus the U.S. parent. In one Hispanic family, the father held constant talks at the kitchen table with his son about the inherent value of an education. Nevertheless, this parent expressed consternation that his 11-year old son was moving away from being a child and not placing the same level of importance on an education as he [the parent] had placed on it while growing up in Mexico. Consequently, in desperation to encourage his son to more diligently apply himself to the academic studies, the father periodically communicated to his son that if his grades continued to fall he would take his son back to Mexico to live with his grandparents and attend school there. For a more dramatic effect, the same parent brought his son to his carpentry work site on one

Saturday morning. While at the work site, the father explained to his son that if he continued to ignore his school studies in the United States and failed to graduate either from the eighth grade or from high school, his son would probably need to do "hard labor" kind of work as an adult. The father shared with me the honesty of his son's verbal response, "Papa, I want to be an architect and design buildings. I do not want to get so dirty…and have to work so much…for 12 – 14 hours each day." When the Hispanic mother grew increasingly apprehensive that her son was not allocating the necessary after-school hours to his academic studies, she recalled,

> "Cuando yo iba a la escuela primaria en México, todavía tenía que hacer mis tareas cuando regresé a casa, como limpiar los muebles, lavar los platos, y doblar la ropa. A veces, incluso tuve que ayudar a mi madre preparar la cena para unas 12 personas en nuestra familia. Fue alrededor de las 7 de la noche que por fin pude estudiar por la luz de las velas para la clase del día siguiente o para una prueba."
>
> ["As a child, while I was going to school in Mexico, I still had to do my chores when I returned home such as clean the furniture, wash the dishes or fold the clothes. Sometimes, I had to help my mother prepare the dinner for 12 persons in our family. It was around 7 in the evening that I was finally able to study by candlelight for the next day's class or for an examination.] (Researcher field notes, April 8, 2010)

In view of her son's diminishing grade point average at his U.S. public school, the parent disclosed her penchant for spanking her child or at a minimum withholding the weekly movie. Instead, the mother asked me for alternative suggestions to help her child "see" that an education in the United States was vital to his ability to succeed in whatever life endeavor he chose. Having lived in the United States for about five years, two Hispanic parents shared their opinion about educational opportunities for the children born in America.

> "Los niños que han nacido y criado en los Estados Unidos tienen muchas oportunidades para aprender como la lectura, la ciencia, y la geografía. Si no logran, es porque no querían aprender y no quiere trabajar duro para lograr su objetivo."
>
> ["In the opinion of two Hispanic parents, the children who are born and raised in the United States have so many opportunities to learn like reading, science and geography; and if they are not successful it is because they do not want to learn and do not want to work hard to achieve their life goal."] (Researcher field notes, May 6, 2010)

Finding commonalities as a basis for parent-teacher collaboration. Each Hispanic parent echoed a similar sentiment that continuous dialogue with their child's school and classroom teacher (preferably in both languages) was the critical first step to forge a mutually respectful home-school partnership. Only in this manner, the parents suggested, could both parties in the home-school connection share an equitable role in contributing their knowledge, skills, and experience toward properly mentoring and teaching the children. These Hispanic parents shared a notion of school teachers, inculcated during their childhood upbringing in Mexico, i.e., that the teacher was educated in instructional pedagogy; knew different ways to help children learn; and readily used their knowledge of child development to guide classroom learning. On the other hand, these parents needed the classroom teacher to have information exchange forums throughout the school year. In this manner, non- or limited- English speaking parents alongside other parents could have a voice in incorporating culturally relevant learning experiences as part of the school's curriculum. Two Hispanic parents shared their understanding of their children's reaction to school learning,

> "Pienso que nuestros niños están viendo lo que pasa en el salón de escuela como algo que no es importante o algo extraño en comparación de lo que han experimentado o aprendido en casa."
>
> ["We think that sometimes our children view what ordinarily happens for classroom learning as unimportant or completely foreign to what they had already experienced at home."] (Researcher field notes, June 22 and July 13, 2010)

These Hispanic parents, born and educated in Mexico, desperately sought a venue in which they might communicate with confianza (meaning confidence and trust) with the classroom teacher. With high hopes for their children's future, these parents wished to support their children's school and contribute their Hispanic native language, family traditions, and household literacy practices as vital resources toward their children's English language

acquisition and school learning in the United States. While talking about the collaborative role of parent and classroom teacher, in providing a meaningful education for his child, a Hispanic parent poignantly stated,

> "De todas las responsabilidades que nosotros, los padres y maestros tenemos, nuestro deber más importante es trabajar junto y ensenar los niños—porque mañana es demasiado tarde."
>
> ["Of all responsibilities that we, the parents and teachers have, our single most important duty is to work together and teach the children—tomorrow, it is too late."] (Researcher field notes, July 22, 2010)

Discussion

The findings from this study add a newer perspective to the growing literature on the home-school connection and on how the Hispanic household's cultural knowledge and experience contribute to their children's literacy learning. Realizing that I could communicate in their native language, and that I was willing to meet with them in their home, the three Hispanic families eventually shared with me a persistent theme. Each family wanted to frequently communicate, preferably in person, with their children's classroom teacher as a way to build rapport and trust with each other. These parents wanted their questions about their children's school to be heard and understood! Because of their inability to speak the English language and know the right kinds of words to say, the parents were reluctant, even embarrassed to attempt to call the school or their children's classroom teacher. If it were possible to communicate in the English language, or if someone might understand their native language, the parents wished to express their frustrations and uncertainties. These parents wanted to know for example what literacy practices were used in the classroom (Edwards, 1995); how to interpret their children's homework instructions; why did their children receive a particular grade; or what did this school pamphlet require of the parents. Speaking about the difficulties English Language Learner

parents face as a consequence of their limited English language proficiency, Becker (2001) asserted,

> "If parents do not know how their child's school functions, what options they have, what the expectations are for their children and for themselves, it will be more difficult for them to participate in their child's education, let alone support it" (172).

An important suggestion that periodically resonated during visits to their homes was the notion of a corps of Hispanic parents gaining some knowledge of school matters and ways to assist with the children's literacy homework. Thereafter, this corps of parents, with the support of the classroom teacher, could help other Hispanic parents recently immigrated to the United States or those parents who did not understand the English language. Osterling, Violand-Sanchez, and von Vacano (1999) discussed the immense possibilities of Latino families working together—using their many life experiences—to learn how to read and write in Spanish and then to gradually transition to the English language. As these Spanish-speaking parents collaborated to better understand their life struggles and to learn from one another, there was a feeling of empowerment as they could now more capably support their children's school learning (Osterland, Violand-Sanchez, & von Vacano, 1999). Alternatively, Sanders (2008) purported that school districts might train individuals to serve as 'parent liaisons.' The role of the parent liaisons would be twofold: assist classroom teachers as reliable interpreters of cultural nuances; and serve as role models for ways to connect with diverse families (Ginsberg, 2007). Provided the institutional support for parent liaisons was sustained, there could be a realistic expectation for a long-term trusting partnership between schools and Latino families as well as a support system to help improve student academic achievement (Sanders, 2008). In his research on some reasons for the limited participation of Latino families in their child's school, Pena (2000) noted, "Without a sense of equal partnership, parents are uncomfortable and are less likely to become

active participants in school life" (p. 92). To reiterate, it was the Hispanic parents' assertion that by exchanging viewpoints and working with the school a trusting home-school connection could be formed. In turn, their children would benefit from what the school and the parents were collectively doing for their non- or limited- English speaking children.

Through four months of household visits, I often observed parents and children sitting in their living room or around the kitchen table actively engaged in dialogue, mostly in the Spanish language, but at times in the English language, about a library book their children had just read aloud or about the legacy of an ancestor's life story in Mexico. Additionally, I became acutely aware of the unique ways in which the older sibling routinely switched from the Spanish to English language. The significance of the older sibling's influence on household literacy learning did not escape my attention. First, the older child helped facilitate his younger sibling's acquisition of the English language. Second, the older child's code switching enabled the non-English speaking parents to understand and thus participate in their children's writing and reading homework assignments. Crowell (1998) defined code switching as "alternating the use of two languages at the word, phrase, clause, or sentence level" (p. 229) used as a medium to exchange information such as family stories or to specify the individuals from a community using the same language. During these household visits, I contemplated the studies of Commins (1989) with bilingual students, and their simultaneous use of the English and Spanish languages to express him or herself. Despite the students' grammatical errors, the students intuitively switched between languages as an adaptive linguistic strategy in order to be understood by their monolingual English speakers. Likewise, Crowell (1998) discussed the notion of allowing students of another culture the opportunity to code switch, specifically "To use a word, a phrase or a sentence between two languages as a means for friends and families to tell stories" (p. 229).

Perhaps, this understanding of multicultural students' efforts to communicate in the classroom may be invaluable to affording equity to all students—English speaking and non-English speaking students (Crowell, 1998).

At a certain point in my household visits, I contemplated Fain, Smith, and Kander's (2006) research on family literature circle discussions. From their perspective, these literacy discussions permitted family members in a familiar social context to use several household resources: primary language, prior knowledge of literature, and cultural experiences to construct relevant knowledge. Yes, it became quite evident that the children in these families were involved—listening, talking, thinking, interacting, laughing, writing, singing, creating, and even reflecting. Becoming immersed in the milieu of their daily lives, I gradually recognized, as noted in McCarthey (2000), the household Discourse pattern—primarily in the family's native language. It was quite common during family conversations and activities for family members to draw on the cultural traditions and experiences from the immediate family, their grandparents in Mexico, and both relatives and neighbors living in their community here in the United States. At times, the parents and children of one family used either the cell phone or electronic chat room to converse with their relatives in Mexico. On the day of one parent's birthday, a five-year old, alongside her family, sang the Spanish words of two traditional Mexican songs and the English language words of an American song. Of special interest, I distinctly recall entering a Hispanic household and observing the three children (ages 6 – 17) standing in front of their living room television as they operated the WI multimedia 3-D interactive game player. Throughout the ensuing ten minutes, the children physically and mentally responded to the English language narration, the constantly changing scenic backgrounds, and the interactive game obstacles. On another occasion, these same children were huddled in a small circle on the living room floor

reading to each other from their favorite Spanish or English language book, taken from the family chest of books and games. From my viewpoint, the non-English speaking parents were championing the literacy learning of their children!

From firsthand observations in recording his own children's literacy experiences at home, Cook (2005) reported that having knowledge of these out-of-school literacy experiences served to inform classroom teaching practices. Likewise, Ginsberg (2007) noted that household visits with recent immigrants assisted classroom teachers and parents to learn more about each other and thus make their daily classroom instruction more culturally relevant. Cognizant of the dramatic increase in the culturally and linguistically diverse student population in U.S. schools, Bazron, Osher, and Fleischman (2005) suggested several instructional strategies, such as allowing more time for students to provide an oral response or being attentive to the fact that immigrant or minority students needed extra time to adjust to differences between home and school. Ben-Yosef (2003) reported on the importance of classroom teachers allowing students of another cultural background to use their native literacy skills as a foundation for knowledge construction; while Whittaker, Salend, and Gutierrez (1997) prompted classroom teachers to create a learning environment that encouraged students to take risks and attempt to use their first and second languages. In studies with children of Mexican culture, Rothstein-Fisch, Greenfield, and Elise-Trumbull (1999) appropriately noted, "When teachers understand and respect the collectivistic values of immigrant Latino children, the opportunities for culturally informed learning becomes limitless" (p. 66).

Near the end of my four-month household visits with one particular family, the mother talked at length with me of her fervent hope that her child would successfully attain an education in the American school system and as an adult reach his professional goal. In the midst of this

engaging conversation, the parent indicated that she wanted to know more about the fundamental rights that guaranteed an equitable opportunity for all American citizens. The parent indicated that while attending the equivalent of a business college in Mexico she briefly studied the struggles of different countries, including the United States to secure citizen rights and freedoms. In response, I referred to the Declaration of Independence and federal civil rights legislation passed since the 1950s to preserve the rights of all American citizens. Thereafter, the parent paused for several moments before she respectfully, yet methodically asked the following question. In retrospect, I believed the parent's comment offered school leaders an opportunity and a reason for school reform.

> "Por qué es que en una nación como los Estados Unidos que propugna la igualdad de oportunidades en la Declaración de Independencia que los hijos de padres que no nacieron en este país deben cambiar abruptamente su estilo de vida cultural con el fin de encajar en una forma estándar de vida?
>
> ["Why is it that in a nation such as the United States that espouses equality of opportunity in the Declaration of Independence that children of parents not born in this country must abruptly change their cultural lifestyle in order to fit within one standard way of living?"] (Researcher field notes, April 15, 2010)

Implications

In view of the immense benefit of code-switching in each household, and the significant growth of Hispanics in American public schools, educators may wish to reexamine the rationale that systematically excluded the native language of Hispanic students in classroom learning, homework assignments, and standardized assessments. Within each household, the Hispanic children exuded confidence while reading, conversing, exchanging information, or functioning as language brokers for their parents. During a family meeting or at a dinner conversation, each child's voice, regardless of age, was encouraged—even respected. Often, the pattern of family discourse expressed mostly in Spanish but some in English involved divergent perspectives from

the grandparents, parents, and children in the process of making important decisions. Yet, according to the Hispanic parents, their children's household knowledge and cultural experiences, rooted in their native language, was often ignored or minimized in the classroom. Consequently, now is the time for school leaders and classroom teachers to literally uproot traditional pedagogical practices that emphasize one culturally dominant way of discourse. For example, schools could identify teams of bilingual parents and older siblings as part of a community outreach program held after school or on Saturday mornings to assist in the academic learning and English language acquisition of younger children. At schools, where there is not an English as a Second Language teacher available to support the cultural needs of migrant or Latino students, older siblings capable of switching between the Spanish and English languages could serve as "big buddies" or mentors for these capable learners. These "big buddies" or mentors could be utilized as part of a school-wide literacy initiative designed to engage non-English speaking students with open-ended discussions and journal writings on children's books published in either the Spanish or English language. With the prevalence of technology at American public schools, bilingual parent volunteers and older siblings might assist students with no or limited English language skills in utilizing digital technology to portray the cultural stories of their families and ancestors. For example, in support of the school's literacy and language arts curriculum, these students could be coached to create an electronic photo album that featured pictures with oral narratives in their native language about their parents, grandparents, friends or close neighbors. As noted above, the school can be the appropriate setting to showcase pedagogical practices that welcome and more importantly value culturally divergent ways of thinking, expressing and performing. To reiterate, these parents remain optimistic that the American school setting in the near future will be a groundbreaking forum—a

venue where the Spanish language of Hispanic children will be acknowledged as a relevant resource for classroom learning versus a language to be viewed with disdain and systematically ignored. As stewards of this nation's public schools, we, as educators can and should make the first bold move—meet the Hispanic student where they are—with their first [native] language learned since birth.

Developing trusting, mutually respectful relationships with three Hispanic families over a four-month timeline and sharing their perspective of the home-school connection represent two definitive reasons for visiting families in their homes. Often, schools use written correspondence or make telephone calls framed in the English language as methods for building rapport with migrant or Latino families. In the case of these non-English speaking families, these traditional methods seeking parental involvement were generally inadequate since the parents did not fully understand the written or spoken message. Thus, school administrators and classroom teachers, who speak Spanish and are Latino themselves, might experiment with various strategies for discovering the contextual settings in which the Hispanic family's cultural heritage (knowledge, traditions, and experience) serves as a venue for out-of-school learning. For example, before the school year started, the school principal and select bilingual classroom teachers might conduct an advertised visit to neighborhoods populated with non-English speaking families to informally greet families and answer parent questions. At the start of the school year, the school principal and Spanish-speaking classroom teachers might host a Spanish-language conference that included a narrated walking tour of the school and a brief video presentation of the school's mission, system of communication, and student guidelines. During this setting, a two-way dialogue in the Spanish language would be used to emphasize the family's value as equal partners in guiding and evaluating the academic progress and language acquisition of Hispanic

students. Thereafter, during various points in the school year, select classroom teachers (with a Latino background) might convene with non-English speaking families to examine cultural differences in instructional strategies between Mexico and the United States. The net result would be to utilize these ongoing forums to empower these Hispanic families to view themselves as credible teachers in their children's out-of-school learning. A second purpose would be to weave cultural literacy practices with classroom instruction; the cumulative aim of improving and deepening the relevance of student learning. As the school administrator and classroom teachers realize the depth of literacy influences that emanate from the family, extended family members, and neighbors, there is an increased propensity that educators will discard prior misperceptions of Spanish-speaking families. The children who benefit from these parent-school associations will witness an important life lesson about collaboration. What a wonderful legacy that parents and educators can bequeath on these migrant, Hispanic children and future leaders of America!

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Appendix 1

Initial One-on One Home Interview Questions for Parents--English

Part I
Semi-structured Interview Questions
1. How do you feel about the way the school communicates with you regarding policies, classroom learning, and special events?
2. In what particular ways has your child's school teacher asked for your involvement?
3. When you have attended a school event such as a workshop on a particular school topic or a program to recognize the children, what has been done to reach non-English speaking parents?
4. What would you suggest might help school teachers and non-English speaking parents communicate and build a sense of mutual trust and respect for each other?
5. In what ways might parents and teachers collaborate to include the child's skills, family knowledge and experiences in classroom learning?
6. What are some ways that your child has learned literacy in your household, and how do you think that these experiences have helped your child's academic learning?

Part II

Possible Questions for Follow-Up

1. Please explain a little more about what you meant… not knowing who to turn to…and being uncertain of how to support your child's learning?
2. You said that you wanted to be involved with the school, but that you don't understand what is said in school activities, how do you feel about that?
3. So, what did you do when you did not understand the information or notes sent by the teacher?
4. We talked a lot about trust, why is having trust or "confianza" between the teacher and you so important?
5. I would really like to hear more of how you motivate your children to practice their reading in what they do every day.

Appendix 2

Initial One-on-One Home Interview Questions for Parents—Spanish

1. ¿Cómo se siente sobre la forma en que la escuela se comunica con usted en relación con las políticas, el aprendizaje de aula y eventos especiales?
2. ¿En qué manera particular el maestro de la escuela de su hijo le pidió a su participación?
3. ¿Cuando han ido a un evento de la escuela o un programa para reconocer a los hijos, que han hecho la escuela para ayudar a los padres que no hablan inglesa?
4. ¿Qué sugeriría usted puede ayudar a los maestros de la escuela y los padres que no hablan Inglés comunicar y crear un sentido de confianza mutua y el respeto por los demás?
5. ¿De qué manera podrían los padres y los maestros colaboran para incluir las habilidades del niño, el conocimiento de la familia y las experiencias de aprendizaje en el aula?
6. ¿Cuáles son algunas maneras en que su hijo ha aprendido la alfabetización en su casa, y ¿cómo cree que estas experiencias le han ayudado el aprendizaje académico de su hijo?

Part II

Possible Questions for Follow-Up

1. ¿Por favor, explique un poco más sobre lo que significa que usted no sabía a quién recurrir y sobre no estar seguro de cómo apoyar el aprendizaje de su hijo?
2. ¿Usted dijo que quería estar involucrados con la escuela, pero que no entiendes lo que se dice en las actividades escolares, ¿cómo se siente acerca de eso?
3. ¿Por lo tanto, ¿qué hizo cuando usted no entiende la información o notas enviadas por el maestro?
4. ¿Hemos hablado mucho de confianza, ¿por qué es que la confianza entre el profesor y ustedes, como los padres de sus niños muy importantes?
5. Me gustaría saber más de cómo motivar a sus hijos a practicar la lectura en lo que hacen todos los días.

Appendix 3

Initial Home Focus Group Questions for Family—English

1. I have noticed that sometimes it's hard to help your child with the literacy homework because you only speak in Spanish. What would you like your child's school to do to make it easier for you to help with your child's learning?
2. What might be your sentiment about your child's school using only the English language and the textbook to teach reading to your child, and would you like for other experiences and examples to be included?
3. You've said before that meetings and school events are presented only in the English language. How has that situation made you feel, and what changes would you like the school to make to help you feel included?
4. You have talked about problems in your child learning to read and understand while using the school textbooks. What would you like to do to help the classroom teacher make learning more meaningful to your child?
5. I have noticed that your children only use the Spanish language to communicate with their parents and their brothers and sisters. Your children also seem very comfortable doing things around the house. How do they feel about not being able to use their Spanish language to do their homework or their work in the classroom?

