ENHANCING SCHOOL COMPETENCE IN ENGLISH LANGUAGE LEARNERS: THE ROLE OF TEACHER-STUDENT RELATIONSHIPS IN PRESCHOOL.

A Dissertation

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Abstract

Examining the early educational experiences of English Language Learner (ELL) students has become increasingly important in recent years; this is especially the case for Hispanic ELL students, who constitute around 80 percent of the total ELL population. The number of ELL students attending school in the U.S. continues to grow rapidly, and schools across the country are faced with the unique challenges of educating students that have limited proficiency in English. Given an increased risk of poor school outcomes for this group, it may be particularly important to provide Hispanic ELL students with high-quality preschool experiences. However, little is known about what components of the preschool experience promote school competence within the Hispanic ELL population. Grounded on a considerable theoretical and empirical base, this study suggests that the *relational* experiences of ELL students in preschool are a critical component of early schooling, and that the presence of high-quality relationships in preschool may positively impact school competence. The purpose of this study is to examine 1) what types of relational experiences Hispanic ELL students have in preschool, and whether these differ from the relational experiences of non-ELL students, 2) whether the relational experiences between Hispanic ELL students and their teachers are a function of child characteristics, teacher characteristics, classroom characteristics, interactions, or a combination of all four, 3) to what extent these relational experiences predict school

competence for ELL students, and 4) what variables moderate the effects of teacher-student relationships on student outcomes.

The primary study sample included 351 Hispanic ELL preschoolers taken from the National Center for Early Development and Learning (NCEDL) Multi-State Study of Pre-Kindergarten, and from the State-Wide Early Education Programs Study (SWEEP). Parent- and teacher-reports, as well as observational measures, were used to evaluate the quality of relationships and interactions, and direct child-assessments and kindergarten teachers' responses to ratings scales provided data on child-outcomes. Hierarchical Linear Modeling (HLM) conducted with HLM software was used to address each study question.

Results show that Hispanic children who were not proficient in English experienced less conflict and less closeness with teachers than their English-proficient peers. In addition, child gender, teacher sensitivity, child English language ability, the teacher's ability to speak Spanish, class size, and percentage of poor students predicted differences in the quality of teacher-child relationships and interactions. Finally, results show that relational variables predict both social and academic outcomes in Hispanic ELL students. Results have important implications in developing appropriate interventions that might help to promote success for Hispanic ELL students.

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APPROVAL OF THE DISSERTATION

This dissertation, "Enhancing School Competence in Hispanic English Language Learners: The role of teacher-student relationships in preschool," has been approved by the Graduate Faculty of the Curry School of Education in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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TABLE OF CONTENTS

Page

LIST OF TABLES

TABLE Page

LIST OF FIGURES

FIGURE Page

CHAPTER 1

INTRODUCTION AND REVIEW OF THE LITERATURE

The Importance of Examining Preschool Experiences of Hispanic ELL Students

Providing appropriate early educational experiences for English Language Learner (ELL) students has become a critical issue for both educators and policy makers for a number of reasons. The following section provides an overview of those reasons, and argues that a focus on ELL student's experiences in preschool is necessary because (a) the number of ELL students in U.S. schools has increased rapidly in recent years, and ELL populations have begun to disperse throughout the country to locations that have previously not dealt with the special needs of immigrant, refugee, and other non-English speaking populations, (b) ELL children in the schools face a number of challenges, including elevated risk for poor school outcomes, (c) high quality preschool experiences have the potential to increase success in school; and (d) therefore, it is critical that research begin to identify what components of preschool programs promote success in ELL students.

ELL Students are Among the Fastest Growing Sectors of Preschool Classrooms

Recent increases in immigrant populations in the U.S. bring unique challenges to the nation's schools. In 2000, 20% of all children in the U.S. under the age of 18 were either first or second generation children of immigrants, and this number is projected to rise to 30% by the year 2015 (Fix & Passel, 2003). This increase in school-aged children of immigrants means an increase in the number of children requiring English language

services in the schools. U.S. schools experienced an increase of almost one million English Language Learner (ELL) students between 1994 and 2000 (Meyer, Madden, & McGrath, 2005). ELL students comprised 7% of the total U.S. school population in 2000; this is over 3 million ELL students nationwide (Meyer, Madden, & McGrath, 2005). Reports from 2003 indicated as many as 4.5 million ELL students in the nation, which constitutes about 8% of the student population (Zehler et al., 2003). In terms of preschool composition, 27% of children enrolled in Head Start programs during the 2002-2003 school year did not speak English in the home, and the vast majority of these children were Spanish speaking (Head Start Bureau, 2004a). These numbers are even greater in certain geographic locations. In 2004-2005, 45% of 5 year olds entering public kindergarten programs in California did not speak English as their home language, with 82% of these children speaking Spanish (California Department of Education, 2005).