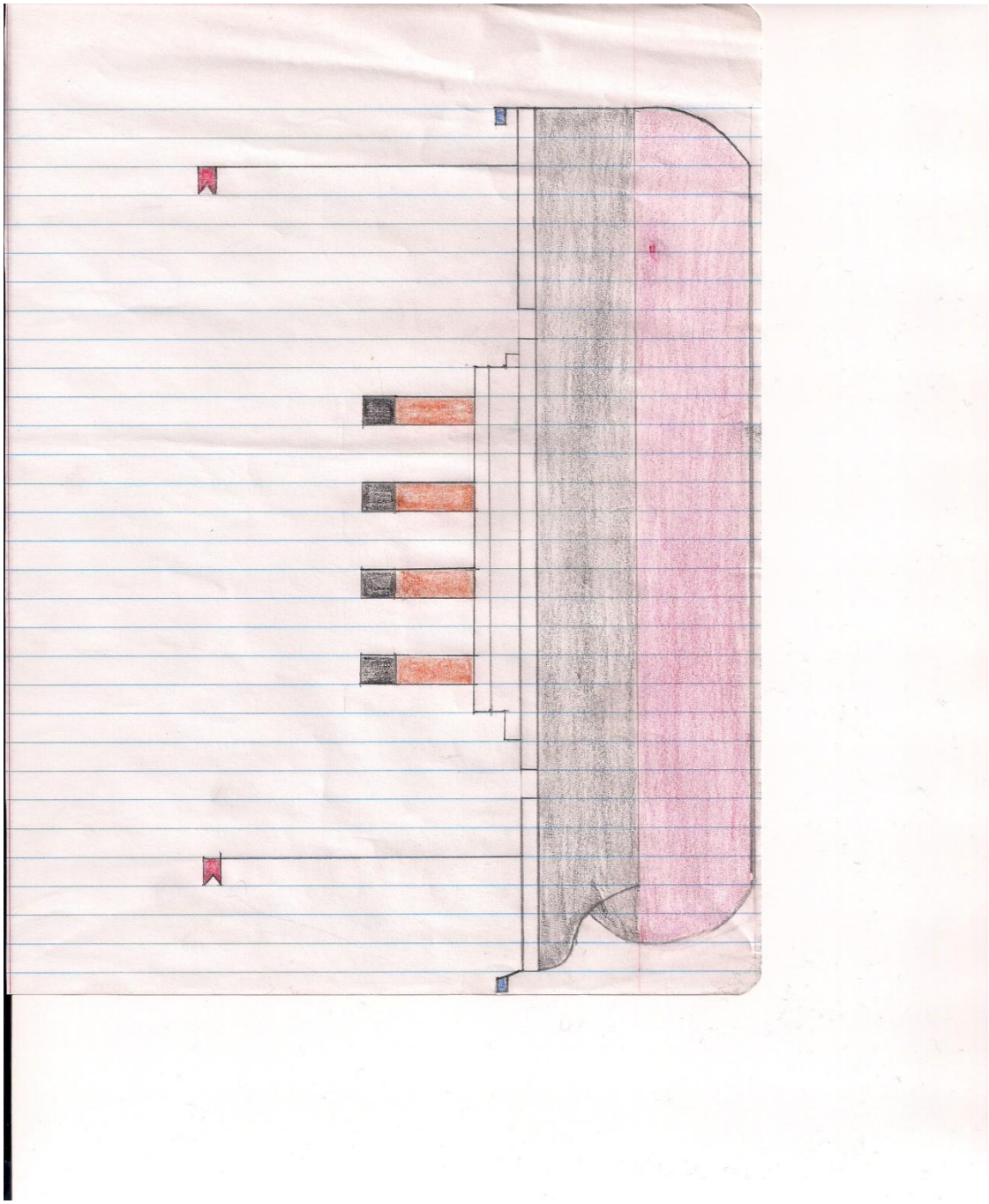
Appendix 4

Initial Home Focus Group Questions for Family—Spanish

1. ¿He notado que hay veces es difícil ayudar a su hijo con la tarea de la lectura, ya que sólo hablan en español. ¿Qué le gustaría la escuela de su hijo a hacer para que sea más fácil para usted ayudar con los estudios de su hijo?
2. ¿Cuál podría ser su sentimiento acerca del maestro usando solamente el idioma de Ingles durante conversaciones de instrucción, los libros o textos para ensenar sus niños? También, te gustaría que el maestro incluir experiencias y ejemplos de su cultura o otras culturas en la instrucción de leer?
3. Usted ha dicho antes que las reuniones y eventos de la escuela se presentan sólo en inglés. ¿Cómo ha esa situación hizo sentir? ¿Qué cambios desea la escuela para hacer para ayudarle a sentirse incluidos?
4. Ha hablado de problemas en su niño aprendiendo a leer y entender al utilizar los libros de texto. ¿Qué gustaría hacer para ayudar al profesor de aula hacen aprendizaje más significativo a su hijo?
5. Me he dado cuenta de que sus hijos utilizan sólo el idioma español para comunicarse con sus padres, sus hermanos y hermanas. Sus hijos también parecen muy cómodos hacer las cosas en casa. ¿Cómo se sienten acerca de sus niños no poder utilizar su idioma español para realizar sus deberes o su trabajo en el aula?

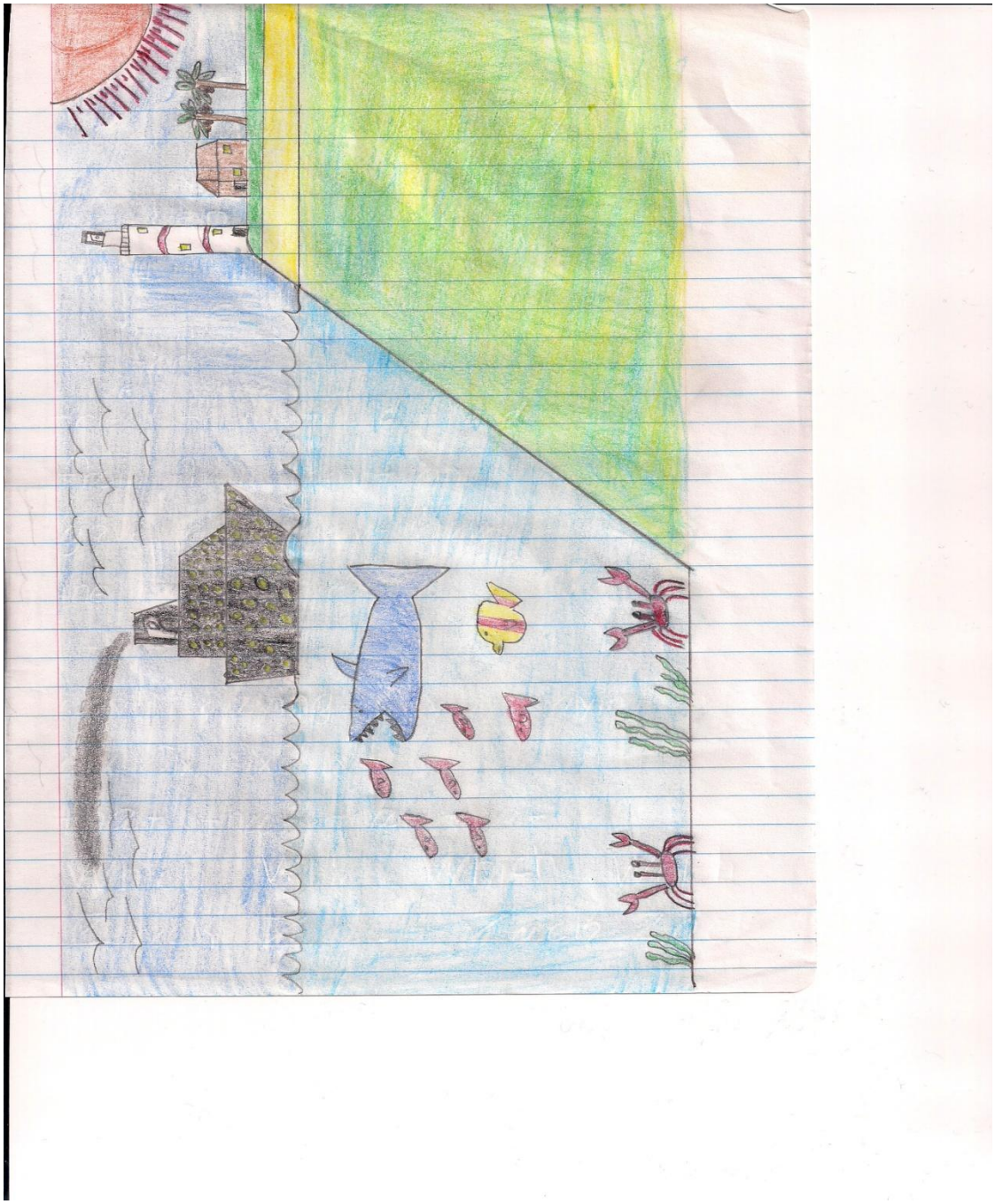
Appendix 5

Example 1 of Collaborative Drawing and Coloring Project



Appendix 6

Example 2 of Collaborative Drawing and Coloring Project



Chapter 5

Abstract: There is limited research concerning the perspectives of immigrant families, teachers, and schools working together to create a culturally relevant, challenging mathematics curriculum that addresses the pressing social needs of the community. The author and teacher explored (a) ways the parents approached mathematics differently from their child's school and (b) parental expectations for contributing to their child's mathematics learning at school. Findings from four months of household visits involving interviews, observations, and analysis of parent-student interaction during mathematics discourse indicate the parents solved mathematics problems in their mind by using memorized algorithms; relied on everyday household experiences as a vehicle for their children to know and do mathematics; and expressed hope for a voice to make school mathematics relevant to their cultural and family heritage, knowledge, and experience.

Finding commonalities between at home and school mathematics via bilingualism, daily experiences, and cultural practices

Introduction

> Working class, minority parents want to learn the mathematics their children are learning in school and they want to understand this mathematics and not just be told or shown a formula to memorize (Civil, 2002, p. 146).

From research data collected over the past 30 years on the mathematics achievement of ethnic groups, Hispanic students' mathematics performance ranks significantly below their Caucasian peers (Catsambis, 1994; Lee, 2002; Stevens, Olivarez, Lan, & Tallent-Runnels, 2004). In examining the standardized test scores on the Scholastic Aptitude Test and American College Testing, students of color (African American, Native American, Hispanic and some Asian groups) dramatically scored lower than their white, Caucasian peers. The resulting low mathematics scores effectively exclude their consideration in more challenging mathematics courses and entry into college preparatory courses (Gutstein, Lippman, Hernandez, and de los Reyes, 1997). Likewise, the inability of institutions of higher learning to appropriately respond to the [financial and language] needs of minority students has contributed to their high drop out from such schools (Hernandez, 1973).

Additionally, many Hispanic students have not been encouraged or have not completed the requisite mathematics courses to compete in an emerging technological work environment. Educational institutions may believe that students, without proficiency in the English language or with a distinct body of cultural experiences, have little chance of success; thus the teachers do not encourage the students' enrollment in higher level mathematics courses. Second, Hispanic students may elect not to participate in mathematics courses that require critical problem solving and reasoning because they do not observe Hispanic role models demonstrating success in the use of mathematics (Sheldon & Epstein 2005; Stevens et al. 2004).

In a review of a majority of classrooms in the United States, instructional practices for minority, Latino students tend to consist of rote memorization and low-level skills remediation which perpetuates instinctive problem solving without critical thinking processes and ultimately poor mathematics scores. With the preponderance of increasing numbers of Latino students, schools and classroom teachers may decide to create a 'subtractive learning environment' in which the norm is to ignore or exclude the non-English speaking student's primary language, strengths, and cultural experiences. Conversely, the teacher can decide to create an 'additive learning environment' in which the classroom norm is to visibly acknowledge and encourage the student's use of their native language to talk about and construct meanings of mathematical ideas. The decision to limit the Latino students' access to challenging mathematics courses may be based on a belief that a shortcoming in that student's cultural or linguistic background is the causal factor for low mathematics performance. The process of providing inadequate or inappropriate instructional mathematics' practices more appropriately explains the student's lack of progress or interest in mathematics. Most teachers (including Latino teachers) are reluctant to change their mathematics' pedagogy because of their lack of experience in implementing

reformed mathematics; an unwillingness to invest the time to connect with the student's needs; or an imperceptible social climate that links Latinos with repetitive, low level tasks (Hernandez, 1973; Khisty & Viego, 1999; Reyes & Fletcher, 2003).

Civil, Diaz-Palomar, Menendez-Gomez, and Acosta-Iriqui (2008) stipulated that Latino parents' prior learning experiences influenced the manner in which they attempted to engage with their children's mathematics education. In some instances, the parents attempted to impose their own learned ways of doing mathematics, or they made every effort to engage their children in mathematics discourse that involved an overt effort to explain and justify. In other instances, the parents viewed the classroom teacher as knowledgeable in instructional pedagogy and thus deferred sole responsibility for mathematics instruction to the teacher.

Within the school setting, Gonzalez, Andrade, Civil, and Moll (2001) purported that a classroom teacher's efforts to make mathematics instruction relevant to culturally diverse students should be based on gaining knowledge of the student's culture and on discovering how the student's household approaches mathematics to make sense of his or her everyday life. To gain a sense of the student's lived practices for example in cooking, sewing, or constructing would be a key factor in recognizing the value of the student's cultural knowledge to mathematics discourse. Latino parents view mathematics as pivotal to their children's progression through school and their future; thus, Gutstein (2006) reported these Latino families could apply their grasp of mathematics as a tool to understand the 'real world' replete with practices of racism and discrimination.

Thus, the purpose of this four-month study was to forge a genuine, mutually trusting relationship with three migrant, Hispanic families and explore the ways in which the cultural background of these Hispanic families guided their children's understanding and practice of

mathematics literacy (Civil et al. 2008). While engaging in dialogue with the parents and children in their native language and participating in everyday events, I gained an insider's perspective of the mathematics discourse and household resources the parents accessed to help their children's learning (Bogdan & Biklen, 2003; Finders, 1992). Attention was given to the ways in which the parents relied on their prior learned mathematics knowledge as students in Mexico and the role of bilingualism to answer their children's probing mathematics questions. I also focused on the extent to which the family's cultural knowledge paralleled the school's instructional pedagogies, and the dialogic conflicts that arose between household algorithms and the school's emphasis on critical thinking, problem solving, and reasoning skills (Civil et al. 2008). The underlying aim of this research was to "understand through dialogue" (Peressini, 1998, p. 218) the parents' cultural frame of reference that informed their approach toward supporting their children's knowing and doing mathematics.

Review of Literature

The Hispanic parents' recollections of childhood mathematics learning extend back to an era of memorized algorithms used mentally to count, measure, calculate, and to some extent problem solve. In particular, these parents recalled the classroom teacher's emphasis in the early school years to memorize their multiplication facts and to recite the facts in any order—a learning goal that the parents felt was not sufficiently emphasized as much in U.S. schools. In efforts to assist in their children's out-of-school learning, the parents and children's mathematics perspective and ensuing discourse generally leads to conflict between cultural mathematics and reform-based pedagogies; in some instances however, the differences in perspective may lead to a spontaneous learning opportunity. The Hispanic parents' prior experiences, while learning mathematics in school, and their children's need to learn a second language are two other factors

moderating the parents' involvement with their children's out-of-school learning. At the cognitive level, the parent recognizes but does not understand mathematical words and precepts that are presented in the English language. At the affective level, the parents develop feelings of low self-esteem as a result of being [linguistically] excluded from their child's school learning (Civil et al. 2008).

As a third grade teacher for the past seven years, I realized that my students have previously learned and preferred to use different problem-solving strategies during mathematics lessons. For example, I observed that some students referred back to their knowledge of addition facts to solve a word problem involving the multiplication of the digits 5 and 7. Their scratch paper calculations showed me evidence of adding "5" seven different times to arrive at the solution. I observed that other students relied on their knowledge of multiplication facts to numerically portray their mathematical thinking about the relationship between the factors 5 and 7 and their steps taken to arrive at a problem solution. Furthermore, I noted that three of my students, one Hispanic and two African-American who sat in the same row, typically engaged in dialogue with each other as their strategy for understanding and working through the different elements of the mathematics' word problem. From listening to their dialogue, I acquired a clearer perspective of how their preference for sharing knowledge enabled them to reach the solution. To further support my emerging understanding of the students' mathematics knowledge and practices, I followed Carpenter, Fenema, and Franke's (1996) Cognitively Guided Instruction (CGI) model as a framework for placing my children's thinking at the heart of classroom instruction and the interpretation of their preferred strategies for solving problems. The principles that underlie CGI are that teachers make instructional decisions about their classroom teaching based on their knowledge and beliefs about how students learn; students

learn by connecting new knowledge to prior knowledge; listening to students' discourse is critical; and teachers are aware of the knowledge that their students possess at various learning stages so they can provide the appropriate instruction (Carpenter, Fenema, Levi, & Empson, 2000). Furthermore, CGI suggests that classroom teachers know each student's stage of cognitive development with respect to a given content area and that they modify instruction continually to meet individual needs (Carpenter et al. 1996). In implementing a CGI program of mathematics instruction, teachers can change their paradigms toward classroom teaching and instructional strategies with a focus on helping students build on their own knowledge through solving meaningful problems. During whole group, small group or one-to-one instruction, I expended effort to create a learning environment that encouraged student discourse and a forum in which varied problem solving techniques were acknowledged.

Vignette 4: In solving a word problem that prompted the students to determine the amount of change after purchasing two objects, I engaged the students in the following exchange:

Teacher: Children, the problem says that Lee went to the store and bought a book for $0.52 and a pencil for $0.18. If Lee gave the store clerk a $1.00 bill, how much change did he get back?

Timothy: I think that we need to add the two things that he bought, but I don't know what to do next.

Teacher: Good. Timothy, why do you say that we need to add the two things that he bought?

Timothy: We add the two things that Lee bought so we know how much to pay.

Teacher: Very good. Ross, could you continue with Timothy's idea that we need to know how much to pay so we can figure out the change. At this point, Ross goes to the board.

Ross: On the board, he does the addition problem of $0.52 + $0.18 and shows the sum of $0.70. Teacher, you have shown us before that we can take the total price of $0.70 and subtract it from the $1.00 that we gave the store. This will tell us the amount of change.

Teacher: Timothy, can you come back to the board and tell us why we need to subtract the $0.70 from the $1.00.

Timothy: I think we subtract because the $1.00 is what we gave the store and the $0.70 is the total cost of the two things he bought. And we want to find out what is the change.

From these and other classroom experiences in which the children and I worked together to solve mathematics word problems, I became more conscious of their initial tendency to emulate the techniques and language that I had modeled in the classroom. Over time, I also became intuitively aware of their learned procedures to solve multi-step problems using addition, subtraction and regrouping principles alongside manipulatives and visual aids. As noted in (Carpenter et al. 1996) portrayal of CGI, the researchers posited that teachers of mathematics could bring about real reform in classroom pedagogical practices by focusing on the process in which students evolve from solving mathematics problems with concrete materials to connecting abstract ideas with their existing knowledge.

In addressing the question of how to raise the mathematics achievement scores among girls and among African American and Latino students, Sleeter (1997) examined the impact of a two-year multicultural-education staff-development program on 30 teachers, from 18 schools in two school districts in the Midwest, in terms of the teachers' pedagogical practices. In terms of the mathematics piece of the study, the data was collected from 13 observations, lasting 45 minutes, taken in eight elementary classrooms and a high school classroom. From the studies, one suggested practice is to lay aside traditional seatwork in favor of interactive conversations that prompt students to express what they know and work together toward problem solving. In this learning environment, minority students have the opportunity to freely practice their emerging English language proficiency while attempting to grasp and apply the mathematics concepts. A second example of reform mathematics would be to enable students to realize a connection between their lives and classroom mathematics and to empower students to put in motion higher level mathematics reasoning toward issues of social inequity.

Silverman, Strawser, Strohauer, and Manzano (2001) presented an instructive illustration in which children's literature, written in both Spanish and English, was intentionally utilized as a contextual framework to immerse the personal lives and voices of Hispanic students with mathematics discourse. Cognizant of certain universal behaviors, such as measuring, explaining, playing and estimating, found in every culture, the researchers used this knowledge to guide the students' efforts in constructing problem solutions to various mathematical questions derived from events in the story. As the students of a fifth grade class in Greeley, Colorado explored the book, *A Migrant Child's Dream: Farm Worker Adventures of Cholo, Vato, and Pano*—an account of a Hispanic family's trek across several north central states to pick crops, the students used their familiarity with the characters and story plot to envision mathematical problems encountered during the journey. Working in small groups, the students brainstormed a series of questions based on mathematical ideas such as the number of states traveled; the distance of the journey; and an estimation of the elapsed timeline from the start to finish. This style of mathematics learning, scaffolded with relevant children's literature, compelled the entire class to reevaluate their preconceived notions of the Hispanic culture and to appreciate the portrayal of a hard-working family that endured a myriad of life struggles.

Gonzalez et al. (2001) reported the results of the Bridge Project that examined the potential for transferring household mathematics practices to school knowledge.
Through their household visits of Mexican American, African American and Native American households, teacher-researchers attempted to address several issues. One purpose of the study was to explore the manner in which the discourse that characterized classroom practices in mathematics deliberately omitted the perspectives of linguistically and minority students. A second purpose was to understand why minority and linguistically diverse students generally

showed an apparent confidence and skill in practicing household mathematics; yet, the same students demonstrated low performance in a school-like environment.

In designing the study, the researchers focused on finding connections between the mothers' everyday lives and experiences and widely read texts; the majority of mothers were immigrants. In this instance, it was important for the researchers to not only observe and document the household's knowledge in literacy, but also to take an active role in the weekly exchange of knowledge and experience. From firsthand observation and interaction with a mothers' literature circle, that regularly met to complete sewing projects, and the ensuing mathematics discourse on making patterns for a skirt, Gonzalez et al. (2001) reached an important conclusion, "human beings and their social worlds are inseparable" (p. 127). Specifically, the participants shared and collectively assigned meaning to mathematical ideas based on their interaction with each other in an authentic [social] setting.

In their research of parental involvement [especially marginalized groups] in mathematics education, Civil and Bernier (2006) highlighted the Math and Parent Partnerships in the Southwest (MAPPS). This project was a four-year initiative covering several schools in three different states, established to sustain a mathematics outreach program via parent-teacher teams. The investigation involved qualitative data collection methods such as observations, field notes, focus groups, individual interviews, evaluation protocols; and the majority of the observations were videotaped. Through MAPPS, a cadre of bilingual parent leaders was identified to participate in parent-teacher workshops and ultimately help other parents' efforts with mathematics learning at home and at school. The group of parents involved 15 mothers who had an expressed interest in mathematics or were previously involved in school functions. Having established a level of trust with the group of mothers, Civil and Bernier (2006) were able to learn

about the mothers' experiences as learners and facilitators in the mathematics workshops and of the impact that the MAPP project had on the mothers and their family members' lives.

In this dialogic setting, Latino mothers openly articulated their mathematical ideas with the expectation that their voices would be heard and valued as authoritative resources equivalent to the role of classroom teacher. This paradigm shift in engaging parental involvement presumed two critical ideas. First, parent leaders were cognizant of the mathematics taught at their child's school. Second, school officials were predisposed to share this 'controlled' information with parents whose primary language may not have been English and whose prior schooling may have consisted of distinct learning experiences. As these conversations continued, parent leaders expressed a persistent desire to understand a mathematical concept and thus questioned and challenged the teacher's capacity to facilitate a deeper understanding of the concept. And, in several instances, the parents ignored the workshop analogy of calculating height and instead drew on their cultural experiences with cooking recipes to make sense of the mathematical concept, 'proportional reasoning.' The Math Awareness Workshops (MAWS) was a further elaboration on working class, Latino communities taking part in mathematics thinking and learning. The intentional decision to have parents facilitate the workshops separated this project from other initiatives to engage parental involvement in mathematics. Despite the many challenges, such as parent facilitators who at times struggled with explaining a concept based on their prior mathematics learning, there were several benefits for the parents and teachers. The parents and teachers mutually recognized each other's cultural capital as beneficial to the community; felt empathy for each other's struggles in the community; and discovered that their students viewed the parent leaders as capable, intellectual resources (Civil & Bernier, 2006).

The Center for the Mathematics Education of Latinos (CEMELA) conducted various research studies to explore how bilingual families' and students' funds of knowledge influence mathematics teaching and learning in the classroom. One key finding from studies in and out of school demonstrated the criticality of providing and valuing the use of bilingualism as a resource for Latino students and their parents. In addition to providing bilingual materials to scaffold student learning, the research from workshops with Latino parents has shown the immense value of conducting such training in both languages. With the appropriate bilingual resources in place, a dialogic space is created for students, parents, and school teachers to exchange practical perspectives and creative strategies in the context of mathematics learning activities. Through meaningful parent-teacher dialogue, both partners recognize the intellectual and cultural resources that each possesses toward fostering children's competence and interest in mathematics learning (Acosta-Iriqui, Civil, Díez-Palomar, Marshall, & Quintos-Alonso, 2008).

In examining ways of implementing reforms in mathematics education, there has been little attention given to the association between schools, families, and communities as a medium for increasing mathematics achievement. In their analysis of longitudinal data, consisting of academic performance of students, on the same standardized math tests, for two consecutive years at the same grade level, from 18 elementary and secondary schools with diverse student populations, Sheldon and Epstein (2005) examined the impact of targeted involvement activities such as parental involvement on students' mathematics achievement. After controlling for prior levels of mathematics achievement, the researchers identified three common practices: providing parents the information to contact teachers; convening parent-teacher conferences on students struggling in mathematics; and providing additional information to parents about student progress and grades on report cards. The above stated practices, underscored by home-learning

activities involving parent-child discourse and mathematics materials and resources, were considered critical in helping improve student mathematics scores and achievement. Civil (2008) and Gutstein (2006) also reported that that there has been very little research on the connection between immigrant families and teachers and their perspectives in terms of children's mathematics learning. In particular, there is a noticeable absence of research on the potential collaboration of students, immigrant parents, and teachers in creating a challenging mathematics curriculum that pursues a social justice agenda based on community needs (Gutstein, 2006). What is readily apparent is that Hispanic, immigrant families view education as instrumental to their children's future and for improving the well being of the community. Secondly, these families are eager to use their household funds of knowledge [cultural and cognitive resources] to facilitate their children's academic learning (Moll, Amanti, Neff, & Gonzalez, 1992; Osterling, Violand-Sanchez, & von Vacano, 1999; Wadsworth & Remaley, 2007).

Critical Race Theory in Education

The significance of critical race theory. Critical Race Theory (CRT) is a body of literature that has immensely elevated the social consciousness of inequities in the educational system. In scholarly discussions to explain the racial achievement gap, community and academic discourses have attempted to portray the problem in terms of deficits in students or their families. In their view, recent immigrants to the United States such as American Indians, African Americans, and many second-generation Latino groups have generally performed poorly due to deep-rooted curriculum practices and predefined social interactions that favor the majority group. For example, unspoken racial understandings have prompted classroom teachers to use mainstream pedagogies and philosophies in meting out educational projects that favor certain groups. Thus, immigrant students develop a particular paradigm toward learning, for places to

study, and for specific instructional resources (Bartlett & Brayboy, 2005; Dixson & Rousseau, 2005).

In their study of self efficacy and motivation as variables affecting mathematics performance across ethnicities, Stevens et al. (2004) examined whether these variables were predictive of overall mathematics achievement involving a population of 358 Hispanics and Caucasian public high school students in grades 9 and 10. The researchers utilized several instruments, such as the Cattell Culture Fair Intelligence Test to measure the general ability of students 9 (ages ranged from 14 – 17); a task-specific mathematics instrument based on an 8-point Likert type scale to measure the students' level of self confidence; and Harter's (1980) Scale of Intrinsic versus Extrinsic Orientation in the Classroom. The researchers' findings indicated, for example the importance of educators emphasizing the qualities of self confidence and motivation to help address the learning needs of Hispanic and Caucasian students. Similarly, educators must also recognize that Hispanic students, who receive a lower grade, may likely adjust their feelings of self efficacy especially when there is no other available information Also, the students' expectations about successfully performing on mathematics problems may well influence their actual performance even though those beliefs might not correspond with actual ability or prior achievement.

A framework for achieving educational equity. Through CRT, ordinarily, silent individuals are empowered to use their collective voices to confront the almost imperceptible influence of racism and oppression in schools. Furthermore, CRT provides the medium for marginalized groups to give counter stories about their educational experience and to be part of the struggle that brings change in racial and social power (Bartlett & Brayboy, 2005; Dixson & Rousseau, 2005). Ladson-Billings (1999) poignantly stipulated, "Adopting and adapting CRT as

a framework for educational equity means that we will have to expose racism in education and propose radical solutions for addressing it" (p. 27).

To further the aims of critical race theory, Ladson-Billings and Tate (1995) reported that culturally specific pedagogy is a way to change the dynamics of classroom learning in mathematics. Its' underlying aims are to reform traditional mathematics instruction that has often emphasized memorization and rote learning and created a divide between the student's daily life experiences and classroom learning. In using culturally specific pedagogy, that acknowledges the student's language, gestures, and history, the classroom teacher places a priority on student academic success, cultural competence, and relevant mathematics. By providing poor, marginalized groups the opportunity to develop competence in higher level mathematics; classroom teachers empower students with the capacity to use critical thinking skills toward understanding and eliminating social injustices in their community.

Seeking social justice via the algebra project. In the Algebra Project, we find a significant example of a grassroots initiative involving all stakeholders in the education of children that ultimately empowered its entire community to produce change—in terms of access to a rigorous, culturally relevant curriculum and in terms of organized action against social inequalities. It is this localized, neighborhood, and community-wide initiative across all cities in America that is essential in addressing the challenges facing English Language Learners; their parents who have limited or no English language skills; and the educators who are the stewards in the schools and classrooms for preparing our future citizen leaders.

During the early 1990s, Moses, a civil rights activist and his colleagues, under the guidance of Ellie Baker, an experienced veteran of the black freedom struggle led a grassroots initiative named the Algebra Project to enroll African-American middle school students in

higher-level mathematics courses (Moses & Cobb, 2001). The Algebra Project was not another attempt at school reform that traditionally depended on the perspectives of university researchers and academic experts to introduce yet another pre-packaged curriculum. Instead, what was remarkable about the Algebra Project was that it represented a rallying call—a community-wide project for those most oppressed—the poor, the disenfranchised, and the ordinary person to organize and advocate for fundamental social changes with the aim of attaining just schools. A key precept in this grassroots movement was that students must develop a broad literacy competence in algebraic concepts in order to gain the requisite knowledge and critical analytical skills to pursue advanced mathematics courses and thereafter compete in a technology-driven society. Thus, it was imperative that students develop a level of comfort in manipulating symbolic representations associated with Algebra, i.e., a problem-oriented, rigorous mathematics curriculum that resembled the higher level mathematics instruction offered in schools across the United States. Inherent in this civil rights project for increased racial equality were the following implicit principles. Those underlying principles were the involvement of educators, parents, and students; the organization of young civil rights workers immersed within the community; and the empowerment of young people as advocates for their own education. An important observation is the community's effort to seek relief from deprived educational opportunities genuinely represented a radical act—an act for social justice!

Gaining access to higher mathematics via the QUASAR project. In the QUASAR Project, we find a second illustration that speaks directly to reforming mathematics instruction; specifically, students who ordinarily have been academically tracked into bilingual or special mathematics classrooms are now integrated with their peers; and classroom teachers revamp traditional instructional approaches to accommodate a diverse classroom. The QUASAR Project

incorporates several instructional approaches that acknowledge and respect the linguistic and mathematics content needs of English Language Learners. The educational reform initiative incorporated several ways of facilitating student learning: journal writing; cooperative groups; multiple problem solving strategies; valuing distinct perspectives; and the teacher's commitment to relate the student's everyday life experiences and cultural heritage with classroom discourse.

Occurring also during the early 1990s was the inception of the QUASAR Project, signifying Quantitative Understanding: Amplifying Student Achievement and Reasoning project, an educational reform initiative (Silver & Stein, 1996, p. 476). The founders [math teachers, school administrators, and university educators] of the QUASAR Project worked to provide a mix of traditional and high level mathematics instruction to poor, culturally, and linguistically diverse students at six urban middle schools. The schools were selected based on a review of applications prepared and submitted by a working team at each school site. Student enrollment at these QUASAR schools consisted of approximately half African American, about one third Latino, and about one eighth Caucasian. Additionally, most QUASAR schools served subgroups of student populations in which English was not the primary language; nor was English the primary language in household discourse. Furthermore, due to a variety of socio-economic factors such as health care, housing, economic security, and transportation, there was a significant level of student turnover.

The researchers purported that poor and minority students were disproportionately represented in more complicated mathematics courses requiring thinking and reasoning skills. Thus, these students generally scored lower in comparison to affluent and White students on standardized tests. In view of this realization, the QUASAR schools sought to engage its students in learning tasks that reflected the Curriculum and Evaluation Standards for school

mathematics published by the National Council of Teachers of Mathematics (1989). The instructional pedagogy in the QUASAR Project allowed students to use multiple symbols and visual models to clearly understand the association between fractions and decimals. Furthermore, there was an expectation for explanation and justification and a reliance on each other; or as Silver (1995) noted "connected knowing" as part of their thinking and exploration of mathematics ideas. Another distinctive feature of the QUASAR initiative was that the poor and minority students gained access to mathematical topics such as geometry, algebra, and statistics. These topics were not ordinarily covered in traditional middle school mathematics instruction. To increase the capacity of these students to perform sophisticated mathematics tasks, it will be necessary, albeit challenging, [due to turnover and school regulations] to orient classroom teachers with new strategies for teaching mathematics. In examining the challenges and successes of the QUASAR experience, there are indications of more opportunities for economically, disadvantaged students to learn meaning-oriented mathematics; thus "The revolution of the possible has begun" (p. 516).

What has been discussed are provocative, radical approaches to classroom mathematics reform—especially for the minority, disenfranchised, and poor children that enter the hallways of public schools across the United States. As noted in the Algebra and QUASAR projects, the process of taking steps toward long-lasting social change are difficult when balanced with individual fears, limited English language proficiency, or even the institutionalized processes that mandate a particular pedagogy for mathematics instruction. Yet, as Moses and Cobb (2001) noted, "You who are poor and oppressed: your need, you must make change. You must fashion a struggle" (p. 19).

Purpose of the Study

The purpose of this study was to conduct an in-depth study of three Hispanic families to understand the manner in which cultural knowledge, prior experiences, and frames of reference were critical resources in at-home mathematics learning, and how family-school dialogue could enrich the relevance of at-school learning (Bazron, Osher, & Fleischman, 2005; Ben-Yosef, 2003; Diez-Palomar, Simic, & Varley, 2006; Civil, 2008; Allen, 2008). Gonzalez, Andrade, Civil, and Moll (2001) stated that classroom teachers can learn of the student's daily life experiences and skills [referred to as the funds of knowledge] through frequent visits to their student's household. Ginsberg (2007) noted that teachers can show their respect toward families of new immigrants by making home visits, which can help inform educators of the household learning context. The sense of alienation or disconnect was defined as "a lack of knowledge of cultural and societal contexts of second language literacy" (Fitzgerald, 1993, p. 641). As teachers and parents begin to openly communicate and work together to connect school and at home literacy practices, meaningful partnerships can become the framework for promoting student success (Paratore, 2005). In forging relationships between the home and school, Evers, Lang and Smith (2009) stipulated efforts to link classroom literacy with the student's home experiences such as their parent's written stories can demonstrate a respect and appreciation for families of different cultures.

As part of this ethnographic study to get into these families' thinking of mathematics, I explored their perspectives via the following research question: What other ways for doing and representing mathematics do households possess to help strengthen the home-school connection?

Context for Proposed Study

An Ethnographic Approach: Forging New Bridges between Family and School via Ethnographies

Bogdan and Biklen (2007) discussed the paradigms or implicit assumptions of a qualitative research design with the terms, "rich, thick contextual descriptions," and "naturalistic data" to highlight the reflective approach toward data collection. In contrast to fields of research which draw attention to other's behavior without any concern for the significance of their actions, Emerson, Fretz, and Shaw (1995) expressed their views of ethnographic research and emphasized, "The object of participation is ultimately to get close to those studied as a way of knowing and understanding what their experiences and activities mean to them" (p. 12).

Drawing on Hispanic families' linguistic and cultural diversity. Allen (2008) reported that home visits with three families with multilingual students permitted teachers to establish a level of "confianza" or mutual trust and to create a spirit of reciprocity in which both parents and teachers support each other and the student (pp. 22-23). Commins (1989) addressed the importance of ethnographic studies in order to better connect their students' lives with school learning and explained that by viewing the students within the context of their homes and families, "It was possible to begin to understand their linguistic proficiency, their school performance, and their attitudes about learning and themselves" (p. 30).

Thus, I chose an ethnographic research design because I was very interested in observing and studying the behaviors of the Hispanic parents in their home setting so that I could learn how to support their children's mathematics literacy (Bogdan & Biklen, 2007). This group of three Hispanic families was instrumental to this ethnographic study because they identified with each other, i.e., migrated to the United States within the past four to ten years to provide a better life

for their children. Also, they lived and interacted with each other in one community located in a southeastern state; and they shared common expectations for their children's school learning (Bogdan & Biklen, 2007). While tutoring their children after school; helping the parents learn the English language; or making home visits to offer my support, I became more attuned to their persistent, respectful voice; their struggle to find connections within this new country; and their unwavering hope to impart a lasting legacy on their children.

The researcher's role. My researcher's voice (values, assumptions, and biases) was influenced by various life experiences. I was born in 1955, as the second of five children, of Mexican parents who immigrated to the United States in an effort to provide their children a better life. In 1973, at the age of 18, I entered military service and subsequently served a 30-year military career in the United States Air Force. Following the conclusion of my military career in 2003, I became an elementary school teacher at a K-3 inner city public school in the southeast United States where I taught for seven years [the first year as an English as a Second Language teacher and the last six years as a third grade teacher]; the school has shown a gradual increase in the population of English Language Learners. Of the 830 enrolled students, there is approximately a 17% English Language Learner (ELL) student population. As I was the only bilingual (English-Spanish) speaking teacher at the elementary school, I was often asked to assist school administrators and fellow teachers to communicate with non-English speaking Hispanic parents.

Setting. This four-month study involved home visits with three Hispanic families who lived in the same community; their children attended school in the same school district. The three families resided in a county of approximately 223,510 citizens, located in the southeast region of the United States (2000 U.S. Census Bureau). Within this school district there were 39

elementary schools, 13 middle/junior high schools, and 8 high schools. Some schools were classified as Title I schools because of federal funding provided to assist with economically and educationally disadvantaged students. The children of these Hispanic families attended Greymark Elementary School, Lilac Peterson Elementary School, and Redgrass Elementary School (all school names are pseudonyms). Greymark Elementary and Redgrass Elementary were classified as Title I schools. As of the 2009 - 2010 school year, the student enrollment at this inner city public school was comprised of approximately 82% African American; 16% Hispanic; 1% White, and about 1% of other cultural ethnicities. With over seven years of classroom teaching experience (that included one year as the ELL teacher) at an inner city school composed of a culturally diverse student community, I served as the researcher and ethnographer for this study.

Participants. The three sets of participating Hispanic parents and their families migrated within the past four to ten years from Mexico to a southeastern state in the United States (Ochoa & Rhodes, 2005). In the majority of cases, the non-English (or limited) speaking Hispanic parents worked about 10 - 12 hours daily [late afternoon to midnight] at poultry processing centers, retail stores, restaurants, or lawn care management. Second, this research study drew additional insight about the connection between Hispanic families and schools and how those relationships facilitated mathematics learning from a Latino religious leader who served in this southeast region of the United States for the past 20 years. Born in the country of Ecuador, this religious, community leader served for the past five years as the sole Spanish-speaking minister at a catholic church for Mexican, Guatemalan, Nicaraguan, and South American families. Within this church community, he provided a wide array of church services and routinely helped these Hispanic families resolve various problems in adjusting to life in the United States.

Methodology

Interview Process

Data was collected from April through July, 2010 while conducting visits to three Hispanic households and the religious, community leader. The intent was to collect enough information from the three families and the religious, community leader to answer the original research question prompting this study and to render rich, thick descriptions of the setting and the shared experiences. During the first month of this study, I conducted weekly, one-hour to three-hour observations of the three Hispanic households followed by the writing of field notes. Bogdan and Biklen (2007) indicated that the researcher's awareness of the need to write field notes, after leaving the setting, would compel the researcher to concentrate while gathering evidence; similarly, the act of note-taking encouraged the researcher's mind to replay the events, i.e. to internalize what has been observed. The field notes were taken during my observations of parent-teacher dialogue on mathematical ideas; conversations with parents about their child's mathematics homework; and participation in family activities involving doing mathematics. In conjunction with the field notes, I recorded observer comments that reflected my thoughts, refined understanding, or perhaps an interpretation about the ideas that I had recorded and experienced. I also used those notes to construct general interview questions to incorporate during the one-to-one interviews (Emerson et al. 1995).

Between May and July, I conducted two different one-on-one bilingual, 30 to 45 minute audio-taped interviews with the parents of each family. In these interviews, the conversations addressed the pivotal research question in terms of how their culturally learned mathematics algorithms connected with the instructional strategies used by their child's classroom teacher. Another set of questions dealt with school teachers and administrators hearing the voices of

migrant, Hispanic voices in making school learning culturally relevant to their child (Kvale & Brinkman, 2009). The first of these interviews started in the second month, and the interviews continued into the third and fourth months of this study. These one-to-one interviews were conducted during various family settings. These interviews generally involved a few unstructured, open-ended questions designed to elicit ideas and opinions from the parent (Creswell, 2003). Next, I conducted a single 45-minute to one-hour bilingual, focus group interview with multiple members in each of the three Hispanic families in their homes to gather emerging views of their voice on household mathematics practices.

This ethnographic study also included monthly, one-hour discussions in the Spanish language with a religious, community leader. I believed that his personal experiences from his migration to a new country and frequent dialogue with the Hispanic congregation of his church community helped to clarify the data collected from the three Hispanic families. I maintained an ongoing dialogue with this community leader throughout the study because he served as a source of triangulation for the experiences of the Hispanic families and their difficulties. He aided me with the interpretation of data shared with him anonymously (Creswell, 2003). To organize and prepare the data for analysis, I transcribed verbatim the audio-taped one-to-one and focused group interviews; typed the field notes, and sorted the data based on where I collected the information such as at the kitchen table, outside the home for a family barbecue, or in a family room. Field notes were reviewed regularly (Emerson et al., 1995).