A further challenge to educators across the country is the increasing geographic dispersion of ELL students to locations that have historically not served this population. Although prior to 1995 nearly 75% of the immigrant population was concentrated in six states (CA, NY, TX, FL, NJ, and IL), as of 2003 only two-thirds of the U.S. immigrant population lived in those states (Fix & Passel, 2003). There are now 22 states that are considered new "growth states" in which approximately 4% of all students in the schools are considered to have limited English proficiency (LEP). Additionally, children considered LEP generally attend schools with high percentages of total LEP students (Fix

& Passel, 2003), which means that certain schools are likely to have high demand for ELL related services. These schools may, understandably, have more difficulty achieving annual goals related to the standards of learning. In short, an increasing number of schools in a greater range of locations across the country are faced with the challenge of providing appropriate educational services to ELL students.

Within the ELL population, the largest racial/ethnic minority group is Hispanics, with around 80% of ELL students speaking Spanish as their home language (Perez, 2004). The Hispanic population in the United States has increased over the past half of a century, with over 13 million Hispanic youth in the US in 2002 (Ramirez & de la Cruz, 2003). In 2002, almost 22% of total births in the U.S. were Hispanic, a rise of 16% from the previous decade (Martin et al., 2003). This population continues to grow rapidly, and it is projected that over 17 million Hispanic individuals under the age of 18 will occupy the U.S. by the year 2020 (U.S. Census Bureau, 2003). Hispanic youth in general, as is the case with most ethnic minorities, are likely to have different educational needs than other students, and this is especially the case for the subgroup of Hispanic children who also qualify as ELL.

Despite Noted Strengths, ELL Students are at an Increased Risk for Poor School Outcomes

Hispanic students and families have been recognized as bringing a number of particular strengths to the school environment. Hispanic families, in general, tend to provide secure, supportive, and stable family environments. These families are more likely to have two-parent households, and Hispanic children tend to have greater or equal mental health than their peers (Crosnoe & Lopez-Gonzalez, 2005). In addition, Hispanic

children have been found to have equal (if not greater) intra- and inter-personal competence than their non-Hispanic peers, and their bilingual abilities are an asset both to individual children and to society as a whole (see Espinosa, 2007). These positive strengths have the potential to serve as an academic resource for Hispanic students. Unfortunately, despite these noted strengths it appears that the services provided by our educational system are not sufficient in helping this group of students to reach their potential.

A primary concern surrounding the growing number of Hispanic ELL children in preschool is the elevated risk of poor school outcomes for this group. Hispanic children in general have been found to score more poorly on cognitive measures and to display lower math achievement and lower reading achievement than their White and Asian peers (Lee & Burkam, 2002; West et al, 2000). In fact, low-income Hispanic children participating in the Early Childhood Longitudinal Study of Kindergarten Children (ECLS-K) scored significantly lower (over half a standard deviation) than the national average in both math and reading achievement at entry to kindergarten (Lee & Burkam, 2002). Children with limited English fluency are also at risk of poor academic achievement and reading difficulties compared to English speaking peers (Regalado, Goldenberg, & Appel, 2001). Kindergarteners who come from homes where English is not the primary language are less likely than students who speak English in the home to score in the top quartile on measures of academic knowledge (West et al., 2000). These learning gaps exist for both first- and second-generation children, and findings of achievement differences between ELL and non-ELL students are especially strong in Hispanic and Latino ELL populations (see Garcia, Jensen, Miller, & Huerta, 2005). In

addition, ELL children continue to experience lower academic achievement throughout school, including higher risk of high school drop out and lower rates of college enrollment (Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003; Rumberger, 2004). Hispanic/Latino students have the highest drop-out rate of all ethnic groups (U.S. Department of Education, 2003). In addition to poor academic outcomes, ELL students have been found to have higher rates of shy-anxious behaviors, lower ratings of competency, and lower peer social skills and assertive skills than their non-ELL peers (Spomer & Cowen, 2001). ELL children who enter the U.S. with refugee status are at even greater risk of deleterious psychological, social, and educational outcomes (see Lustig et al., 2004; NCTSN, 2005).

One factor that contributes to higher risk of school problems, especially in Hispanic ELL students, is socioeconomic status (SES). For example, Hispanic children are much more likely than non-Hispanic white and Asian American children to have parents with low levels of educational attainment (Ramirez and de la Cruz, 2003). In fact, in 2002, around 27% of Hispanic adults in the U.S. over the age of 25 had completed fewer than 9 years of education, compared to only 4% of the White population. The level of parental education is particularly low for Mexican children. Only 53% of all Mexican children born in 2002 had mothers with more than a high school degree, whereas 88% of White children born that year had mothers with at least a high school diploma (Martin et al., 2003). Among ELL students, 52% of ELL students were in the in the lowest two quartiles for SES; of Hispanic ELL students, the 80% judged to be least fluent in English were also in the lowest two SES quartiles (Espinosa, Laffey, & Whittaker, 2006.) This is important because the risk of poor school achievement is much greater for children

whose parents have lower levels of formal education (College Board, 2000). Although some of the achievement gap can be accounted for by differences in SES between groups, Hispanic students continue to have lower achievement, both in kindergarten and throughout high school, when compared to White students of comparable SES (see Garcia et. al, 2005).