Refinement of Thinking Process

As I proceeded in this study on mathematics learning, within the context of their homes and families, I decided which general research questions, from my initial list, were relevant to this ethnographic study, and which ones should be revised to guide my subsequent research

(Commins, 1989). These research questions were critical because they guided my effort in gaining a deeper understanding of the families' setting and context in which household interactions occurred. For example, initially, I was focused on the parents' childhood experiences in learning and practicing mathematics. Through candid conversations with the families, I learned about the parents' upbringing in a school environment that embraced rote memorization and use of algorithms to perform calculations in their mind; and of their constant struggles in mentoring their children to similarly adopt such practices. So, I revised my questions to learn more of the parent-child conflicts and of how these families reached resolution to support their children's school learning. Second, I initially wanted to know how each family used their household, cultural resources to support their children's mathematics learning. I originally thought each family depended exclusively on school-provided learning materials such as textbooks, basal readers, or teacher handouts to guide out-of-school mathematics learning. Through many hours of Spanish language conversations at the kitchen table, their trailer porch, and at family events on weekends, I realized each household drew upon a multitude of family and neighborhood resources. I often listened to bilingual conversations between parents and children in attempting to understand a mathematics concept and later work together to complete a homework assignment. I watched as a father and son worked outside to rake leaves and naturally engage in conversation about the parent's upbringing on a Mexican ranch where he used multiplication, measurement, and estimation to construct a wood fence. In several instances, I observed an older sibling or a neighbor, moderately fluent in the English language; mediate the mathematics dialogue between the parents and a younger sibling in order to solve a word problem. And, on several occasions, I observed a parent sing a childhood Spanish language melody, or a parent model the use of algorithms via mental mathematics to promote their child's

desire to learn mathematical ideas. As a result of these observations, I revised my line of questions to inquire in what other ways were the family's knowledge and everyday experiences scaffolding and influencing the children's understanding and practice of school mathematics.

Analysis and Interpretation Process

To arrive at the delineation of the three major sections, focused on the Hispanic household's ways of viewing and practicing mathematics, portrayed under the results section, I analyzed and interpreted the field data collected during four months of household visits. From the inception of this ethnographic study, I realized that the examination of data would involve subjective interpretations of life experiences and perceptions of home-school connections. Thus, I considered the importance of utilizing triangulation as a strategy to find corroboration of emerging themes amongst the three Hispanic families and the community religious leader. By recording narrative style field notes after each household visit, I created an ongoing, detailed discussion of the multitude of viewpoints, questions, illustrations, and quotations from family members and thus gained a more accurate portrayal of that particular day's household experience. Additionally, after having transcribed and translated a particular audio-taped interview, I used member-checking and provided the Hispanic families and the religious community leader the opportunity to offer me feedback regarding the transcription and translation of the interview to ensure that my perspectives accurately corresponded with the contextual meaning that the parents or the community religious leader intended. This strategy of field note-taking served to help me, later in my data analysis, to corroborate similarities or differences in household approaches toward mathematics; and to create follow-up questions to ensure that my own interpretations and conclusions accurately reflected the parents' life experiences and perspectives.

At the beginning of my 55 field visits, I created a preliminary coding system of words and phrases. These tentative categories, such as the parents' emphasis on solving a computation problem in their mind; using everyday household events to teach mathematics; or reliance on their older children to mediate household conversations were created to represent the families' ways of thinking about their children's school in the United States; the ways in which the Hispanic families communicated; my own perspective; and repetitive patterns or regularities in one or all three families (Bogdan & Biklen, 2007; Miles & Huberman, 1994). As I began to make sense of the data, I contemplated what the families were saying and how they were saying it. For example, each household repeatedly expressed to me their frustrations; and at the same time their resourcefulness in finding ways to understand school correspondence or school assignments usually written in the English language. At times, the parents relied on their prior schooling in Mexico; the bilingual skills of their oldest child; or on a trusted neighbor to attain some understanding of the school material. From my analysis of numerous field notes, I also came to realize the parents' desperate desire to understand their children's school system; but, the parents were often unsure of how to gain access to the school knowledge. For these parents, being able to support their children's at home mathematics literacy, was a daily struggle in understanding the English language and addressing their children's academic questions. After collecting the data from all 55 field visits, I utilized the initial coding categories to combine emerging patterns of behavior consistent across all three Hispanic households. For example, in analyzing the data I recognized the immense role of older siblings, as a language broker between the parents and younger children, during mathematics conversations. Thus, I assigned the code "language broker" to encompass those repeated instances in the household. At this juncture in the data analysis, I also included particular categories to capture distinct parental perspectives or

household mathematics practices. For example, in gathering background data about a parent's own childhood experiences and how those experiences influenced her approach in teaching her children to know and use mathematics, the mother recounted, "While growing up in Mexico, I had to work at my mother's food store and learn how to quickly count money and calculate the customer's change in my head. So, I think it is better for children to learn and practice that way of mathematics." In this instance, I coded the data as the parent's culturally learned use of mental mathematics. Having organized the data [observations, interviews, quotations] into discrete categories, that represented the perspectives of the three different households and the Hispanic religious leader, I next created a matrix to reflect further synthesis of the interconnections between the collected data and to visually correlate coding categories with words, phrases, events and quotes across the three Hispanic households (Miles & Huberman, 1994). As described in Miles and Huberman (1994), I continued the process of coding and recoding patterns of behavior until I had identified a sufficient number of repetitive behavioral patterns to ensure the results were credible and consistent with the data collected. Last, I utilized peer debriefing and collaborated with a member of my advisory planning committee so that a neutral perspective could examine the manner in which I had analyzed and interpreted the data findings. As a result of this ethnographic study, my expectation was to bring the collected data together, frame the data in relation to theory, and then explain the significance of my findings to fellow educators.

Through the process of immersing myself, within the everyday lives of the three Hispanic families, over four months and cross-checking firsthand data with the community, religious leader, I reached several conclusions. First, these three Hispanic families were genuinely interested in their children's education; however, the parents often struggled as school learning

was in the English language. Second, these families possessed household cultural resources that at times were ignored or undervalued at their children's school (Gonzalez, Moll, Tenery, Rivera, Rendon, Gonzalez, & Amanti, 1995). Third, classroom teachers should explore the potential benefits of permitting bilingualism as a strategy for supporting English language learners in their quest to express themselves in the written and verbal form. Last, it was imperative that schools explore ways to create bridges of communication based on mutual respect, trust and openness with Hispanic parents.

What now follows are the results of discovering the silent voices of these three Hispanic families; their hopes, and their daily struggles for their children's academic success in U.S. public schools. To better guide the reader in understanding the significance of this ethnographic research study, involving three migrant Hispanic families, I arranged the findings into three major sections. First, a discussion is presented on differences in views toward mathematics between Mexico and the United States. Second, the reader is presented practical, everyday examples in which the household practiced mathematics. Last, the reader is given examples of parental voices for an equivalent role next to the school teacher in making mathematics learning relevant and rigorous.

Results

From the above analysis of collected data, I constructed an outline of the three major themes and subtopics to guide the actual reporting of the results and drawing of implications for educators. As each major section is discussed, the reader will gain insight into several underlying themes that characterize the home-school connection and parents' efforts to facilitate their child's out-of-school mathematics learning. In several instances, I included an English language

translation of the original Spanish language remarks given by the parents or community religious leader.

Differences in Views between US Schools and Hispanic Schools on Approaching Mathematics

Doing math algorithm in the mind versus doing mental mathematics. In going to elementary school in the rural section of Mexico, the Hispanic parents reported that their teachers taught them the expression, "Sumamos cuando contamos lo que juntamos" meaning that we could use addition to count things that we collected. Often, there was no tablet paper or enough pencils in our one-school classroom so the teachers instructed us to "hacer la cuenta por la mente" meaning "to do the addition calculation in our mind." In the classroom, we did many oral and written practice problems about things taking place in our lives so that we could gradually memorize the steps for quickly adding numbers in our mind and calculating what was their sum. Examples of what we practiced on were the number of tortillas to cook for the family dinner; the number of farm animals to feed; the number of nails needed for a picket fence, or the number of sacks of beans and corn to buy. At least weekly, we stood beside our desk or in front of the classroom and recited aloud the counting of numbers such as 1 + 1 = 2, 1 + 2 = 3, 1 + 3 = 4 and so forth.

It was easier to learn how to quickly add numbers in our mind because our parents often took us to the open farmers market or the corner store where they sold lots of meat, baked goods, vegetables, and fruit. While there, our parents modeled for us the process of counting "in their head" as they called it—for example a basket of red chili peppers, two baskets of tomatoes, and three baskets of apples. They told me that as they took one basket; they would "usar nuestro célèbre para contar" meaning use their mind to count. As they took the additional two baskets

they added [1 + 2 = 3] in their mind and then they added the other three baskets [3 + 3 = 6]. One Hispanic parent recalled her own mother's advice about being able to do the calculations in the mind very quickly while buying goods at the farmer's market. Her parent often said, "Cuando va al mercado, tiene que hacer la cuenta de lo que compro. En su mente, tiene que sumar lo que está gastando para saber cuánto gasto en total." ["When you go to the market, you have to be able to do the count of what you bought. In your mind, you have to be able to add what you are buying so you know the total cost.] (Researcher field notes, June 29, 2010)

One Hispanic parent related a childhood experience in which she used the inverse of division to solve a mathematics problem. She learned to sew buttons on shirts and blouses for her siblings and ranch hands and then determined the correct distribution or "reparto" of buttons per shirt based on her knowledge of being able to multiply in her mind. In one instance, she might have 24 buttons and each shirt or blouse would need 6 buttons; thus the question in her mind was how many shirts or blouses could she complete? Through rote memorization of multiplication facts, she solved the division algorithm in her mind by asking herself, "¿Que numero multiplicado por seis da 24? In other words, "What number when multiplied by 6 equals 24? These Hispanic parents reiterated that their mastery of division was directly related to their knowledge of how to solve the multiplication operation in their mind.

Exemplars of parent-learned cultural mathematics thinking in the mind. The Hispanic parents of one household described how they had learned to solve a three-digit subtraction problem (problema de restamos o quitamos). What follows is the parent's explanation of the solution process.

The problem that they posed was 237

<u>- 49</u>

In her mind, the parent sees that the bottom digit "9" in the ones place is larger than the top

> digit “7” in the ones place. Thus, the parent performs the regrouping operation in her mind in order to perform the required subtraction function of 17 - 9. At this point, the parent writes the digit “8” in the ones place as the beginning of the answer. The parent makes no additional markings to show her mathematics thinking.
>
> Having changed the digit “3” in the tens place to a “2” the parent performs the regrouping function in her mind in order to change the digit “2” to a 12. At this point, the parent goes ahead and performs the subtraction of 12 – 4. While the parent continues with the solving of this problem, there is no demonstration of the steps or her mathematics thinking being used to solve the subtraction operation. At this point, the parent writes the digit “8” in the tens place as part of the answer.
>
> In this final step, the parent writes the digit “1” in the hundreds place as part of the final answer, 188. The parents explained that in Mexico the teacher reminds the students with the message, “Solo escriba el resultado en su papel” meaning to only write the result on paper. In contrast, these same parents have noted that their children, who have attended school in the United States, have been instructed to demonstrate the regrouping process and all steps involved in solving the problem. (Researcher field notes, July 5, 2010)

Similarly, another Hispanic parent provided the following portrayal of how he solved the division problem by performing the multiplication algorithm in his mind and not showing evidence of any mental reasoning.

> The problem that he approached was 18 ÷ 8 = x
>
> He reflected on how many 8s could be divided into 18. Having done the multiplication algorithm of 8 x 2 in his mind, he reached a result of 16 and concluded that only 2 (8s) could be approximately divided into 18 with a remainder of 2.
>
> This parent explained that since the multiplication of 8 x 2 equaled 16, he then quickly performed the subtraction between the result of “16” and the number “18” in his mind. The parent further explained that in Mexico the students were taught not to portray the mental processes in solving the division problem. While the parent provided the narrative to explain how he reached the correct answer, he did not use any of the mathematics terms such as dividend, divisor, or quotient. (Researcher field notes, June 24, 2010) (See Appendix 5)

Conflict within household about parental and school forms of mathematics. Two Hispanic parents commented what they had tried to do when their children were first learning about division at school. Here, the parents tried to teach their children the culturally learned practice, assimilated through schooling in Mexico, for solving a two-digit division problem. The

parents accentuated the merits of independently performing the required subtraction and multiplication operations in their mind without annotating the delineation of their mathematics thinking (see Appendix 5). In the parents' view, their child's rote memorization of the multiplication tables or their ability to quickly perform math calculations in their mind was evidence of successful mathematics learning. However, parent-child conflicts in their native language often arose during household conversations on the differences between home and school pedagogical practices used to solve multiplication and division word problems. In these intimate household conversations, the Hispanic parents defended their cultural value of using one particular, memorized algorithm and giving one final answer. Conversely, their children spoke of classroom practices that involved working in small groups, expressing aloud their thinking, and even using drawings and journals to demonstrate what they knew about the problem. Throughout these parent-child interactions about mathematics learning, the parents acknowledged their lack of familiarity with the vocabulary and the purpose for understanding multiple ways of solving mathematics problems. In attempting to apply their parents' cultural approach toward school mathematics the children often became confused, even frustrated since they could not perceive a meaningful connection. In these instances, the children quietly disregarded the parents' math algorithms and instead utilized the school's mathematics strategies involving a step-by-step process to demonstrate their thinking. In turn, the parents have become disillusioned and now believe their children are changing and gradually switching to American mathematical ways of thinking. These parents have almost given up on inculcating in their children their culturally learned practices of simply calculating in their mind the final answer to a mathematics problem.

Parents Activating Their Child's Out-of-School Mathematics' Knowledge

Engaging their children in daily practical experiences using mathematics. From the parents' standpoint, it was vitally important that their children have opportunities to gain a practical knowledge of mathematics referred to as "las cuentas diarias." Underlying the parents' efforts to prepare their children for a future in the United States was their own recollection of growing up in Mexico and participating in 'real life situations' such as comparing prices while grocery shopping; measuring fabric for sewing clothes; or counting money for a bank transaction. A father related a decision to include his 12-year old son in a renovation project to build a screen porch in front of their trailer home. At different stages in this project, my son learned how to use an I-beam level to ensure each post was parallel with the floor and how to use a framing square and a tape measure to determine the correct length and width of each screen segment. He also learned to use multiplication facts to calculate the number of nails to secure the screen to each pole around the porch frame. For the parent, this was a relevant life experience for his son to learn and then apply mathematics. One Hispanic mother talked about having her nine-year old daughter accompany her to the city utility payment center to make the monthly bill payment. While still at home, the mother showed her daughter the amount owed and the mix of dollar bills and coins needed for the payment. At the payment center, the mother coached her daughter to count aloud the payment sum and then calculate in her mind the expected change from the office clerk. As a father and his son raked several piles of leaves from an oak tree just outside their home, the father engaged his son in a dialogue about predicting the number of large trash bags needed to store the leaves and the approximate weight of each trash bag once filled with leaves. In each of these household activities, it was the parent's aim to convey their

knowledge of daily mathematics and to enable their child to form a meaningful connection with school mathematics.

Communicating high expectations for their children to learn/use mathematics knowledge. In all three households, the parents returned from a full day of work and made a conscious decision to allocate the time to learn about or help with their child's completion of the mathematics school work. Even though it was shortly after dinner or just before bed time, the parents sat next to their child at the kitchen table or on the living room sofa. Although the parents may not have fully understood the mathematics problem that their child was talking about, it was their physical presence and love "referred to as cariño" that strongly articulated the parent's hopes for their child to do well in their academic studies. And, based on the extent of their prior mathematics experiences, the parents lent their support with their child's homework assignment. In other instances, the lack of mathematics knowledge prompted the non-English speaking parents to bring their child to a bilingual-speaking relative or friend in their neighborhood who helped the parents understand the assignment and then helped the child complete the assignment.

Two Hispanic families voiced their hopes of their children eventually learning the school mathematics ideas taught in the United States in order to help those less fortunate in their community or other Mexican families recently immigrated to the United States. With emotion in their words, these families talked in their native language about their dream of their children becoming an advocate for others. The parents' aspirations were that their children would readily use their knowledge of the English language and what they had learned at school about numbers to mediate for others concerning struggles with housing or work applications, immigration, tax papers, and litigation documents. For the present, the parents realized the immense sacrifices in

working long hours and preparing their children for their future in America. At the same time, their legacy in this new country would be that their children could help initiate changes in the community grounded in their parents' heritage and what they had learned in school mathematics.

Using native language or bilingual abilities in household mathematics discourse. Finding a way to connect with their child's conceptual learning of school mathematics was often an exercise in bridging the parent's native language with the school's sole use of the English language. In some instances, the parent and child's two-way discourse in their native language permitted the parent to assess the child's thinking in using an abacus to add or subtract. In another instance, the parent might ask questions while his child calculated in his mind the dollar bills and coins referred to as "billetes y monedas" when counting money at a bakery referred to as "panaderia." There were also a multitude of other instances in which an older sibling used their emerging English language fluency as a learned strategy to bridge a parent's and a younger sibling's mathematics thinking. For example, in a household conversation about two-digit subtraction, the older sibling routinely code switched to connect the mathematical term "subtract" with its corresponding Spanish language equivalent "restar o quitar." As part of this household dialogue, the older sibling used the purchase of $23.00 in tortillas and baked goods from "el Mercado" or the corner store and the presentation of $40.00. Secondly, the older sibling used English and Spanish language terms interchangeably as he articulated the mathematical terms and thinking process learned at school to calculate the expected change from the store vendor. In a separate setting, an older sibling with a moderate level of English fluency spoke in the Spanish language cognate "multiplicación" in place of the English pronunciation for "multiplication" to engage his younger Spanish-speaking brother in a mathematics discussion. Having provided this linguistic bridge, the older sibling was able to easily segue in both

languages with a practical example involving the purchase of five segments of rope, each being 9 feet long, to construct a clothesline for use outside their home. The older brother's illustration included a walk outside of their home; the use of tablet paper to perform the addition algorithm of 9 + 9 + 9 + 9 + 9, which his younger brother was already familiar with; and the use of a multiplication algorithm 5 veces 9 pies es: 45 or 5 x 9 = 45. The parents declared that these everyday household situations have allowed the parent and child to gain a keener sense of each other's mathematics thinking and understanding as they involved relevant questions and replies in their cultural language.

Parental Expectations for Expressing Their Cultural Voice in School Mathematics Instruction

Ongoing dialogue with classroom teacher and other Latino parents. Overwhelmingly, these Hispanic parents expressed their desire for the classroom teacher to acknowledge them as a mutual partner with specific talents--more accurately, as a credible source of knowledge for their child's mathematics learning. As a partner, these parents wished to have an informal venue to freely express their 'informed' cultural voice alongside other Hispanic parents in the design of classroom mathematics instruction that was culturally relevant to their children. These Hispanic parents readily acceded that their limited proficiency of the English language was a formidable barrier in knowing the American ways of teaching mathematics. Nevertheless, their resolve in making a difference for their children was the motivation for collaborating with other parents and sharing their prior schooling experiences in Mexico with the classroom teacher. It was these parents' contention that a critical first step in supporting their children's academic experience was learning to use the English and Spanish languages interchangeably. And, a second step was learning the pedagogical practices their children were learning in their mathematics classroom.

In this manner, these parents generalized; there might be a confidence, referred to as "confianza" amongst Hispanics, to establish a lasting home-school connection based on a reciprocal dialogue on pedagogical practices used to teach mathematics.

Co-teacher—sharing cultural practices and experiences. One bilingual parent boldly expressed the expectation of asserting a more active voice in his child's mathematics classroom. It was his belief that by sharing several examples the entire class might better understand his son's heritage. This parent hoped to portray how the accumulated family and community knowledge that his 13-year old son brought to the classroom could be viewed as a starting point for understanding the mathematical ideas presented at school and for building new knowledge. This parent excitedly talked about his son learning to use measurements in helping make a small book cabinet for their living room and using a kitchen scale to weigh different food ingredients in helping make 500 tamales for a family New Year's celebration. Believing in the collective strengths between the school and home, it was this parent's assertion that other bilingual parents could inform the classroom teacher's pedagogical practices. He expected that an understanding of the classroom and household pedagogical practices could produce the needed changes in how mathematics instruction was traditionally presented to Hispanic students in the classroom. This parent expressed his belief that his child and other Hispanic children might be inspired to find ways of using mathematics to solve problems in the neighborhood if the school teaching of mathematics placed value on their own cultural experiences. The parent's visible enthusiasm for establishing a working relationship with the school and being involved in his child's academic learning suggested his desire to take a leadership role in forging a three-way pact between the classroom teacher, himself, and his child.

Participating in a neighborhood/school outreach center to learn English and mathematics. It is an elusive goal for these Hispanic parents to frequent the classroom setting where their child experiences mathematics learning. These immigrant parents often do not participate in their child's school due to their inflexible working hours. Other reasons include having only one family car or the timidity of talking about mathematics with the classroom teacher—who only speaks in the English language and is culturally viewed as the authority for school teaching. Yet, each Hispanic parent repeatedly articulated a belief that their child's academic success was integral to their future in the United States. Thus, they hoped for the opportunity at someone's home in the neighborhood or at a school outreach center where [bilingual] teachers and others could help Latino parents to read, write, and speak English and teach them basic mathematics. In this alternative setting (on weeknights or on Saturday mornings), these non-English speaking parents believed that school officials and immigrant families might assemble and without fear or embarrassment develop an ongoing dialogue about the Hispanic family's cultural strengths and life experiences. With great optimism, the parents desired their cultural heritage to be utilized as a framework for collectively reforming the ways that their children were routinely taught school mathematics and for attaining equity of opportunity and academic success for Hispanic students.

Discussion

Viewing Their Children's School Mathematics through a Cultural Lens

The findings from this four-month ethnographic study add a unique bilingual perspective to the growing literature on how the immigrant, Hispanic household's informal mathematics knowledge and cultural experience influenced their child's mathematics learning. The parents and children in each household were frequently engaged in dialogue—mostly in their native

language, about the best ways for approaching a mathematics number or word problem. On the one hand, the parents arduously articulated the merits of memorized algorithms for adding, subtracting, and, multiplying that did not require collaborative or explained thinking. It was a situation in which the parents had efficiently learned a variety of algorithms and when to utilize them to solve mathematics problems but without as Reason (2003) noted, "The appropriate language to form links within mathematics ideas without resorting to memory" (p. 184). It was just as commonplace to observe the parent mentoring the inquiring child on the practical role of mathematics for improving their future circumstances in society. Within these intimate conversations, designed to encourage their child to follow in their footsteps, the child respectfully advocated on behalf of the school's approach that affirmed a visible, collaborative reflection of how a mathematics problem was to be solved. Civil (2008) explained that Latino parents viewed their children's mathematics through a cultural lens, nurtured from their own experiences that valued repetition and rote memorization as mathematics learners, while attending school in Mexico. Furthermore, the manner in which the parent interacted with their child's mathematics learning in the United States was influenced for example by whether the parent understood the mathematics while in school or whether they viewed themselves as practitioners of mathematics. Consequently, the parents involved in the study reported that they viewed mathematics learning in Mexico as being different in terms of school approaches from the mathematics learning their children were experiencing in the United States (Civil et al. 2008). Gonzalez et al. (2001) utilized the term "funds of knowledge" to frame their assertion that the households of diverse populations rely on different funds [or sources] of mathematics knowledge to maintain their household and well being. Thus, in order to better understand the discontinuity between the classroom and household practices in mathematics, we need to closely examine the

social setting [place, time, etc.] in which household members traditionally learn and subsequently use their accumulated knowledge and strategies to practice mathematics (Civil, 2002).

Valuing the students' cultural frame of reference. Capitalizing on what Latino students already know in their own culture versus an emphasis on student errors is clearly a prerequisite for building their level of self confidence and self efficacy in approaching mathematics. Minority students become empowered to more readily generate their own knowledge when the classroom teacher allows students to access their second language and acknowledges their cultural identity in mathematics dialogue (Cummins, 1986). Drawing on their five-year ethnographic research in four immigrant communities, that focused on how children commonly used their accumulated English language skills to read and speak for others, Orellana, Reynolds, Dorner, and Meza (2003) proposed that teachers incorporate the child's translation and interpretative skills during classroom instruction. Moschkovich (2002) similarly suggested that reforms in classroom mathematics discourse must shift attention away from whether English language learners comprehend the vocabulary or can distinguish amongst multiple word meanings. Instead, teachers should attend to the multiple resources [gestures, objects, and their native language] that such students utilize to express mathematical ideas. In addressing the connection between successful mathematics experiences and migrant students, Reyes and Fletcher (2003) noted that state-mandated guidelines can lead to institutional practices that emphasize drill and practice versus mathematical reasoning. Under these classroom mathematics practices, students become passive learners; ultimately come to depend on the teacher's knowledge; and see no connection between mathematics and their everyday lives. The researchers stipulated that there can be a fundamental revision in the school culture that values their students' cultural lives as a basis for

constructing teaching patterns. Arguing for a corollary paradigm shift in school practices, Leonard (2008) reported that classroom teachers must be willing to teach mathematics in a non-traditional, even interesting way by cultivating the cultural identities that diverse students (e.g. Latino students) bring to the classroom and by "linking the content to issues of social justice and civil rights" (p. 141). In this manner, all students will feel empowered to want to understand mathematics and apply it to their everyday lives.

Knowing the students' ways of mathematics thinking. Carpenter et al. (1996) presented the CGI model as a framework to advance the premise that knowledge of the students' intuitive problem solving strategies can inform classroom pedagogy. While engaging students during whole class instruction, small group learning, or independent work, the classroom teacher focuses on what the student can do, i.e., what is their existing knowledge [or preferred algorithms] for solving mathematics problems. With a clearer understanding of the student's capacity for performing mathematics with concrete materials, direct modeling, or abstract ideas, the teacher gradually focuses on using classroom practices like open sentences [7 + __ = 11] or stories that make mathematics learning meaningful to the student. As noted in the after-school math project, the CGI model empowers classroom teachers to initiate reforms in traditional mathematics instruction. First, there is a shift from the teacher to the students taking the reins for creating relevant representations that portray their mathematics knowledge. Second, the classroom teacher incorporates their emerging knowledge of student thinking to constantly validate their teaching practices. In more recent research, McDuffie, Wohlhuter, and Breyfogle (2011) reiterated that classroom teachers need to know their students' experiences and background. One reason would be to determine the most relevant learning experiences for them and secondly to guide them toward higher level reasoning tasks. Montelongo, Hernandez, Herter,

and Cuello (2011) reported that many Latino English learners arrive at elementary schools "with many English-Spanish cognates in their listening, speaking, reading and writing vocabularies" (p. 429) for example 'coleccionar' meaning gathered or collected. Understanding the experiential level of students, the classroom teacher knowingly makes the necessary accommodations to fill the void between what they presently know and where they need to be in terms of the lesson objective. Based on the particular needs of English Language Learner (ELL) students, teachers might lower the reading grade level; rewrite questions with a definition, or give a Spanish cognate next to its English language equivalent.

Empowering students to become critical thinkers. Likewise, in their research of teachers using their children's cultural knowledge within a Mexican-American community, Gutstein et al. (1997) portrayed a classroom teacher's actions to empower her students to become critical mathematical thinkers. The classroom teacher switched between English and Spanish and used Spanish cognates [e.g. escala for scale] while engaging students in informal mathematics as a platform for accessing their informal knowledge; or as Ladson-Billings (1994) noted 'pulling knowledge out of students' and challenging students to construct their own interpretation. In line with the National Council of Teachers of Mathematics [NCTM) Professional Standards for Teaching Mathematics (1991), the classroom teacher fostered a learning setting in which students were expected to justify, defend, formulate multiple interpretations, and communicate their thinking. From their studies of a classroom teacher's unique choice of instructional pedagogy as part of the mathematics discourse, Khisty and Chval (2002) reported that a teacher's fifth grade Latino students incrementally gained greater mastery over their conversations about mathematics. The classroom teacher did incorporate collaborative problem solving, continuous communication, and opportunities for critical thought. However, it was the teacher's use of

sophisticated words such as congruent and circumference and challenging students to use complete sentences that markedly influenced the students' competency in their discourse of mathematics.

Using a community outreach program as a platform for linking mathematics to social reform. A team of undergraduate and graduate researchers implemented an after-school math club in a predominately Latino neighborhood in a southwestern city (Diez-Palomar et al. 2006). The purpose of the club was to explore the link between the everyday knowledge and community experiences of fourth and fifth grade Latino students and their subsequent performance in using mathematics. In this project, the social-cultural context served as the framework for the pedagogical practices chosen to engage the students' application of mathematics ideas. Evident throughout the project was a deliberate shift away from the classroom teacher and textbook as the sole arbiter of knowledge. Instead, the students experienced a forum in which their multiple abilities to include bilingualism and their critical thinking served as the focal point for the expression of meaningful answers to real life mathematics problems. In retrospect, the students collaboratively engaged in dialogue, made decisions, and raised critical issues about mathematical problems that pertained to their classroom, their neighborhood, and the entire Latino community in the United States. The experience of this project prompted the students to revise their paradigm from mathematics as a topic to be feared to a topic that was prevalent everywhere, and that mathematics could be used to change their world (Diez-Palomar et al. 2006).

Implications

There is an immense opportunity to construct bridges of communication between the school and household as evidenced by the voices of three Hispanic families. Through bilingual

discourse with these families, there is awareness that classroom instructional practices differ from the cultural knowledge that the children bring to the classroom. Second, the parents have expressed concern over their child's opportunity to access relevant mathematics knowledge. This researcher believes that all parties, in this endeavor for a better educational experience, possess the hope, knowledge, and life experience to make a united difference for future generations. As school administrators, teachers, and parents our next step is to vigorously advocate for change!

First, the moment of unconditional trust can be realized with a concerted effort for communication between the school administrator, classroom teachers and parents. With the help of bilingual parents or local university educators, the school principal and a cadre of classroom teachers can be trained to make a neighborhood walk through or a series of household visits. The underlying aim would be to establish dialogue with parents and learn of how household mathematics influences the child's academic learning. In this setting, the principal and classroom teachers can make firsthand observations as a framework for adjusting the pedagogical practices during mathematics instruction and serve as a resource for the families on questions about school practices and mathematical ideas. Over time, dialogue and trust will replace awkwardness and reluctance to share life experiences and perspectives. If household visits are not possible, the school administrator, classroom teachers, and parents can collaborate on creating an electronic virtual tour of the school that incorporates a bilingual welcome to the school, its mission, mathematics and literacy educational practices, and examples of parent-teacher initiatives. As this collaborative project is constructed, school teachers and parents can forge an association that involves informal, reciprocal dialogue about a mutually important project and about the setting where children spend on average seven to eight hours a day.

Second, this study highlighted the parents' persistent need for knowing how to communicate within the school's network of communication. In response, public schools must offer parent-school liaisons that possess some degree of Spanish language proficiency; are familiar with the school's flow of formal and informal communication; and will work to create a trusting home-school connection with migrant, Hispanic parents. Recently arrived non-English speaking parents, with little knowledge of the school's rules and procedures, will greatly benefit from such a program oriented toward the needs and concerns of each family. Parent liaisons are in the best position to offer timely support and understanding as well as school related information for newly arrived Hispanic families. In many cases, these migrant families are relocating from another state or country; speak little or no English; and are in desperate need of a residence, employment; transportation; and a nurturing learning environment for their children.

Third, school administrators can schedule a forum that invites community stakeholders such as teachers, parents, community volunteers, and students to reexamine the school's strategic improvement plan that outlines short and long term goals. With the support of bilingual teachers and parents, the exchange of ideas, questions, and concerns about pedagogical practices and the school's curriculum become starting points for addressing practices that have emphasized test scores or certain forms of classroom discourse. This collaborative initiative cannot be a one-time, at the start of the school year opportunity. Instead, this push for change, in what counts for mathematics instruction and how students are given equitable access, needs to be talked about at least monthly in the school library, the home of a concerned parent, or a community outreach center. As reform efforts and success stories are identified, we need to publicize them at school assemblies, on the walls of the school, in school correspondence, and in the local media.

Finally, we can create an after-school program—at the school, a local coffee shop, or nearby community park pavilion. These venues can provide non-English speaking parents the opportunity to meet with bilingual parents and classroom teachers and to exchange cultural ways of understanding and using mathematics. In this non-threatening setting, the participants can also identify community problems that entail knowledge of mathematics such as creating a household spending budget; payment of property tax; or the completion of tax documents. In helping these immigrant and Hispanic families complete these obligations, teachers and parents begin to view each other as collaborative resources and thus become more familiar with the lives of each other in Mexico and in the United States respectively. However, this joint parent-teacher initiative can grow exponentially with the creation of a mathematics tutoring session involving peer tutoring; tutoring from bilingual parents, teens, teachers; or students enrolled in teacher certification programs. Also, we can select and train bilingual parent and student leaders who will help sustain the movement for change in the current school system and community at large. With the appropriate support, bilingual speaking parents can serve as workshop presenters providing information about mathematics concepts based on their prior learning experiences and interaction with the school teachers. Older siblings with bilingual skills can be a key resource in an after-school program. Working alongside classroom teachers, these older siblings with multiple language skills can serve as a linguistic bridge to help facilitate the academic content and second language learning for children with limited or no English language skills across K-8 grade levels. For lasting change, everyone will need each other. To reiterate, we can no longer afford to remain at the outskirts of the reform movement for educational equity. We must start now—and seriously contemplate the legacy we wish to leave for future educators, parents, and most importantly our children.

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Appendix 1

Initial One-on One Home Interview Questions for Parents--English

Part I

Semi-structured Interview Questions

1. In what ways might parents and teachers collaborate to include the child's skills, family knowledge and experiences in classroom learning?
2. What are some ways that your child has learned mathematics in your household, and how do you think that these experiences have helped your child's academic learning?
3. In what ways has your child's teacher supported your child's mathematics learning?
4. How do you feel about the way your child has developed and learned from their school experiences?

Part II

Possible Questions for Follow-Up

1. Please explain a little more about what you meant… not knowing who to turn to…and being uncertain of how to support your child's mathematics learning?
2. You said that you wanted to be involved with the school, but that you don't understand what is said in school activities, how do you feel about that?
3. So, what did you do when you did not understand the information or notes sent by the teacher?
4. We talked a lot about trust, why is having trust or "confianza" between the teacher and you so important?
5. I would really like to hear more of how you motivate your children to practice their math in what they do every day.

Appendix 2

Initial One-on-One Home Interview Questions for Parents—Spanish

1. ¿De qué manera podrían los padres y los maestros colaboran para incluir las habilidades del niño, el conocimiento de la familia y las experiencias de aprendizaje en el aula?
2. ¿Cuáles son algunas maneras en que su hijo ha aprendido las matemáticas en su casa, y ¿cómo cree que estas experiencias le han ayudado el aprendizaje académico de su hijo?
3. ¿De qué manera el maestro de su hijo ha ayudado su niño aprender las matemáticas?
4. ¿Cómo se siente sobre la forma en que su hijo ha desarrollado y aprendido de sus experiencias de la escuela?

Part II

Possible Questions for Follow-Up

1. ¿Por favor, explique un poco más sobre lo que significa que usted no sabía a quién recurrir y sobre no estar seguro de cómo apoyar la matemática para su hijo?
2. ¿Usted dijo que quería estar involucrados con la escuela, pero que no entiendes lo que se dice en las actividades escolares, ¿cómo se siente acerca de eso?
3. ¿Por lo tanto, ¿qué hizo cuando usted no entiende la información o notas enviadas por el maestro?
4. ¿Hemos hablado mucho de confianza, ¿por qué es que la confianza entre el profesor y ustedes, como los padres de sus niños muy importantes?
5. Me gustaría saber más de cómo motivar a sus hijos a practicar las matemáticas en lo que hacen todos los días.

Appendix 3

Initial Home Focus Group Questions for Family—English

1. I have noticed that sometimes it's hard to help your child with the math homework because you only speak in Spanish. What would you like your child's school to do to make it easier for you to help with your child's learning?
2. What might be your sentiment about your child's school using only the English language and the textbook to teach mathematics to your child, and would you like for other experiences and examples to be included?
3. You've said before that meetings and school events are presented only in the English language. How has that situation made you feel, and what changes would you like the school to make to help you feel included?
4. You have talked about problems in your child learning to read and understand while using the school textbooks. What would you like to do to help the classroom teacher make learning more meaningful to your child?
5. I have noticed that your children only use the Spanish language to communicate with their parents and their brothers and sisters. Your children also seem very comfortable doing things around the house. How do they feel about not being able to use their Spanish language to do their homework or their work in the classroom?

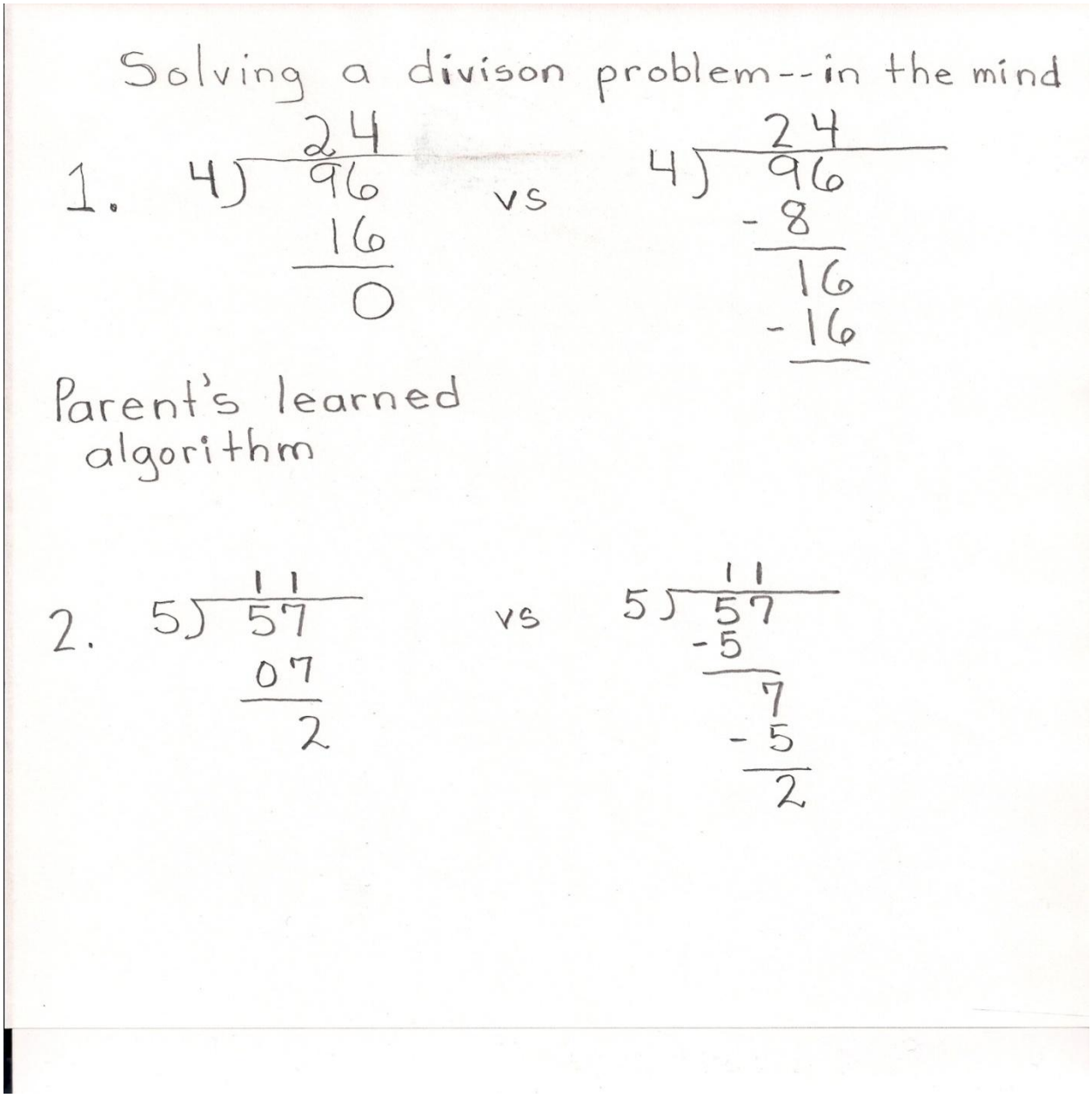
Appendix 4

Initial Home Focus Group Questions for Family—Spanish

1. ¿He notado que hay veces es difícil ayudar a su hijo con la tarea de matemáticas, ya que sólo hablan en español. ¿Qué le gustaría la escuela de su hijo a hacer para que sea más fácil para usted ayudar con los estudios de su hijo?
2. ¿Cuál podría ser su sentimiento acerca del maestro usando solamente el idioma de Ingles durante conversaciones de instrucción, los libros o textos para ensenar sus niños? También, te gustaría que el maestro incluir experiencias y ejemplos de su cultura o otras culturas en la instrucción de matemática?
3. Usted ha dicho antes que las reuniones y eventos de la escuela se presentan sólo en inglés. ¿Cómo ha esa situación hizo sentir? ¿Qué cambios desea la escuela para hacer para ayudarle a sentirse incluidos?
4. Ha hablado de problemas en su niño aprendiendo a leer y entender al utilizar los libros de texto. ¿Qué gustaría hacer para ayudar al profesor de aula hacen aprendizaje más significativo a su hijo?
5. Me he dado cuenta de que sus hijos utilizan sólo el idioma español para comunicarse con sus padres, sus hermanos y hermanas. Sus hijos también parecen muy cómodos hacer las cosas en casa. ¿Cómo se sienten acerca de sus niños no poder utilizar su idioma español para realizar sus deberes o su trabajo en el aula?