Other researchers have proposed that ELL students may experience poorer educational outcomes due to the nature of their schooling. For example, research suggests that ELL students may be more likely than non-ELL students to be placed with teachers who lack the appropriate credentials or who have less experience (Rumberger & Gandara, 2004). Another concern is unfair comparison of ELL students to White children based on standards developed for the White population (Valencia, 2000). Due to possible cultural and language bias in standardized testing, low estimates of academic and cognitive ability may result in ELL student placement in low-level or remedial classes, which in turn may predispose these children to lower academic gains (see Abedi & Gandara, 2006). Clearly, it is important to explore characteristics of early education that might contribute to unequal achievement between ELL and non-ELL students, and to ensure that the educational system in the US is equipped to provide an adequate education for this population.

Early Education Experiences are Important in Promoting School Competence

Proving high quality early educational experiences for Hispanic ELL students may help to ameliorate some of the risk associated with both Hispanic and ELL status. Of particular importance to Hispanic ELL students is the finding that children who attend high quality preschool programs are more likely to experience success in kindergarten

and early elementary school, and that this is particularly the case for children from low SES families (Barnett, 1995; Bowman, Donovan, & Burns, 2001; Gormley, Gayer, & Dawson, 2004; Heckman & Masterov, 2004; Magnuson, Ruhm, & Waldfogel, 2004). Although more research focusing specifically on the benefit of preschool programs for Hispanic ELL students is needed (Garcia et al., 2005), preliminary research shows promising results. Hispanics constituted about 30% of all students enrolled in Head Start programs in 2002, and analyses of Head Start data suggest that Hispanic students who participated in this program experienced significant academic benefits when compared to their Hispanic peers that did not participate in the programs (Head Start Bureau, 2003). Bilingual programs may be particularly advantageous for Hispanic ELL students, as students enrolled in high quality programs that used English and Spanish in equal amounts were found to have better language development in both languages than the comparison group (Rodriguez, Diaz, Duran, & Espinosa, 1995; Winsler, Diaz, Espinosa, & Rodriguez, 1999).

There is strong suggestion that targeting interventions in the early years of education is more effective than waiting until later in children's academic careers (see Heckman & Masterov, 2004; Ramey & Ramey, 1992). One reason for the effectiveness of early intervention may have to do with neurodevelopmental factors, such as the increased plasticity of children's brains at this stage in life, which increases their ability to effectively incorporate new information and to maintain gains over time (see Shonkoff & Phillips, 2000; Kagan, 2005). In addition, targeting interventions early appears to be economically advantageous in that early childhood interventions cost substantially less than remediation during the middle or high school years (Reynolds & Temple, 2005;

Reynolds, 2003). Moreover, early experiences in school (prior to third grade) are predictive of latter academic achievement, and economic and professional status later in life (Currie, 2001; Heckman & Masertov, 2004).

Unfortunately, Hispanic children are less likely to participate in preschool programs than are African American or White children (Jamison, Curry, & Martinez, 2001). In fact, only about 32% of Hispanic children participate in preschool programs, compared to 55% of non-Hispanic Whites and 50% of African American children. Although the reasons for this low participation rate are uncertain, it is speculated that both cultural differences (e.g., preference for childcare in the home) and financial factors (e.g., low SES) contribute to this lower enrollment (see Fuller, Holloway, & Liang, 1996). The argument that financial factors prevent Hispanics from utilizing preschool is especially strong given that, in general, children from higher income houses and those with more educated mothers are more likely to participate in preschool programs than are children from lower income houses or with less educated mothers (Jamieson et al., 2001). Hispanic children who are enrolled in preschool programs are more likely than non-Hispanic White students to attend public preschool programs, as are children from families of lower SES (Jamison et al., 2001). This suggests that public, low cost programs are more accessible to Hispanic ELL students than higher cost private programs.

What Specific Components of Early Education Promote School Success?

Garcia et al. (2005) suggest that research must both establish the overall effectiveness of preschool programs for Hispanic populations, and identify what specific components of preschool programs influence development and achievement in this population. These authors note that “none of the leading model preschool programs were

designed specifically for the growing Hispanic population, especially the large number of children of immigrants from low SES homes in which Spanish is the primary language" (p. 50). Not only do we lack information as to the overall effectiveness of preschool programs for Hispanic ELL students, but there is a dearth of knowledge surrounding specific components of preschool programs that contribute to success in this population. Not all preschool programs are equal in quality, and some have much greater positive effects on student outcomes than others. For example, in a large study of existing state-funded preschool programs, considerable variation was found between programs in terms of the quality of instruction provided to students (FPG Child Development Institute, 2005). It is especially important to identify what preschool experiences lead to better social and educational outcomes in Hispanic ELL students.