Appendix 5

Solving Two-Digit Division in the Mind



Chapter 6

Overall Conclusions

This chapter presents a reflection of the findings from four months of household visits with three migrant, Hispanic families in relation to the theoretical framework portrayed in the review of the literature. The underlying reason for this ethnographic study was to provide teachers and school administrators an increased understanding of how the Hispanic household functions as an important cultural resource in influencing their children's out-of-school learning. From frequent observation, bilingualism, involvement in family traditions, and shared cultural experiences with these families, I portrayed each household's perspective toward creating a trusting home-school partnership and in contextually knowing and practicing literacy and mathematics.

How Do Hispanic Parents View Themselves as Critical Partners in Their Children's Literacy Learning?

According to Lazar and Weisberg (1996), classroom teachers and Hispanic parents can form a mutually satisfying partnership, based on the exchange of information about school and home literacy practices, with the goal of contributing to the child's academic and second language learning. Furthermore, school administrators and classroom teachers showing a desire to welcome and respect their students' social and cultural capital led to greater parental support in what their children were learning to read and write (Peterson & Heywood, 2007). According to this theoretical framework, the Hispanic family's efforts to guide their child's out-of-school literacy learning would have been made easier with a parent-teacher working relationship based on "confianza" meaning mutual trust and on respect for each other's skills and experiences.

Discovering the families' experiences with their children's school. At the onset of these household visits, the three families were somewhat reserved if not suspicious in an outsider

entering the privacy of their daily lives. They wondered about me seeing firsthand the ways in which the household experience served to scaffold their child's learning to read, write and speak. These parents were equally inquisitive of how their voices might inform educators on the necessity of culturally relevant learning for non-English speaking, migrant students. So often in the past, these Spanish-speaking parents had attended an Open House; Parent-Teacher Association meeting; curriculum workshop; or a school-wide assembly orchestrated exclusively in the English language. These parents had subsequently walked away from such events frustrated, confused, and uncertain. To these parents, the school and classroom teachers were well intentioned; but the language divide left them with ambiguous feelings as to the purpose for the event and with many unanswered questions of how to participate at school. The systematic practice of using only the English language to exchange information between the parent and school placed access to what occurred at their child's school beyond the reach of the linguistic and cultural knowledge of these Hispanic parents.

Building rapport and trust with families. Through spontaneous opportunities, I engaged in informal conversations in their native language while sitting at the kitchen table, relaxing on the living room sofa, or standing under a tree that offered the late afternoon shade. At other times, I took part in traditional religious ceremonies, birthday celebrations, or a family dinner with tacos, beans, rice, and tortillas. Over time, the parents discerned a commonality of cultural experiences and thus began to view me as a special member of the family with whom they could confide in, ask questions on intimate topics, and even express their voice on the home-school connection. These Hispanic families thereafter allowed me to either unobtrusively observe or participate in household conversations on helping their child complete a school assignment or understanding school correspondence published in the English language.

Discovering their voices for being heard and understood. From Spanish language interviews, it became evident that these non-English speaking parents desired their child's school to hear their voices. These families hoped that the school might want to understand and acknowledge the family's everyday experiences involving writing and speaking in their native language as a valid resource for supporting their child's literacy learning. Often, the children and parents collaborated on writing notes to the school teacher or understanding the school's expectations of parents noted in the student code handbook. At other times, an older child mediated or paraphrased remarks presented during a television or news broadcast in the English language. Yet, it was their belief that these daily household events were rarely considered or even incorporated as valuable resources for their child's classroom learning.

From focus group interviews, these families voiced their unwavering expectation that a relationship based on constant dialogue and trust could be forged between them and the classroom teacher for the benefit of their child's school learning. On the one hand, these Hispanic parents asserted their critical role as the 'primary teacher' for their child's moral development that epitomized cooperative problem solving, respecting one's elders, and working hard to achieve success later in life. Furthermore, these parents reiterated that their prior school learning and life experiences in Mexico influenced their preferred ways of guiding their children to know and practice literacy in the United States. For example, the parents arranged for a relative (such as the children's grandmother) to talk about a childhood experience; for the children to watch a Mexican soap opera; or for someone to start singing a traditional family melody at dinner time. Thus, it was the Hispanic parents' hope that through ongoing dialogue the classroom teacher would eventually realize the fundamental value of their cultural stories and practices and overtly acknowledge that these parents were actually involved in their child's out-

of-school learning. On the other hand, these parents were cognizant of the classroom teacher's formal training that prepared and empowered him/her to guide their child's academic education. It was after all, their many years of prior school learning in Mexico that had oriented them as children to view the classroom teacher as the voice of authority in the classroom; knowledgeable of instructional pedagogy; and a professional to be respected.

Finding a common language for understanding. Yet, the notion of "knowing their child's school system" represented a persistent sentiment echoed by these migrant, Hispanic parents. Often, these parents were uncertain for example why particular instructional pedagogies were utilized; what factors led to a policy decision; or why their child received markedly low grades in mathematics versus other academic subjects. These parents noted a pressing need for continuous, frank communication with bilingual intervention as the basis for achieving a 'common language of understanding' between them and the school. From the perspective of these three families, being involved in their children's home and school learning was how they wanted the school and classroom teacher to "see them and experience them." With optimism for learning some amount of the English language and meeting other concerned migrant parents, these three families firmly believed that household knowledge and school practices could be used in an interdependent manner. Having undergone life struggles themselves in migrating to a new country, these parents expressed a contrite desire to make a lasting difference in their children's academic learning in the United States. From the parents' view, an effective home-school connection rested on the acknowledgement of each other's voices as equal partners with a commitment to share skills, knowledge, and experiences.

In What Ways Are Hispanic Parents Involved With Their Children's School to Promote Literacy Learning and Communication?

According to Lazar and Weisberg (1996) classroom instructional methods can be tailored to a student's literacy learning needs based on a two-way exchange of information between home and school. Classroom teachers can encourage parents to share via journals, audio recordings, or telephone conversations reflective vignettes of how their children relates to the printed text in a family setting. This reciprocal dialogue serves to inform the classroom teacher about the real out-of-school issues affecting the children's emerging literacy and reiterates the parents' role as having a unique perspective on their children as literacy learners. In recognition that children may come from a different cultural [literacy] background, Ben-Yosef (2003) encouraged classroom teachers to be open-minded and attend to the students' out-of-school local and vernacular literacies such as music, religious, or computer literacies brought to school to construct meaning from text.

According to this theoretical framework, the parent's role in their children's out-of-school learning can offer a unique perspective to the classroom teacher. A teacher's invite to encourage the involvement of migrant parents with their children's literacy assignments can be the catalyst for incorporating the voices of these parents and their cultural identity into classroom learning. What now follows are ways in which these three Hispanic households served as cultural and social venues for their children's literacy emergence. The three Hispanic households in this study reported a multitude of literacy experiences that reflected their socio-cultural orientation toward caring for the family and supporting their children's school learning and second language acquisition. In their native language, the parents and children stipulated that many of these

intentional literacy events transacted between family members, visiting relatives, and close neighbors remained at the periphery of the school's literacy environment.

Household conversations in both languages. Through frequent exploration within their daily lives, the families demonstrated their passionate use of conversation—at times in the English language—to exchange the news of the day, discuss experiences at school or work, and draw on the experience of elders. These parents reported that it was an immense challenge for them to cross the language divide since their children were now learning about the English language at school; but with spurts of a sibling's bilingualism, these parents found 'connecting points of understanding' to express their expectations and dreams for their children's success at school. These oral forms of dialogue served for example as didactic moments for the children to feel more secure in their neighborhood, a new country, or in their school performance. Additionally, these literacy opportunities allowed members of the family, regardless of age, a nonjudgmental platform to utilize their native language and experiences to express their thinking and questions.

Hispanic children's engagement in household literacy. At other visits, there was total engagement of the children's mental and physical interest in spur-of-the-moment, yet meaningful literacy events. So often, and regardless of the parent's fatigue at the end of the workday, one parent stopped their household duties and sat down with their child. In these special moments, the parent used his/her native language and some English words to talk, listen, and respond to his/her child's questions about a school experience, a homework assignment, or about a book his/her child had read from the school or home library. Although the parent struggled with his/her use of the English language, the parent and child kept focused on expressing their thoughts and concerns.

As it was especially hot outside on a particular summer afternoon, the three children (ages 4, 9, and 17) in one household used an interactive computer play station linked to their television monitor to rapidly interpret changing scenarios and audio narration in the English language to determine their appropriate body movement. It was equally informative to witness an entire household of parents and their two children talking and responding to each other's interpretations following their viewing of a Walt Disney documentary on the Titanic sinking. Thereafter, the children's minds instinctively shifted to using a spiral notebook as a makeshift journal to reflect on what they had seen and heard. These two siblings talked together in both languages as they sketched and colored different illustrations of ships presented in the movie presentation.

A child's construction of English words and phrases. Following a church service, one Hispanic family invited my English-speaking wife and me for lunch at a local restaurant. In that relaxed setting, their six-year old daughter initiated a two-way conversation with my wife and expressed her desire for a glass of iced tea using previously learned words and phrases in the English language. After a few minutes had elapsed, I realized that the parents had become attentive to their daughter's construction of words to converse with my wife. These Hispanic parents visibly showed pride in their child's courage to use her emerging mastery of the English language. The parents reported that their oldest son (seven years older) had taken on the special responsibility since his younger sister's birth to model for her the use of both languages.

A sibling's role as household spokesperson. In each household, the family's sphere of cultural influence, specifically in terms of retaining their cultural language, was clearly evident when an older sibling used their Spanish language fluency and limited knowledge of the English language to represent the parents. The older sibling often became the spokesperson for the family for example when an English- speaking adult visited their home to collect data for the U.S.

national census, called the household regarding a future change in the cost for a utility service, or mailed a notice on the rezoning of neighborhoods to a different elementary school.

Valuing bilingualism as a link to cultural heritage. From focus group interviews, the parents reported the importance of their children knowing two languages so they could continue to use their native language to inculcate in their children's development the morals of love, respect, and collaboration via conversation and traditional family celebrations. By listening and reflecting on daily parent-child conversations in their native dialect, it was quite evident that these migrant, Hispanic families purposely engaged their children in Spanish language dialogue so that their children would always remain cognizant of their cultural heritage and thus be able to communicate with their Spanish-speaking grandparents and other relatives in Mexico. This sampling of household literacy experiences exemplified the strength of the household as a primetime setting for impacting their children's confidence and linguistic abilities in making sense of what they saw, heard, and read.

What Other Ways for Doing and Representing Mathematics do Households Possess to Help Strengthen the Home-School Connection?

According to Sheldon and Epstein (2005) an important strategy for improving the mathematics scores of students is the collaboration between the schools, families, and communities that inform parents on ways of supporting their mathematics learning at home. Through such a partnership, parents become empowered to contact their child's mathematics teacher; to share their perspectives about their children's problematic areas in mathematics; and to solicit information from the teacher's viewpoint on their children's progress and assessment results. Civil, Diez-Palomar, Menendez-Gomez, and Acosta-Iriqui (2008) reported that Latino parents are actually involved in informing their children about mathematics; however, such

parents often differed in the manner chosen to interact and practice mathematics with their children. While responding to mathematics questions from these parents and their children or observing parent-child dialogue in their native language on ways of solving a mathematics problem, I made several important links with the prior given theoretical framework.

Conflicts arising between distinct ways of seeing and doing mathematics. In each of these Hispanic households, these migrant parents often utilized a memorization schema learned and codified in their Mexican schooling to help their children solve mathematics problems featured in U.S. mathematics textbooks and classroom discourse. These children outwardly struggled to emulate the subtleties of their parents' mathematics thinking because there was no apparent commonality with their school learned problem-solving strategies. Since the children at times could not "figure out what to do" using the parents' ways of seeing and doing mathematics, the children expressed outward signs of frustration and questioned the value of their parents' culturally learned mathematics algorithms. From the parents' own self reports, the school decision to not require the children to memorize the multiplication facts or ways of solving subtraction problems in the mind placed their children behind their counterparts in Mexico. Conversely, these parents did recognize that in American schools the children were introduced to word problems much earlier in their mathematics learning than in Mexican schools.

Collaborative household mathematics conversations in both languages. A focus on family conversation and bilingualism served as salient components within two Hispanic household's efforts to cultivate their children's mathematics experience. As the parents and their children talked aloud—and in their native language about a mathematics homework assignment, there was a sense of security that permeated the interchange of ideas amongst the parents and the

youngest family member. No matter the character of the question or comment, the collaborative give-and-take session encouraged all participants to express their perspective on how best to approach the problem. It was precisely this family norm of encouraging everyone to contribute their insights and knowledge that created a sense of value for each participant's ideas. Yet, from these parents' self reports, their children's experience in mathematics dialogue in their native language was often not acknowledged or validated in the classroom where English was the sole medium for conversation. Woven within these family interactions on mathematics was the natural predilection for family members, with some familiarity in the English language, to instinctively switch between the two languages. At times, a parent or an older sibling took the role of mediator—interpreting or summarizing a family member's comments or questions to ensure all participants in the discussion possessed clarity of each aspect of the problem and of the ideas being presented. In these two Hispanic families, a family member's ability to create a relevant mental image or refer to a known cultural experience via bilingualism reiterated the value of this cultural resource for mathematics learning.

Reliance on practical application of mathematics. What was clearly evident amongst all three Hispanic families was their inclusion of daily practical experiences as the paradigm for inculcating mathematics knowledge in their children. Drawing on their cultural experiences while growing up on a ranch, working at the family food market, or learning to mend and cook, these parents readily engaged their children in applying mathematical ideas. From Spanish language interviews with the parents, their voices collectively reiterated the importance of their children learning to compare food prices, calculate the total food bill in dollars and cents, and determine the expected change—all in their mind. When the need for a porch enclosure arose because of a growing pet dog, a father, trained since childhood on carpentry projects, seized the

moment to teach his child how to use various tools to measure plywood to the nearest inch, foot and yard. In another household, while preparing for a special family dinner, a mother patiently tutored her oldest daughter to measure a ¼ cup of cooking oil and use a small kitchen scale to weigh 1 ½ pounds of baking flour. These essential household activities involving dialogue between the parent and child, and the inclusive hands-on activities empowered their child to further her knowledge and confidence in doing mathematics to solve real-life situations.

Reforming classroom mathematics as a catalyst for social change. Through follow-up discussions, the parents reflected on their untiring hopes for their children understanding these new, analytical ideas of mathematics. Through practice and good teachers, as they stipulated, their children would acquire the problem-solving skills and desire to succeed in higher levels of mathematics education. Looking to the future, the next generation would have the intellectual faculty to illuminate others on issues facing migrant Hispanics such as a quality, rigorous education; fair and impartial immigration laws, and job opportunities in a technological society. These parents intuitively realized the challenges confronting their migrant children in learning a second language and concurrently acquiring an awareness of what constituted mathematics.

Since their migration to the United States years before, these parents had worked 10 – 12 hours a day at minimum wage jobs; made many sacrifices on behalf of their children; and struggled each day to help with their children's schooling. Despite these lifestyle realities, the families wanted to work alongside their child's school to advocate for progressive changes. Under this expectation, parents and teachers could closely examine the kinds of learning experiences occurring in the mathematics classroom. With courage and determination, both parent and the school could jointly move toward removing the subtle barriers in social and educational institutions that excluded their child's access to relevant, challenging mathematics.

Recommendations

As noted in De La Cruz (1999) portrayal of the Children's Math Worlds Family Connection (CMWFC) program, one proposal would be for school districts to create outreach programs that empower parents to help their linguistically and culturally diverse children with mathematics. As parents and classroom teachers forge partnerships and appreciate each other's capabilities, resources can be aligned to help marginalized students gain competence in higher level mathematics thinking. Within this reform paradigm, teachers become more sensitized to culturally relevant instruction and parents gain greater confidence and knowledge as they receive personalized instruction and tutoring materials in both Spanish and English to help their children. Based on household observations in which older siblings helped their younger siblings with out-of-school learning, an important proposal is for older siblings with bilingual skills to be part of a community outreach program. Working with classroom teachers, these older siblings provide a linguistic bridge to help limited or non-English speaking children (in grades K – 8) gain meaningful mathematics knowledge and proficiency in the English language. An important point to discuss is that classroom teachers will not always share the same cultural identity or language with their linguistically, diverse students. Under such circumstances, the teacher's belief in using creative ways to nurture his/her students' classroom learning is pivotal. Efforts to provide one or two word translations of objects in the classroom; to practice words in the children's native language; or to learn of the children's ways of practicing literacy and mathematics at home for inclusion in classroom rhetoric send powerful messages about the classroom teacher's commitment toward the children's need for intellectual, emotional and physical growth.

Additionally, this research study highlighted the parents' persistent need for knowing how to communicate within the school's network of communication. Thus, a second proposal is for

public schools to offer parent-school liaisons that possess Spanish language proficiency; are familiar with the school's communication network; and help create a trusting home-school connection with migrant, Hispanic parents. Recently arrived non-English speaking parents, with little knowledge of the school's rules and procedures, will greatly benefit from such a program oriented toward the needs and concerns of each migrant, Hispanic family. Parent liaisons are in the best position to offer timely support and understanding as well as school-related information for newly arrived Hispanic families. In many cases, these migrant families are relocating from another state or from their native country; speak little or no English; and are in desperate need of a residence, employment; transportation; and a nurturing learning environment for their children.

A third proposal is to reform the traditional classroom environment that places the teacher at the helm of directing mathematics learning and instead as noted in Richards (1990) empowers students to use reading, writing, and drawings as a departure point for expressing their understanding of what is mathematics. As children are encouraged and given feedback on their use of language to express their thinking on paper, there is an emerging self-confidence for students to record, discuss, and evaluate their understanding of a particular learning experience. Borasi, Sheedy, and Siegel (1990) offered a related reform-based mathematics strategy to support students' efforts to make sense of mathematics problems. The researchers suggested the classroom teacher read aloud a particular story, and then have students author their own stories that reflect their own construction of the problem, the critical ideas, and a story resolution. The value of this instructional methodology is that students take charge of their own mathematical reasoning within a contextual framework that mirrors how literary writers create their stories.

A fourth proposal is to make every effort to attract the most qualified and committed teachers who are willing to provide culturally relevant instruction for Latino students. As noted

in Gutstein, Lipman, Hernandez, and de los Reyes (1997) and Ladson-Billings (1994), teachers must learn about and utilize their students' cultural and informal mathematics background to inform their classroom instructional practices. Culturally relevant teachers will make connections with their students' families; visit their students' neighborhoods; and allow for bilingualism in the classroom. In line with the National Council for Teachers of Mathematics Standards, teachers will readily mentor minority students to articulate, reason, and justify their assertions in the mathematics classroom. Classroom teachers can further empower their students by teaching them to utilize critical thinking skills to question the status quo; analyze divergent viewpoints on social issues; and assert themselves as ever watchful agents for finding solutions to prevalent inequities.

A final proposal is to incorporate mathematical themes in multicultural literature as a framework for improving mathematics achievement. In a study conducted by Strutchens (2002), pairs of African American parents and children read literature about different cultural groups. As they read these stories, each pair collaborated in responding to the facilitator's mathematical questions and eventually the parents learned how to create their own questions for use at home. The favorable reactions by the participants in this study and their ensuing desire to continue the school project at home offers a tremendous reason for inviting Hispanic families in this program.

The above-mentioned proposals illustrated opportunities for reforming traditional classroom instruction especially for marginalized groups. Yes, it will be a major undertaking to forge a home-school partnership; place students at the center of literacy and mathematics learning; find culturally relevant teachers; and immerse multicultural literature with mathematics learning. But, it is a journey that we must start now! As educators and parents, we must combine our collective wisdom and resources to enrich our students' school experiences that include

culturally relevant pedagogy, critical problem solving, and a deep-rooted resolve to erase social inequities.

Limitations

This paper concerned three Hispanic families with children assigned to one school district with particular attention to the influences affecting the parent-school connection; and ways in which the household influenced their children's mathematics learning. Visits to the households of the three families included four months in the school year. Household visits entailed one-hour visits each week for one family and about two-hour visits each week on Thursday and Friday evenings for the other two households. In one household, the husband's 12-hour work schedule precluded any interaction with him. In the other two households, the majority of visits were conducted late in the afternoon during the weekday, while at times the near-exhausted parents prepared the family meal, washed clothes, or reviewed correspondence received in the mail. Although there were many other adults living in the household, I focused on the parent-school interaction. Other influences affecting the household such as immigration, feeling of safety and security in the neighborhood, or opportunities for the parents to secure employment in the local job market were not researched.

In deciding on an ethnographic mode of inquiry, I understood that my frame of reference, as a member of the Hispanic community in my role as a classroom teacher, would influence the methodological decisions, interpretations, and portrayal of those interpretations made throughout the study (Eisner, 1992). In response to criticisms that biases are implicit in writings about the lived experiences of others, Denzin (1989) stipulated that personal experience is an authoritative source of empirical material as is cultural texts and materials collected during an ethnographic study. Similarly, as noted in Reason (1988), I recognized that my own biases rooted in a social

and moral conscience would influence my voice, my subjective interpretations, and decisions for how I would narrate the everyday life experiences and perspectives of the three Hispanic families. In addressing the role of self in research with persons, Reason (1988) noted,

> "Critical subjectivity means that we do not suppress our primary subjective experience, that we accept that our knowing is from a perspective; it also means that we are aware of that perspective and of its bias, and we articulate it in our communications" (p. 327).

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Appendix 1

Research Participant Informed Consent Form-English

(NOTE: DO NOT SIGN THIS DOCUMENT UNLESS AN IRB APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

INFORMED CONSENT
For a Research Study entitled
"Valuing the 'Often Overlooked' Hispanic Culture, Stories and Experiences, and Resources in Connecting Home to Schools for Literacy and Mathematics Learning"

You are invited to participate in a research study: To better understand from your family's viewpoint how to better help your child's learning in math, reading, and writing at home. The members of each family are legal residents in the United States. The study is being conducted by me, Mr. Gilbert Dueñas, under the direction of Dr. Charles Eick in the Auburn University Department of Curriculum and Teaching. You have been selected as a participant because you are a parent in one of the three families taking part in this study.

What will be involved if you participate? If you decide to participate in this research study, I will ask that you allow me, Mr. Duenas, the researcher to make observations of the everyday household practices that influence at home literacy and mathematics learning and to observe areas of confusion or misunderstanding impacting the home-school connection. Within the household, I plan to make two visits each month, for four months for 30 minutes to one hour on Friday afternoons and for about two hours on weekends. I, the researcher will conduct three different, one-on-one bilingual, 30-45 minute audio-taped interviews with the parents of each family. Second, I, the researcher will conduct a single 45-minute to one-hour focus group interview with the parents and their children in each family. And, I, the researcher will use a digital camera to photograph moments of at home mathematics and literacy learning; the value of family interaction; and how the extended family serves as a resource. Third, I will ask that you allow me, Mr. Duenas, the researcher to have copies and pictures of some of your children's homework and projects. Following these household visits, I, the researcher, will record field notes in a journal.

Are there any risks of discomforts? The risk associated with participating in this study is loss of confidentiality through your interview responses. To minimize this risk, I will use pseudonyms when transcribing and analyzing your responses.

Are there any benefits to yourself or others? If you participate in this study, you can expect to receive a more in-depth understanding of the issues affecting the home-school partnership and strategies for making school learning in literacy and mathematics culturally relevant. I cannot promise you that you will receive any or all of the benefits described.

Will you receive compensation for participating? If your child chooses to participate, I will offer a free children's book to your child at the end of the study.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your identifiable data will be destroyed immediately. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Curriculum and Teaching, or your relations with your child's school.
Participant's initials_____

Your privacy will be protected. Any information obtained in connection with this study will remain confidential. Information obtained through your participation will be used to fulfill an educational requirement (i.e. dissertation), to publish in a professional journal, or to present at a professional meeting using pseudonyms for your name.

If you have any questions about this study, please ask them now or contact Dr. Charles J. Eick at 334-844-6887 or eickcha@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or email at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

_____	_____
Participant's signature Date	Investigator obtaining consent Date
_____	_____
Printed Name	Printed Name

Appendix 2

Research Participant Informed Consent Form-Spanish

Nota: No firme este documento a menos que un sello de aprobación de la IRB con las fechas actuales se ha aplicado a este documento.

Consentimiento Informado

Para un estudio de investigación titulado

Valorando la Cultura, las Historias y las Experiencias hispana a menudo dejada pasar, y los Recursos a Conectar en casa a Escuelas para capacidad de leer y escribir y Matemáticas que Aprende

Universidad Auburn

Usted está invitado a participar en un estudio de investigación: Para comprender mejor desde el punto de vista de su familia la mejor manera de ayudar en el aprendizaje de sus hijos en matemáticas, lectura y escritura en el hogar. El estudio está siendo realizado por mí, el Sr. Gilbert Dueñas, bajo la dirección del Dr. Charles Eick en el Departamento de la Universidad de Auburn de Currículo y Enseñanza. Usted ha sido seleccionado debido a que son los padres en una de las tres familias de los hogares se está estudiando.

Qué será implicado si usted participa? Si usted decide participar en este estudio de la investigación, preguntaré que usted me permite, Sr. Dueñas, el investigador para hacer observaciones de las prácticas diarias del hogar que influencian en el país la instrucción y las matemáticas que aprenden y para observar áreas de la confusión o el malentendido afectando la conexión de la hogar-escuela. Dentro de la casa, yo planeo hacer dos visitas cada mes por cuatro meses, durante 30 minutos a una hora el viernes por la tarde y para acerca de dos horas en fines de semana. Yo, el investigador realizará tres diferente entrevistas más o menos por 30 - 45 minutos de audio con los padres de cada familia. Segundo, Yo, el investigador realizará una entrevista del grupo del foco por 45 minutos con los padres y niños en cada familia. Y yo, el investigador utilizará una cámara digital para fotografiar momentos de matemáticas y capacidad de leer y escribir en que sus niños están aprendiendo; el valor de interacción familiar; y cómo miembros de clan familiar sirven como un recurso. Siguiente estas visitas de la casa, yo el investigador registrará notas de campo en un diario.

Existe algún riesgo de molestias? El riesgo asociado a participar en este estudio es la pérdida de confidencialidad de sus respuestas a través de la entrevista. Para minimizar este riesgo, voy a utilizar seudónimos cuando la transcripción y el análisis de sus respuestas.

Hay beneficios para sí mismo o los demás? Si usted participa en este estudio, puede esperar recibir una comprensión más profunda de las cuestiones que afectan a la casa de asociaciones escolares y estrategias para hacer de la escuela de aprendizaje en lectura y matemáticas culturalmente relevante. Yo no puedo prometer que va a recibir alguno o todos los beneficios descritos.

Va usted recibir una compensación por su participación? Si sus hijos deciden participar, voy a ofrecer un libro para niños gratis para cada niño en su casa al final del estudio.

Si usted cambia su mente sobre participar, Usted puede retirarse en cualquier momento durante el estudio. Su participación es completamente voluntaria. Si decide retirarse, los datos de identificación serán destruidos inmediatamente. Su decisión de todos modos para participar no se va perjudicar sus relaciones en el futuro con la Universidad Auburn. En caso que usted decidir para participar, usted está libre para retractar su consentimiento y para discontinuar participación en cualquier tiempo sin pena. En caso que usted decidir, después de un tiempo, a retractar de este estudio, usted también puede retractar cualquier información que estuvo recogido de usted.

Su privacidad será protegida. Toda información obtenida en relación con este estudio se mantendrá confidencial. La información obtenida a través de su participación se utilizará para cumplir con un requisito de enseñanza como una tesis, para publicar en una revista profesional, o para presentar en una reunión de profesionales que utilizan seudónimos para su nombre.

Si usted tiene alguna pregunta sobre sus derechos como participante en una investigación, puede comunicarse con la Oficina de la Universidad de Auburn de Sujetos Humanos de Investigación o de la Junta de Revisión Institucional por el teléfono 334-844-5966 o por correo electrónico hsubjec@auburn.edu or IRBChair@auburn.edu.

Después de haber leído la información proporcionada, usted debe decidir si desea o no participar en este estudio de investigación. Su firma indica su voluntad de participar.

_____

Firma de persona que responde fecha

_____

Firma de investigador fecha

Appendix 3

Research Parental Permission/Consent Form-English

(NOTE: DO NOT SIGN THIS DOCUMENT UNLESS AN IRB APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

PARENTAL PERMISSION/CONSENT
For a Research Study entitled
"Valuing the 'Often Overlooked' Hispanic Culture, Stories and Experiences, and Resources in Connecting Home to Schools for Literacy and Mathematics Learning"

Your child is invited to participate in a research study: To better understand from your child's viewpoint how to better help your child's learning in math, reading, and writing at home. The child is a legal resident in the United States. The study is being conducted by Mr. Gilbert Dueñas, under the direction of Dr. Charles Eick in the Auburn University Department of Curriculum and Teaching. You have been selected as a participant because you are a parent in one of the three families taking part in this study.

What will be involved if you participate? If you decide to allow your child to participate in this research study, your child will be asked to do nothing different while participating in daily household settings. If your children can read and write then you will have them also sign an assent form. The child must be at least the age of seven years old. If your children cannot read and write then you will ask for their verbal assent; most often, the child is below the age of seven years old. Mr. Dueñas (the researcher) will observe the child's cultural and social interactions with other family members while engaged in at home literacy and mathematics learning. Thereafter, I, the researcher will record field notes describing the child's at home experiences. About twice each month, for four months, I, the researcher will conduct at-home observations, one-to-one interviews with the parents in each family and their children, and a focus group interview with three to four family members which may include children. Your child's total time commitment will be about one hour, twice a month for the at-home observation and a single 45-minute to one hour focus group interview.

Are there any risks of discomforts? The risk associated with participating in this study is loss of confidentiality. To minimize this risk, we will only retain data obtained from children under pseudonyms. Code lists that link pseudonyms with actual names will be kept under lock and key in a desk, located at the researcher's residence and will be destroyed after all data are transcribed to pseudonyms at the end of this study.
In addition, I, Mr. Gilbert Duenas, the researcher and a classroom teacher with six years experience in the classroom, will only interact with your child in a professional, ethical, and appropriate manner. I have a current Alabama teaching certificate, including ABI fingerprint clearance. I, Mr. Duenas will work under the child's parent who will be present at all times.

Are there any benefits to your child or others? If your child participates in this study, your child will not receive any added benefit. All children may benefit from the researcher's presence in the household as an experienced elementary school teacher who guides the students' academic learning. I cannot promise you that your child will receive any or all of the benefits described.

Will you receive compensation for participating? To thank your children for participating, each child will be offered a children's book at the end of the study.

If you (or your child) change your mind about your child's participation, your child can be withdrawn at any time during the study. Your child's participation is completely voluntary. If you choose to withdraw your child, your child's identifiable data will be destroyed immediately. Your decision about whether or not to allow your child or to stop participating will not jeopardize your or your child's future relations with Auburn University, the Department of Curriculum and Teaching, or your relations with your child's school.

Your child's privacy will be protected. Any information obtained in connection with this study will remain *confidential*. Also, all retained data will only be identifiable by pseudonyms in place of actual names. Information obtained through your child's participation may be presented at a professional meeting or published in a professional journal.

If you (or your child) have any questions about this study, please ask them now or contact Dr. Charles J. Eick at 334-844-6887 or eickcha@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your child's rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or email at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH FOR YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO ALLOW YOUR CHILD TO PARTICIPATE.

_____	_____
Participant's signature Date	Investigator obtaining consent Date
_____	_____
Printed Name	Printed Name

Child's name_____

Appendix 4

Research Parental Permission/Consent Form-Spanish

Nota: No firme este documento a menos que un sello de aprobación de la IRB con las fechas actuales se ha aplicado a este documento.

Consentimiento Informado
Para un estudio de investigación titulado

Valorando la Cultura, las Historias y las Experiencias hispana a menudo dejada pasar, y los Recursos a Conectar en casa a Escuelas para capacidad de leer y escribir y Matemáticas que Aprende

Universidad Auburn

Usted está invitado a participar en un estudio de investigación: Para comprender mejor desde el punto de vista de su familia la mejor manera de ayudar en el aprendizaje de sus hijos en matemáticas, lectura y escritura en el hogar. El estudio está siendo realizado por mí, el Sr. Gilbert Dueñas, bajo la dirección del Dr. Charles Eick en el Departamento de la Universidad de Auburn de Currículo y Enseñanza. Usted ha sido seleccionado debido a que son los padres en una de las tres familias de los hogares se está estudiando.

Qué será implicado si usted participa? Si usted decide participar en este estudio de la investigación, preguntaré que usted me permite, Sr. Dueñas, el investigador para hacer observaciones de las prácticas diarias del hogar que influencian en el país la instrucción y las matemáticas que aprenden y para observar áreas de la confusión o el malentendido afectando la conexión de la hogar-escuela. Dentro de la casa, yo planeo hacer dos visitas cada mes por cuatro meses, durante 30 minutos a una hora el viernes por la tarde y para acerca de dos horas en fines de semana. Yo, el investigador realizará tres diferente entrevistas más o menos por 30 - 45 minutos de audio con los padres de cada familia. Segundo, Yo, el investigador realizará una entrevista del grupo del foco por 45 minutos con los padres y niños en cada familia. Y yo, el investigador utilizará una cámara digital para fotografiar momentos de matemáticas y capacidad de leer y escribir en que sus niños están aprendiendo; el valor de interacción familiar; y cómo miembros de clan familiar sirven como un recurso. Siguiente estas visitas de la casa, yo el investigador registrará notas de campo en un diario.

Existe algún riesgo de molestias? El riesgo asociado a participar en este estudio es la pérdida de confidencialidad de sus respuestas a través de la entrevista. Para minimizar este riesgo, voy a utilizar seudónimos cuando la transcripción y el análisis de sus respuestas.

Hay beneficios para sí mismo o los demás? Si usted participa en este estudio, puede esperar recibir una comprensión más profunda de las cuestiones que afectan a la casa de asociaciones escolares y estrategias para hacer de la escuela de aprendizaje en lectura y matemáticas culturalmente relevante. Yo no puedo prometer que va a recibir alguno o todos los beneficios descritos.

Va usted recibir una compensación por su participación? Si sus hijos deciden participar, voy a ofrecer un libro para niños gratis para cada niño en su casa al final del estudio.

Si usted cambia su mente sobre participar, Usted puede retirarse en cualquier momento durante el estudio. Su participación es completamente voluntaria. Si decide retirarse, los datos de identificación serán destruidos inmediatamente. Su decisión de todos modos para participar no se va perjudicar sus relaciones en el futuro con la Universidad Auburn. En caso que usted decidir para participar, usted está libre para retractar su consentimiento y para discontinuar participación en cualquier tiempo sin pena. En caso que usted decidir, después de un tiempo, a retractar de este estudio, usted también puede retractar cualquier información que estuvo recogido de usted.

Su privacidad será protegida. Toda información obtenida en relación con este estudio se mantendrá confidencial. La información obtenida a través de su participación se utilizará para cumplir con un requisito de enseñanza como una tesis, para publicar en una revista profesional, o para presentar en una reunión de profesionales que utilizan seudónimos para su nombre.

Si usted tiene alguna pregunta sobre sus derechos como participante en una investigación, puede comunicarse con la Oficina de la Universidad de Auburn de Sujetos Humanos de Investigación o de la Junta de Revisión Institucional por el teléfono 334-844-5966 o por correo electrónico hsubjec@auburn.edu or IRBChair@auburn.edu.

Después de haber leído la información proporcionada, usted debe decidir si desea o no participar en este estudio de investigación. Su firma indica su voluntad de participar.

_____

Firma de persona que responde fecha

_____

Firma de investigador fecha

Appendix 5

Research Community Religious Leader Consent Form-English
(NOTE: DO NOT SIGN THIS DOCUMENT UNLESS AN IRB APPROVAL STAMP WITH CURRENT DATES HAS BEEN APPLIED TO THIS DOCUMENT.)

INFORMED CONSENT
Community Religious Leader
For a Research Study entitled
"Valuing the 'Often Overlooked' Hispanic Culture, Stories and Experiences, and Resources in Connecting Home to Schools for Literacy and Mathematics Learning"

You are invited to participate in a research study: To better understand from your viewpoint how to better help Hispanic families in their efforts to support their children's learning in math, reading, and writing at home. The community religious leader is a legal resident in the United States. The study is being conducted by me, Mr. Gilbert Dueñas, under the direction of Dr. Charles Eick in the Auburn University Department of Curriculum and Teaching. You have been selected as a participant because you can serve as a source of agreement or disagreement for the experiences of the Hispanic families and their difficulties.

What will be involved if you participate? If you decide to participate in this research study, I will ask that you allow me, Mr. Duenas, the researcher to meet with you at least once monthly for 30 – 45 minutes, for a period of four months to further clarify issues and emerging themes that I collect from the Hispanic families about their everyday household practices that influence at home literacy and mathematics learning and to help me with the interpretation of data.

Are there any risks of discomforts? The risk associated with participating in this study is loss of confidentiality through your interview responses. To minimize this risk, I will use pseudonyms when transcribing and analyzing your responses.

Are there any benefits to yourself or others? If you participate in this study, you can expect to receive a more in-depth understanding of the issues affecting the home-school partnership and strategies for making school learning in literacy and mathematics culturally relevant. I cannot promise you that you will receive any or all of the benefits described.

Will you receive compensation for participating? No.

If you change your mind about participating, you can withdraw at any time during the study. Your participation is completely voluntary. If you choose to withdraw, your identifiable data will be destroyed immediately. Your decision about whether or not to participate or to stop participating will not jeopardize your future relations with Auburn University, the Department of Curriculum and Teaching, or your relations with your child's school.
Participant's initials_____

Your privacy will be protected. Any information obtained in connection with this study will remain confidential. Information obtained through your participation will be used to fulfill an educational requirement (i.e. dissertation), to publish in a professional journal, or to present at a professional meeting using pseudonyms for your name.

If you have any questions about this study, please ask them now or contact Dr. Charles J. Eick at 334-844-6887 or eickcha@auburn.edu. A copy of this document will be given to you to keep.

If you have questions about your rights as a research participant, you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or email at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED, YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

_____	_____
Participant's signature Date	Investigator obtaining consent Date
_____	_____
Printed Name	Printed Name

Appendix 6

Research Minor Assent Form-English

MINOR ASSENT

For a research study entitled

"Valuing the 'Often Overlooked' Hispanic Culture, Stories and Experiences, and Resources in Connecting Home to Schools for Literacy and Mathematics Learning"

I am a third grade school teacher and I want to find out how families help children learn at home. So, I want to ask you, your mother and father to be a part of a four-month study. As part of the study, I would like to visit your home and watch how you learn different things like math, reading, writing and talking.

If you want to be part of this study, I am going to ask for your permission. I want to see and take notes about what you are doing in language (like reading and writing) and math learning at home. If your parents and you let me, I also want to get copies and take pictures of your school work.

I also want to talk with everyone in your family and you in a small group. My reason is to find out what you learned and what did you like while I was in your home to see what your family did everyday and how your family worked with the school.

Once I start my visits, you can stop at any time. Just tell your parents if you don't want to give me any more copies or pictures of your schoolwork to me, Mr. Duenas. No one will be angry with you if you want to stop at any time.

After your work with me is over, we will give you a children's book to show how much we liked your help.

If you have any questions about what you will do or what will happen in this study, please ask your parents or me, Mr. Duenas now. Always talk to your parents or ask me, Mr. Duenas about anything about this study that you like.

If you have decided to help us, please sign or print your name on the line below.

_____ _____

Child's Signature Printed Name Date

_____ _____

Parent/Guardian Signature Printed Name Date

(Parent/Guardian must also sign Parent/Guardian Permission form!)

_____ _____

Investigator obtaining consent Printed Name Date

Appendix 7

Research Minor Assent Form-Spanish

Asentimiento de menor importancia

Para un estudio de investigación titulado

Valorando la Cultura, las Historias y las Experiencias hispana a menudo dejada pasar, y los Recursos a Conectar en casa a Escuelas para capacidad de leer y escribir y Matemáticas que Aprende

Tú y tus padres o guardián están invitados a participar en un estudio de investigación para ayudar a entender desde el punto de vista de la mejor manera de ayudarle a aprender matemáticas, lectura y escritura en el hogar.

Si usted decide que quiere participar en este estudio, se le da permiso para que el señor Dueñas, a tomar notas sobre lo que está haciendo en materia de alfabetización y aprendizaje de las matemáticas en el hogar. También le permitirá tener copias y fotografías de algunos de sus trabajos y proyectos. Sólo puede hacer copias y fotografías de su trabajo y proyectos, si tú y tus padres o el guardián dan permiso para hacer eso.

También será más tarde hablar con todos en su familia y usted en un grupo de enfoque sobre lo que aprendieron y les gustó durante la visita del Sr. Dueñas 'a su casa para observar experiencias de la vida cotidiana y la manera en la familia relacionados con la escuela.

Puedes parar en cualquier momento. Sólo diles a tus padres si no quieren contribuir copias más o fotos de trabajo al señor Dueñas. Nadie se va a enfadar con usted si desea detener en cualquier momento.

Después de que su participación es más, le daremos un libro para niños para mostrar cuánto apreciamos su ayuda.

Si usted tiene alguna pregunta acerca de lo que van a hacer o qué va a pasar, por favor, pregunta a tus padres o tutor, o preguntarle al señor Dueñas ahora. Si usted tiene alguna pregunta sobre este estudio, queremos que se nos pregunte. Siempre habla con tus padres o con el Sr. Dueñas de nada acerca de este estudio que le gusta.

Si usted ha decidido que nos ayude, por favor, firmar o imprimir su nombre en la línea de abajo.

_____	_____	_____
Firma del niño	Nombre impreso	Fecha
_____	_____	_____
Firma de padre o guardián	Nombre impreso	Fecha

(El padre o guardián también debe firmar padre / tutor formulario de permiso!)