Based on theory and research on child development, it is reasonable to suggest that the effectiveness of preschool programs for Hispanic ELL students is related to a number of factors. This is consistent with a broad theoretical base that suggests that child development is influenced by a number of systems (e.g., Bronfenbrenner & Morris, 1998; Ford & Learner, 1992; Learner, 1998; Magnusson & Stattin, 1998). Systems are defined by Pianta, Hamre and Stuhlman (2003) as "units composed of sets of interrelated parts that act in organized, interdependent ways to promote the adaptation and survival of the whole" (p. 202), and include characteristics of children, characteristics of their teachers, characteristics of their home environment, and characteristics of their school environment. Reardon (2003) explored the extent to which achievement gaps between groups (based on both ethnicity and SES) are influenced by within, between, and outside of school factors, and found that differences between groups are influenced by

experiences at home over the summer, differences in the quality of education between schools, and differential achievement of various groups of students within the same school. In addition, the concept of school readiness is generally thought to include attributes of the child (e.g., literacy skills, social competence), family factors (e.g., maternal education, caregiving practices), and school and community factors (e.g., available resources) (Burchinal, Peisner-Feinberg, Pianta & Howes, 2000; Kagan, Moore, & Bredekap, 1995). Similarly, Espinosa (2007) suggests that there is great diversity within Hispanic ELL populations, and that students' home languages, their exposure to English at young ages, their level of fluency with their home language, and family and community factors are all likely to influence how these children perform in school (Espinosa, 2007). Therefore, systems affecting the early educational success of ELL students likely include attributes of the child (e.g., language ability, personality, country of origin), the child's family (e.g., SES, parenting practices), the community (e.g., availability of low-cost preschool programs), and the classroom (e.g., quality of the classroom, presence of other ELL students), as well as parent-child and teacher-child relationships, the child's peer-groups, and the broader cultural context.

The Potential Importance of Relationships in Promoting School Competence in ELL Students

One particularly important component of early childhood education for Hispanic ELL students may be the nature of the relationships that they form with their teachers. Substantial research has established that teacher-child relationships are an important component of early educational experience in the general population; however, little research has examined the potential importance of teacher-child relationships specifically

for Hispanic ELL students. The following section argues that relational processes are among the most important components of the preschool environment, and will address (a) the association between language development and relational processes, (b) the theoretical basis for focusing on relational processes, and (c) research in the general population that provides strong evidence to suggest that teacher-child relationship quality is an integral component of preschool experience for ELL students.

The Importance of Language and the Link between Language and Relationships

Language acquisition is undoubtedly one of the most important areas of development during early childhood. Unfortunately, language is also an area that appears to be a particular challenge for ELL students. There is some suggestion that Spanish-speaking ELL students, especially those with lower SES, are not just behind their peers in terms of English language ability, but also in terms of their native-language ability (see Espinosa, 2007). For example, low SES ELL students tend to score lower on standardized language-ability tests, even in their home language, than their peers (Head Start Bureau, 2004b). Being behind in language ability places these children at-risk of poor school outcomes (see Regalado, Goldenberg, & Appel, 2001). In addition, language is considered a central component of school readiness, and is almost always measured as an indicator of school competence in large-scale studies (Espinosa, 2007), meaning that ELL students' abilities to experience success in elementary school may depend, in part, on their ability to develop language skills in preschool. Therefore, one method of improving preschool effectiveness for ELL students may be to target factors in the preschool environment that enhance children's ability to learn language.

Language is learned primarily through the social interactions that children have with peers and adults (Bowman et al., 2000; Pianta, in press). Espinosa (2007) writes that "Sociocultural theory posits that individual development is embedded within and shaped by social interaction and that knowledge is created by the interactions between teachers and students" and that "studying the cultural and linguistic characteristics of the children, teachers, and peers can provide a better understanding of the relationships among language, culture, and cognitive development" (p. 182). Most ELL children develop knowledge of their home language early in life, through their interactions with adults in their home. As they enter school, their interactions with teachers become the avenue through which they develop language skills in their second langue (and sometimes also in their home language). Therefore, the nature of the relationships and interactions that Hispanic ELL children have with their teachers is likely an integral component of their language development and subsequent achievement in school. Focusing on relationships between ELL students and their teachers may provide useful information about what can be done to enhance academic and social competence in this population.

Theory Supporting Relationships as a Central Component of School Success

There is a considerable theoretical base suggesting that examining relational experiences in school will provide useful information as to the experiences of Hispanic ELL students in preschool (e.g., Ford & Learner, 1992; Learner, 1998; Pianta, 2006; Pianta, Hamre, & Stuhlman, 2003). Bronfenbrenner and Morris (1998) suggest that it is interactions between children and their context(s) over time – termed *proximal processes* – that shape development. In fact, there is growing evidence that *relational* aspects of children's environments, rather than single attributes of the child or teacher, have the

most pronounced effect on child outcomes (see Pianta, 2006; Pianta, Hamre, & Stuhlman, 2003). For example, teacher reports of their relationships with children are more predictive of future academic and behavioral outcomes in children than are teacher's reports of discrete child behaviors (Hamre & Pianta, 2001). Moreover, teacher reports of their own prior relationships, as well as reports of their current relationship quality with students, relate more to their behavior and attitudes toward students than does the amount of training or education they have received (Stuhlman & Pianta, 2001). Literature on academic success also suggests that academic growth may best be understood as a relational process (Christian, Bachman, & Morrison, 2001; Morrison & Connor, 2002). For example, academic growth is predicted not simply by the amount or type of instruction the child is receiving, but by how engaged the child is in the learning process, which has to do with relational aspects between the teacher and child. The suggestion that relational aspects of the school environment have a more pronounced effect on learning than do attributes of individual children and teachers suggests that it may be *relationship* quality, rather than individual characteristics of Hispanic ELL students or their teachers, that predisposes ELL students to risk or success in school.

The Importance of Teacher-Child Relationships in Predicting School Outcomes

Although little research has examined the importance of teacher-child relationships in ELL populations, the impact of teacher-child relationship quality on child development in the general population has been amply demonstrated. In terms of academic outcomes, children who experience better relationships with their teachers have higher academic achievement (Hamre & Pianta, 2001; Ladd, Birch, & Buhs, 1999; Pianta, Steinberg, & Rollins, 1995; van Ijzendoorn, Sagi, & Lambermon, 1992), better

vocabulary and decoding skills (Connor, Son, Hindman, & Morrison, 2005), greater classroom participation (Ladd, Birch, & Buhs, 1999), and are more engaged in classroom activities (Hughes & Kwok, 2007; Ridley, McWilliam, & Oates, 2000). Not only does relationship quality with kindergarten teachers predict academic success in kindergarten, but these early relationships appear to have a lasting association with child achievement through eighth grade (Hamre & Pianta, 2001). Other studies have found that teacher-perceptions of the quality of relationships with children affect teacher perceptions of students' academic ability (Hughes, Gleason, & Zhang, 2005). If these findings hold true for ELL students, than promoting good relationships between ELL students and their teachers may be an important component in reducing the academic risk associated with ELL status, especially in terms of language development.

The quality of relationships between teachers and students is also related to the development of positive social skills in the general population, which may be particularly important for ELL students. For example, higher quality relationships with early teachers relate to greater social competence and better relationships with peers (Birch & Ladd, 1998; Pianta, Steinberg, & Rollins, 1995) and future teachers (Ladd & Burgess, 1999; Pianta, & Stuhlman, 2004a; Pianta, & Stuhlman, 2004b), as well as fewer externalizing behavior problems (Hamre & Pianta, 2001; Howes, Hamilton, & Matheson, 1994; Hughes, Cavell, & Jackson, 1999; Meehan, Hughes, & Cavell, 2003; Silver, Measelle, Armstrong, & Essex, 2005). Therefore, it is likely that ELL students who have closer relationships with early teachers will experience greater gains in social skills and fewer behavior problems. Developing good social skills may be particularly important for ELL students, as certain social skills have been linked to successful language development

(Valdes, 1996). For example, the ability to join groups of children, using what limited language ability they have in order to encourage others to communicate, and seeking out friends that can help them to learn English are all social factors that help ELL students to acquire language skills (see Espinosa, 2007). Characteristics such as social confidence, outgoing personality traits, and willingness to take risks are specific social skills that may relate to language acquisition in preschool (Tabors, 1997). Given that high quality relationships are linked with increased social skills, and increased social skills are potentially related to better language development in ELL students, promoting good relationships between ELL students and their teachers may be particularly influential on ELL students' school success.

Another finding related to peer relationships that may be especially important for ELL students is the association between teacher-child relationships and peer perceptions of students. Children's relationships and perceptions of each other are tied to the quality of relationships between teachers and students (White & Kistner, 1992). In younger children, teacher's perceptions and feedback regarding a child also appear to influence how peers perceive that child, such that if a teacher characterizes a child's behavior as more positive, peers tend to view that child more positively, but if the teacher perceives child behavior as negative, peers also tend to perceive that child more negatively (White & Kistner, 1992). Thus, it is possible that teachers can positively change peer perceptions of rejected children by pointing out that child's positive behaviors to the class (Hughs, Cavall, & Willson, 2001; White & Kistner, 1992). This is important when looking at ELL children because research suggests that ELL students are less likely to be socially desired (and in some cases are even disliked) by peers than are children with well-developed

English language skills (Gertner, Rice, & Hadley, 1994). One way to improve this may be to promote good relationships between teachers and ELL children, which may in turn encourage classmates to socially accept non-English speaking children.

Summary

Based on the above research, it is clear that teacher-child relationships likely play an important role in predicting the success of ELL students in preschool. Due to the lack of research specifically focused on the role of teacher-child relationships in Hispanic ELL populations, a primary aim of this study is to examine whether high quality relationships with preschool students predict both social and academic outcomes in Hispanic ELL students.