_____	_____	_____
Investigador que obtiene consentimiento	Nombre impreso	Fecha

Appendix 8

Initial One-on One Home Interview Questions for Parents--English

Part I

Semi-structured Interview Questions

1. How do you feel about the way the school communicates with you regarding policies, classroom learning, and special events?
2. In what particular ways has your child's school teacher asked for your involvement?
3. When you have attended a school event such as a workshop on a particular school topic or a program to recognize the children, what has been done to reach non-English speaking parents?
4. What would you suggest might help school teachers and non-English speaking parents communicate and build a sense of mutual trust and respect for each other?
5. In what ways might parents and teachers collaborate to include the child's skills, family knowledge and experiences in classroom learning?
6. What are some ways that your child has learned literacy and mathematics in your household, and how do you think that these experiences have helped your child's academic learning?
7. In what ways has your child's teacher supported your child's literacy and mathematics learning?
8. How do you feel about the way your child has developed and learned from their school experiences?

Part II

Possible Questions for Follow-Up

1. Please explain a little more about what you meant… not knowing who to turn to…and being uncertain of how to support your child's learning?
2. You said that you wanted to be involved with the school, but that you don't understand what is said in school activities, how do you feel about that?
3. So, what did you do when you did not understand the information or notes sent by the teacher?
4. We talked a lot about trust, why is having trust or "confianza" between the teacher and you so important?
5. I would really like to hear more of how you motivate your children to practice their reading and math in what they do every day.

Appendix 9

Initial One-on-One Home Interview Questions for Parents—Spanish

1. ¿Cómo se siente sobre la forma en que la escuela se comunica con usted en relación con las políticas, el aprendizaje de aula y eventos especiales?
2. ¿En qué manera particular el maestro de la escuela de su hijo le pidió a su participación?
3. ¿Cuando han ido a un evento de la escuela o un programa para reconocer a los hijos, que han hecho la escuela para ayudar a los padres que no hablan inglesa?
4. ¿Qué sugeriría usted puede ayudar a los maestros de la escuela y los padres que no hablan Inglés comunicar y crear un sentido de confianza mutua y el respeto por los demás?
5. ¿De qué manera podrían los padres y los maestros colaboran para incluir las habilidades del niño, el conocimiento de la familia y las experiencias de aprendizaje en el aula?
6. ¿Cuáles son algunas maneras en que su hijo ha aprendido la alfabetización y las matemáticas en su casa, y ¿cómo cree que estas experiencias le han ayudado el aprendizaje académico de su hijo?
7. ¿De qué manera el maestro de su hijo ha ayudado su niño aprender la alfabetización, la lectura, y las matemáticas?
8. ¿Cómo se siente sobre la forma en que su hijo ha desarrollado y aprendido de sus experiencias de la escuela?

Part II

Possible Questions for Follow-Up

1. ¿Por favor, explique un poco más sobre lo que significa que usted no sabía a quién recurrir y sobre no estar seguro de cómo apoyar el aprendizaje de su hijo?
2. ¿Usted dijo que quería estar involucrados con la escuela, pero que no entiendes lo que se dice en las actividades escolares, ¿cómo se siente acerca de eso?
3. ¿Por lo tanto, ¿qué hizo cuando usted no entiende la información o notas enviadas por el maestro?
4. ¿Hemos hablado mucho de confianza, ¿por qué es que la confianza entre el profesor y ustedes, como los padres de sus niños muy importantes?
5. Me gustaría saber más de cómo motivar a sus hijos a practicar la lectura y las matemáticas en lo que hacen todos los días.

Appendix 10

Initial Home Focus Group Questions for Family—English

1. I have noticed that sometimes it's hard to help your child with the math homework because you only speak in Spanish. What would you like your child's school to do to make it easier for you to help with your child's learning?
2. What might be your sentiment about your child's school using only the English language and the textbook to teach mathematics to your child, and would you like for other experiences and examples to be included?
3. You've said before that meetings and school events are presented only in the English language. How has that situation made you feel, and what changes would you like the school to make to help you feel included?
4. You have talked about problems in your child learning to read and understand while using the school textbooks. What would you like to do to help the classroom teacher make learning more meaningful to your child?
5. I have noticed that your children only use the Spanish language to communicate with their parents and their brothers and sisters. Your children also seem very comfortable doing things around the house. How do they feel about not being able to use their Spanish language to do their homework or their work in the classroom?

Appendix 11

Initial Home Focus Group Questions for Family—Spanish

1. ¿He notado que hay veces es difícil ayudar a su hijo con la tarea de matemáticas, ya que sólo hablan en español. ¿Qué le gustaría la escuela de su hijo a hacer para que sea más fácil para usted ayudar con los estudios de su hijo?
2. ¿Cuál podría ser su sentimiento acerca del maestro usando solamente el idioma de Ingles durante conversaciones de instrucción, los libros o textos para ensenar sus niños? También, te gustaría que el maestro incluir experiencias y ejemplos de su cultura o otras culturas en la instrucción de matemática?
3. Usted ha dicho antes que las reuniones y eventos de la escuela se presentan sólo en inglés. ¿Cómo ha esa situación hizo sentir? ¿Qué cambios desea la escuela para hacer para ayudarle a sentirse incluidos?
4. Ha hablado de problemas en su niño aprendiendo a leer y entender al utilizar los libros de texto. ¿Qué gustaría hacer para ayudar al profesor de aula hacen aprendizaje más significativo a su hijo?
5. Me he dado cuenta de que sus hijos utilizan sólo el idioma español para comunicarse con sus padres, sus hermanos y hermanas. Sus hijos también parecen muy cómodos hacer las cosas en casa. ¿Cómo se sienten acerca de sus niños no poder utilizar su idioma español para realizar sus deberes o su trabajo en el aula?

Appendix 12

Sample Field Notes
April 22, 2010
Gilbert Duenas
6:00 – 9:30 p.m.
Household of Family 1
Third set of notes

An Unknown Distressful Moment:

As I drove closer to their trailer home this afternoon, I noticed a woman walking on the street with her hand masking her face and showing tears falling down her face. It appeared to me that something terrible had occurred. In arriving at my scheduled household visit, the mother was outside playing with her daughter and when she saw me she expressed a heartfelt greeting in Spanish and called me Professor Gilberto. From my previous visits she learned that my first name was Gilbert. As we continued to talk, she expressed concern about the [Hispanic] woman who passed her home crying in an almost uncontrolled manner. She explained to me that she had just moments earlier observed the woman's husband driving away with the children. We looked around the corner street but we could not determine where the crying woman had walked to.

A Communication Event:

Seconds later a former Hispanic student at my school passed by and I asked if he remembered me and he replied "yeah" and I casually indicated that his answer should be "yes." He walked away as if I had said something uncomplimentary. Both the mother and I discussed our concern about the reason for the young man's manner of reply to an adult.

Discussion about Homework and At-School Learning:

After 10 minutes, we now entered their home and I asked where it would be best to sit down. As I entered their trailer home, the living room was filled with lots of toys and the mother indicated that the children were often playing in the home and leaving their toys on the floor and furniture. We walked to the kitchen table and we sat down. After some light conversation, she called for her son to bring his homework to her so that she could review his work. We discussed her son's conduct worksheet which her son had tried to get his mother to sign while they were driving to the school. The mother indicated that she had questions about it and after some discussion she discovered that her son had missed five math homework assignments and that she felt that she had to track his homework assignments to ensure that he did what was expected by the teacher.

Cultural Values – Toward Children's At-Home Learning

She expressed some doubt of how to guide her son's academic learning, as she indicated her child was growing up in a different generation than her. She indicated that ordinarily he only

had to do very light chores at home such as take his clothes to the laundry room. She felt that her son had gotten used to her reminding him to get the homework done and that on those weeks when both the father and she had to work extended hours her son was not as dutiful about doing homework. In her words, "la contradicción que él tiene es parte de su personalidad; …todavía activa como niño pequeño o niño grande." (Translation: The contradiction that he has is part of his personality; he acts like a small child and at times like a grown child.) In her mind, it was important to not be so strict on their child and "relaje un poco" (translation: relax a little bit) and offer consideracion (some understanding) in the raising of their child. She mentioned to me (with a winked eye) that she was planning to take away her son's Nintendo game and return it to Walmart because of his laziness and not applying himself to the completion of homework. She also indicated that often the grandmother, her sister, and a cousin would buy gifts for her son in the hope that the son would apply himself in his studies in order to be successful later on. We got involved in a discussion of how parents were central to the children's learning, "el pilar de los ninos son los padres" (The pillar of the children are the parents) and the parents "son un parte de un processo cuando los ninos estan creciendo." (Translation: The parents are a part of a process when the children are growing.) Y ojala que los niños van hacer mas mejor de mi en sus vidas. (Translation: Hopefully, the children will do more than me in their lives.)

Seizing a Teachable Moment—Supporting At home Learning:

His son indicated that he had Science homework, some mathematics and some reading homework. At this point, the son showed his mother the results of his science homework which consisted of preparing a list of levers and pulleys. The mother looked at it and asked her son if he had completed it. The son indicated that he had finished the homework. I asked if I could look at it. I quickly observed that the work was incomplete as had not fully answered the questions. Next, I asked if I could assist her son with the Science homework. I asked for the son's Science book and I showed both parents (the father had arrived just a few minutes earlier) how their son might use the Glossary section of the book to find a brief definition of a term and its location in the textbook.

At this point, we engaged in a hearty discussion in both English and Spanish on the science terms, lever and pulley. Through our conversation, we identified several examples such as the car pulley, a wrecker pulley, a wagon pulley, and so forth. We used the textbook as a springboard for helping the parents recall different examples from their life experiences. At this point, the child, the parents and I were all enjoying the free flow of ideas that were surfacing on examples of pulleys and levers, although at times we struggled with matching our English and Spanish translations. The father and I mutually agreed that it was important for the child to not only know a list of both terms but also be able to apply the terms to everyday experiences.

Parent's Reflections of Prior Schooling in Mexico:

In fact, the father recalled a similar event while in school at Mexico where the teacher gave a 10-question homework assignment but the test involved comprehensive level questions which surprised everyone in the class but the students (like him) had not sufficiently prepared. The father also asked questions about letter sound combinations which often proved problematic for

him such as the words: graph and photo (f sound) the word lamb (which has a silent b), or the words late and page (which have the long a sound but the vowel e is silent.

He asked if there was a general rule for words that had sounds that did not match the combination of letters. I explained that there were general rules for letter sounds but that some words were spelled differently than their actual sounds. In our conversation, the mother indicated that she had only attended a two year technical college and that her husband had attended about two years of college.

As we neared the end of this session, I asked the child what he had enjoyed about this free flow of ideas and what he desired could be different in his academic learning. He talked about being successful in life and doing a good job at school but also he indicated that he wished his parents could serve as tutors.

Discovering a Child's Joy for Literacy Learning:

During the few minutes that the mother was preparing the dinner for her husband, I engaged their young daughter in a light conversation about a children's book, *The Inchworm and I.* I asked the child to identify several parts of the book cover, such as a purple color, a black color, un medidor [inchworm] and other illustrations on the book cover. She was also able to identify the object I was holding as mi libro (translation: her book); the key on my key ring as la llave; la moneda (a coin or medallion) in my wallet; and las savannas (the table covers). At this point she began to show me other parts of the book. She was very excited about the book. The father would later disclose to me that he had walked away to talk with his son about complying with the punishment of no television due to not completing the five homework assignments.

Sharing a Family Dinner and talk about Growing up in the United States:

Around 7:30 p.m. the mother invited me to join in the dinner that she had prepared for her husband and I graciously accepted. The father continued to express his concern about how to reach out to his son, in a way "no capta el esfuerzo que hacemos como padres…que el no aprecia." (translation: He does not grasp the effort that we make as parents. He does not appreciate.) He also commented that his son "cambia su manera de comportando" (translation: changes his manner of behaving) as he was gradually growing up. In his view his son was very polite but that they really wanted to know how he was doing in his studies and if he had questions about the manner that the parents tried to communicate with their child. He also indicated, "el piensa que porque yo nomas hablo español que yo no puedo ayudarle en sus estudios." (Translation: He thinks that because I only speak Spanish that I cannot help him with his studies.)

It was about this time that the mother asked in Spanish how I felt that they were doing as parents in rearing their child. I indicated that their question was very important and that it signified a trust [a confianza] that they were placing in me. I shared my own thoughts with them such as that I had observed their continued efforts to talk with their oldest child and treat him with respect and with the expectation that they wanted him to succeed. I also asked the son how he felt about the discussion we had just had with their parents and if this was something that he

appreciated. He indicated that he enjoyed it but wished that his parents were also able to serve as tutors for him. I passed on this information to the parents.

Throughout our dinner conversation, we exchanged views on rearing children, and their efforts to provide a balance for their son, not with punishments but with understanding and support and encouragement for their child to become more successful in life than their own parents.

OC: As we concluded this evening's visit, I felt that this interaction was very significant in terms of building a stronger sense of rapport and trust. The parents are very interested in their child's education and effort to do his best but at times are concerned about their prior academic background and limited English language proficiency. The father talked a great deal about striking a balance between being too strict and being supportive and nurturing to their child. They felt that their son was very capable but that at times was a bit lazy. They asked me questions about a particular magnet school in this area and that they were considering whether to apply for their son to attend such a school because of the increased academic challenges.

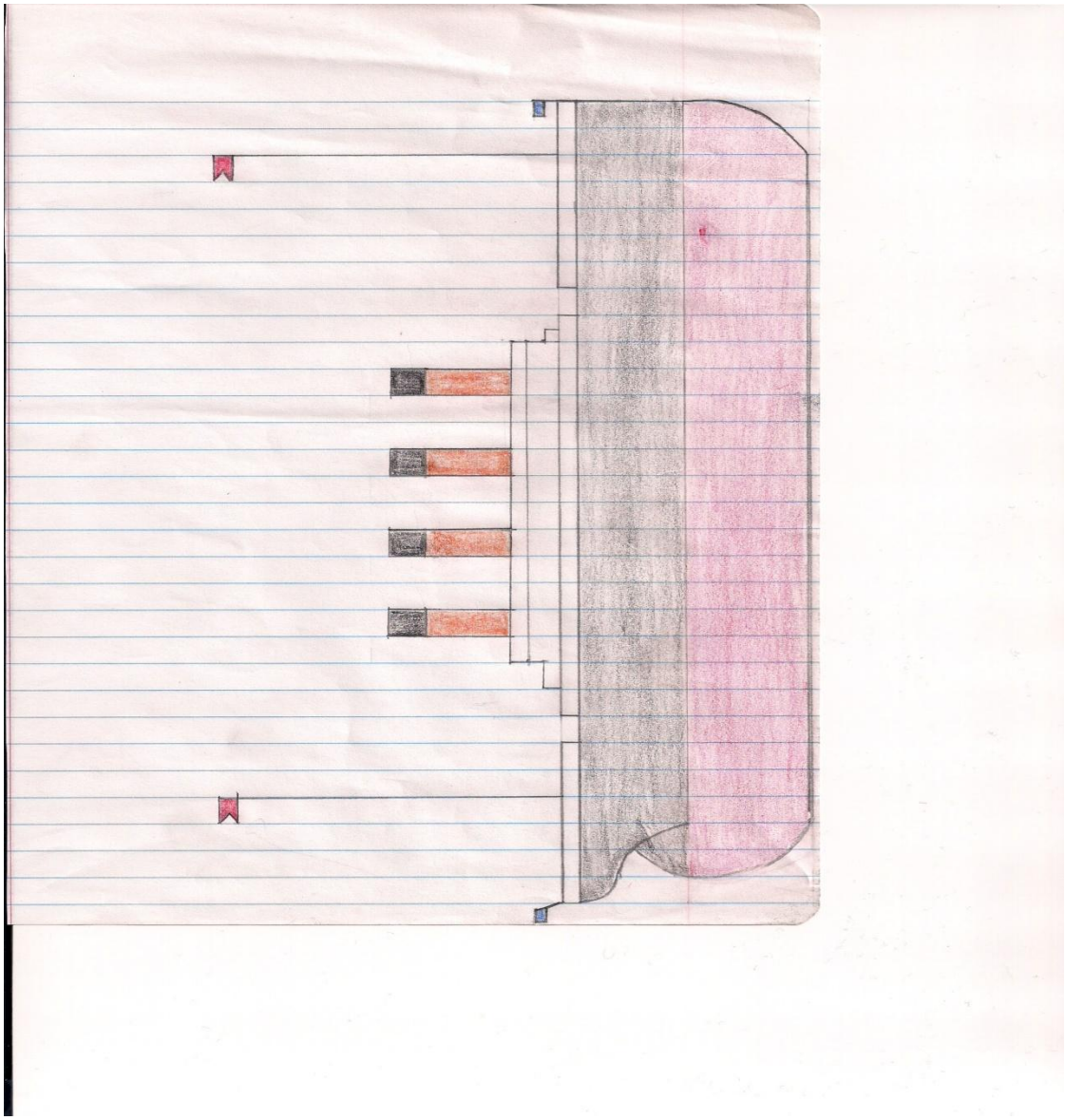
Appendix 13

Sample Matrix with Coding of Field Notes

Emerging Themes	Family 1	Family 2	Family 3	Community Religious leader
5. Dual Language use at home Switching between languages to reach understanding as family or in homework discussions Children as language brokers between parents and school Children often able to speak but not write [or read] in Spanish language Use of native language with family, relatives, neighbors Preserving the native language—a connection to family, cultural, customs	Primary language used at home is Spanish…the oldest son, able to speak English; often relied on to translate school correspondence sent home and comments at school events from English to Spanish. **[FV 17]**; oldest child speaks both languages depending on whether he talks with parents or friends; but he has difficulty writing in Spanish; learned to speak Spanish since birth **[FV 4]**; youngest daughter uses both languages to answer questions about a book she reads; primary language at home is Spanish **[FV 4; 7]**; children use English language in talking with friends and doing homework; but they switch back to Spanish in helping translate mail for parents **[FV 17]**; older son often uses Spanish language when talking with his parents to ensure they completely understand him; or when he tries to explain something to his younger sister **[FV 50]**; the daughter has more quickly adopted the English language because of constant interaction with older brother **[FV 4; 50]**; older son talks with his younger sister in both languages while she colors or paints pictures in a coloring book; or practices her letter sound pronunciation with one syllable words **[FV 14]**; mother comments her children and she switch between languages so they can better understand each other as homework questions are discussed. The mother is grateful her son can speak Spanish so he can explain to his mother the school work to be done **[FV 50]**	Because parents speak very little English, they communicate in Spanish with children **[FV 38]**; mother indicated her oldest child can carry on a conversation in English language but at times becomes stuck not knowing a particular word in English language, and thus uses Spanish language to fill the void. Their youngest child has begun to learn to speak in English language; oldest child prefers to speak in Spanish at home but he like his younger brother can't read or write in that language; while her children work together on homework; they often use both languages, but when talking to their parents on any topic, the children use only Spanish language **[FV 28; 38; 41]**; on one occasion the kindergarten child used a post it note to write a note, I love you mother **[FV 15]**; mother comments her children's daily conversations with each other at home in Spanish language helps them better understand the homework in reading and in doing math work, because of their talks to explain what is said at school **[FV 48]**; son comments that by speaking in Spanish at home he is able to communicate with his parents and they understand each other, and he uses Spanish at home to help his younger brother better understand school learning such as reading books **[FV 48]**;during a family barbecue to celebrate a child's first communion, I observed their 2 children conversing with neighbor children in English language **[FV 5]**	Primary language used at home between the children is English but with the mother it may vary between English and Spanish but with the father it is only Spanish **[FV 6, 16, 26, 30]**; mother believes she has intermediate level of English speaking fluency but she can't write in English **[FV 36]**; mother believes her second oldest daughter can speak and write in both languages; but uses actual sounds when writing in Spanish **[FV 36]**; mother believes her third oldest child can communicate at an intermediate level in both languages but he can only speak Spanish **[FV 36]**; when second oldest child is with neighbor friend's, she will use either language but at school uses only English language, unless students are Hispanic **[FV 36]**; children switch between English and Spanish language in collaboratively doing homework, interacting with each other at home and Hispanic neighbor friends, and while talking with parent **[FV 3; 6]**…the second oldest daughter can easily speak Spanish, but has difficulty writing in Spanish; talk only in Spanish with their father; but switch between English and Spanish with their mother **[FV 3; 26; 30]**; mother commented it's important her children not forget their native language; if for no other reason but to communicate with their relatives in Mexico **[FV 46]**	There is a "choke cultura" a clash in their culture because on the one hand Hispanic parents tend to raise their children in the home to collaborate and help others but in the American society it tends to be individualistic, very little contact with others, often times a competition. **[FV 29]** In the US culture, we need to realize that the first generation of Hispanics who came to the US were able to communicate in Spanish; but if not practiced at home and learned properly, the use of the Spanish language may eventually be lost **[FV 44]** Yes, the children do use both languages to fill in where they don't know the English word…or doesn't have concrete ideas to express what they want to say. In many American schools in which English is the dominant language, the Hispanic children may believe that because there's no necessity to speak Spanish in the school they gradually lose interest in retaining their native language. **[FV 29]** I think parents want their children to not forget their native language (Spanish) so that the parents can communicate with their children and help them in their homework **[FV 44]**

Appendix 14

Example 1 of Collaborative Drawing and Coloring Project



Appendix 15

Example 2 of Collaborative Drawing and Coloring Project

Appendix 16

Example 1 Solving Two-Digit Division in the Mind