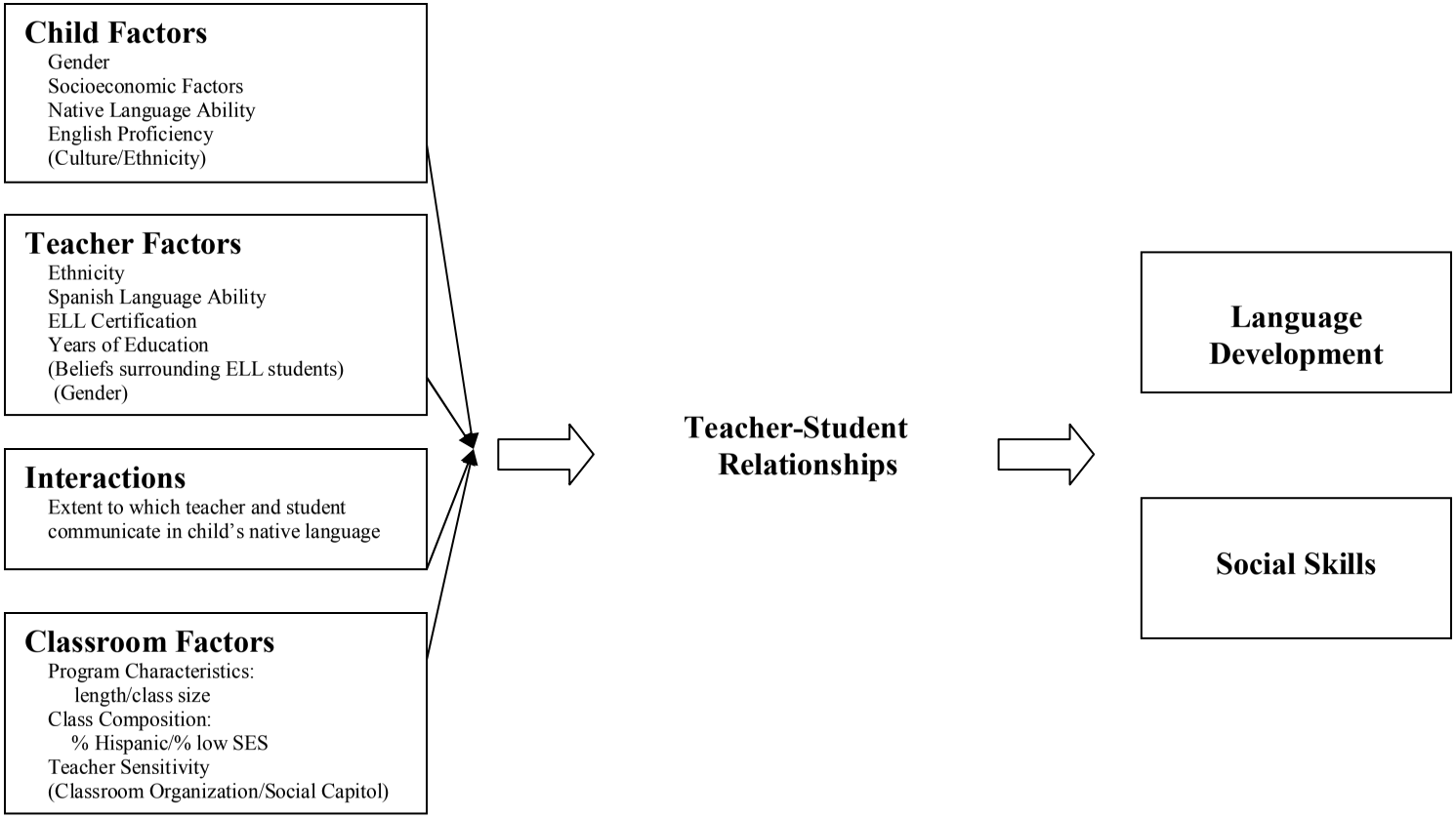
Predictors of Relational Experiences Between ELL Students and their Teachers

Assuming that teacher-child relationship quality relates to Hispanic ELL students' academic and social gains in preschool, it is important to know what contributes to high-quality teacher-student relationships in this population. If teacher-child relationship quality is important, we must also understand what can be done to promote high quality relationships in this group of students. The following section argues that the relational experiences between preschool ELL students and their teachers are likely influenced by characteristics of the children, characteristics of the teachers, characteristics of interactions, and characteristics of the classroom environment. This section focuses on (a) the theoretical basis for suggesting that relationship quality is multi-determined, and (b) what specific child, teacher, and classroom characteristics are likely to influence relationships for Hispanic ELL students.

Theory Suggesting that Relationship Quality is Multi-Determined

Pianta's (1999) model of teacher-child relationships conceptualizes relationships as involving individual characteristics of teachers and children, teacher and child representations of the relationship, the process of information exchange between teachers and children, and external influences on the relationship. Based on this model, we expect that relationship quality between teachers and children will be influenced by child characteristics (e.g., temperament, gender, genetics), teacher characteristics (e.g., past relationship history, beliefs about teaching), properties of the interaction itself (e.g., the process of communication), and properties of the setting (e.g., school climate, community, culture, standards of learning). Although many of the same factors likely contribute to relationships between Hispanic ELL students and their teachers, we also expect that the relationships that ELL students form with teachers are influenced by factors unique to this population (see Figure 1 below). Applied to ELL students, this theory suggests that relationships with teachers will be influenced by child factors (e.g., country of origin, English proficiency, child's level of acculturation), teacher factors (e.g., teacher's past experience with ELL students, teacher's proficiency in the child's native language, cultural sensitivity), characteristics of the interaction (e.g., the ability of the teacher and child to communicate), and properties of the school and classroom climate (e.g., percentage of ELL children in the class, cultural climate of the school, classroom organization). Currently, there is a lack of research aimed at identifying specific child-, teacher-, and classroom-level predictors of ELL student-teacher relationship quality.

FIGURE 1*: Theoretical Model



* Predictors in parentheses are included in the theoretical model but cannot be tested empirically with this dataset.

Child Factors Influencing Teacher-Child Relationship Quality

Gender. Research on teacher-child relationships consistently finds that girls have more closeness and less conflict with their teachers than boys, and this is true when relationship quality is rated by child-report (Bracken & Crain, 1994; Ryan, Stiller, & Lynch, 1994), teacher-report (Hamre & Pianta, 2001; Kesner, 2000; Silver, Measelle, Armstrong, & Essex, 2005), and observations by trained observers (Ladd, Birch, & Behs, 1999). It is uncertain whether this finding will hold true for Hispanic ELL populations, and it is important to consider the potential impact of cultural differences. For example, one proposed explanation for greater levels of conflict in boys' relationships with teachers is the finding that boys tend to engage in more conflict producing behaviors, such as aggression and violence, which in turn relate to poorer relationships with teachers (Ladd, Birch, & Behs, 1999). However, Hispanic cultural values, such as the idea of respeto (respect), may influence how boys behave in school, and it is possible that gender differences in teacher-child relationship quality will not be as strong in this population.

Ethnicity. Within the population of Hispanic ELL students, there is a great deal of ethnic/racial diversity (Espinosa, 2007). Some evidence from the general population suggests differences in teacher ratings of children based on child ethnicity, particularly between ratings of Caucasian and African American students (Entwisle & Alexander 1988; Hall & Bracken, 1996; Jerome, Hamre, Pianta, in press; Ladd, Birch, & Behs, 1999). Most available research suggests that teachers tend to rate White and Hispanic students similarly on teacher-reports of conflict and closeness, especially when child behavior problems are controlled for (Hamre, Pianta, Downer, & Mashburn, in press; Mashburn, Hamre, Downer, & Pianta, 2006). Possible differences between subgroups of

Hispanic ELL children (e.g., Latin American, Puerto Rican, Spanish) have not been explored. Cultural differences between these ethnic subgroups may impact how children relate to adults, children's views of their role in the classroom, and children's responses to structured classroom environments, all of which have the potential to impact the teacher-child relationship. However, few samples include high numbers of students from specific Hispanic subgroups, making it difficult to test for differences between these groups.

Socioeconomic status. As discussed above, Hispanic ELL students are likely to have lower household income and lower levels of maternal education than their peers (Espinoza et al., 2006; Ramirez and de la Cruz, 2003), and it is likely that these factors are related to the quality of teacher-child relationships. For example, children whose families have fewer socioeconomic means are more likely to be placed in classrooms that are less positive and more teacher-directed than children with greater levels of SES and maternal education (Pianta, La Paro, Cox, & Bradley, 2002). Lower quality classrooms may in turn predict lower quality relationships between teachers and children. In fact, children coming from less advantaged families are at greater risk of poor relationships with both parents and teachers (Pianta, & Stuhlman, 2004a). Therefore, it is likely that Hispanic ELL students with lower SES (i.e., household income; maternal education) will experience poorer relationships with their teachers.

Native language ability. There is some evidence that Hispanic ELL students, especially those from low SES households, not only have poorer English language skills than their peers, but also tend to have less well-developed language skills in their native language (Espinosa, 2007; Head Start Bureau, 2004b). Children who have poorer

language skills in their native language might take longer than other ELL children to develop conversational English skills, and are less likely to succeed academically (Regalado, Goldenberg, & Appel, 2001). This could have important implications for the relationships these children form with teachers. In the general population, lower levels of academic achievement predict higher levels of conflict and lower levels of closeness between teachers and their students (Jerome, Hamre, & Pianta, 2007; Mantzicopoulos, 2005). Because individuals tend to invest more effort into relationships that are expected to yield the greatest return, it is possible that teachers will invest more time into relationships with ELL children who are more likely to succeed academically. Therefore, Hispanic ELL students who enter preschool with higher scores on Spanish achievement tests may experience higher quality relationships with their teachers.

English language proficiency. Communication is a central component of relationships, and the ability of ELL students to communicate with their teachers is likely an important factor in determining the quality of the teacher-student relationship. Although ELL students in general will not be able to communicate fluently in English with teachers, having the ability to speak some English in class may improve the quality of the teacher-child relationship.

Acculturation. The level of comfort ELL students feel in the classroom and their ability to successfully navigate the classroom culture is likely to impact their functioning in that environment, including their relationships with teachers. One study found that the level of acculturation in ELL students relates to academic gains (Riggs & Greenberg, 2004), with more acculturated students experiencing greater gains. It is possible that a

child's level of acculturation may also be linked to the quality of relationships that that child forms with teachers.

Teacher Factors Influencing Teacher-Child Relationship Quality

Teacher gender. Although little research in the general population has explored differences in student-teacher relationships with male versus female teachers, research focused on ELL students in middle school suggests that female teachers may hold more positive attitudes toward ELL students than do male teachers (Youngs & Youngs, 2001). It is likely that teachers who hold more positive attitudes toward students will form higher quality relationships with those students. Therefore, it is possible that in ELL populations, ELL students placed with female teachers will experience higher quality relationships than those placed with male teachers. However, due to the dearth of male preschool teachers, it is difficult to test this hypothesis among this age group.

Teacher race/ethnicity. Given the predominance of Caucasian teachers in many studies, little research has been able to examine the effect of teacher race on teacher-child relationship quality. There is some suggestion that African-American teachers have more positive relationships with all children than do Caucasian teachers, and that this is particularly true for African American children (Saft & Pianta, 2001). There is also some suggestion that ethnic match between teachers and children may be important in fostering good teacher-child relationships (Saft & Pianta, 2001). In terms of Hispanic ELL students, it is possible that having a Hispanic teacher will increase the quality of the teacher-child relationship. Hispanic teachers (even those that do not speak Spanish) may be more likely to connect to their Hispanic ELL students.

Teacher's ability to speak Spanish. Garcia et al., (2005) suggest that one of the most pressing questions to address in terms of identifying necessary components of preschool programs for Hispanic ELL students is whether having a teacher who speaks Spanish is related to the teacher's ability to work effectively with students. Some theory suggests that the loss of their first language may be particularly detrimental to ELL students (e.g., see Garcia, 1991; Garcia, 1993), resulting in poorer long-term academic outcomes (Slavin and Cheung, 2005; Oller & Eilers, 2002). In this sense, having a teacher who can promote language development both in English and in the native language could be beneficial. One way in which having a bilingual teacher could impact academic outcomes for ELL students is through the effect bilingualism might have on the teacher-student relationship. Teachers who can converse with students in both English and in their native language may form higher quality relationships with students, which in turn predict better academic outcomes.

Teacher self-efficacy. The extent to which a teacher believes that he or she can have an impact on ELL students in the classroom might contribute to the quality of ELL student-teacher relationships in that classroom. For example, teachers who believe they are able to influence children are better able to enhance student engagement and achievement (Midgley, Feldlaufer, & Eccles, 1989), and report closer relationships with students (Mashburn, Hamre, Downer, & Pianta, 2006). Teachers who believe they can positively impact ELL students may experience greater successes and closer relationships with these students.

Teacher expectations. Teachers who hold higher expectations for students tend to have students who attain better academic and social outcomes (Eccles, 1983; 1993;

Rutter, 1987; Roeser, Eccles, & Sameroff, 1998; Weinstein, 1989), which in turn may relate to better teacher-child relationships (e.g., Mantzicopoulos, 2005). In addition, the effects of teacher expectations appear to be strongest for minority and low SES children (see Hughes, Gleason & Zhang, 2005), which includes a high percentage of ELL students. Unfortunately, studies have found that teachers tend to expect less from children who do not use standard English (Byrnes, Kiger, & Manning, 1997; Williams & Naremore, 1974), which may predispose these children to fewer academic gains as well as poorer quality relationships with teachers.

Teacher experience and credentials. The impact of teacher experience and educational history may be greater in ELL populations than in the general population. Although teacher experience and educational history show minimal effects on relationship quality with students in the general population (Stuhlman & Pianta, 2002), research conducted specifically on ELL students suggests that formal training in ELL and prior contact with ELL children are related to a more positive attitude toward teaching language-diverse children (Byrnes, Kiger, & Manning, 1997; Youngs & Youngs, 2001). In addition, Youngs and Youngs (2001) found some indication that the content of teacher's coursework and teachers' exposure to different cultures (e.g., living outside the US) are related to more positive attitudes toward working with ELL students. Avery and Walker (1993) propose that the subject in which pre-service teachers major may affect their views on ethnic and gender differences. Therefore, although teacher-credentials and experience do not demonstrate a large association with relationships in the general population, a teacher's experience specifically with ELL students and their cultural awareness in general, may impact their relationships with ELL students.

Characteristics of Interactions that Influence Teacher-Child Relationship Quality

Percent of interactions in Spanish. As discussed above, the child's ability to speak English and the teacher's ability to speak Spanish are both likely to influence the teacher-child relationship. Also important is the *extent* to which children and teachers communicate in Spanish in the classroom. Research suggests that being placed in a bilingual environment may be important for ELL students. Hispanic and Latino students enrolled in bilingual classrooms display higher literacy skills than those students enrolled in non-bilingual classrooms (Willson & Hughes, 2005), and students who speak primarily Spanish perform better in Spanish-emphasis programs than in English-immersion programs (Thomas & Collier, 2002). In addition, research suggests that a higher proportion of interactions in Spanish between an ELL student and their teacher is associated with better social outcomes and closer relationships (Chang et al., in press). Therefore, it is important to examine how much teachers and children communicate in Spanish and whether or not that influences the quality of their relationship.

Characteristics of the Classroom Influencing Teacher-Child Relationship Quality

Preschool program characteristics. Program characteristics such as the length of the school day and total class size may influence relationship quality. The length of the school day has been found to have an effect on pre-kindergarteners' relationship quality, with children in schools with longer days experiencing more conflict with teachers then children in shorter programs (Mashburn, Hamre, Downer, & Pianta, 2006). It is important to know whether Hispanic ELL students in full versus half day programs are at greater risk for poor teacher-child relationships. In terms of total class size, low child to teacher ratios in the classroom are related to more positive and more frequent interactions with

teachers, and to higher levels of observed teacher sensitivity (Pianta et. al, 2002; NICHD ECCRN, 2004). Especially for children who have high academic needs, such as ELL students, having smaller classes may be particularly important.

Classroom composition. Literature on ELL students suggests that one problem faced by these students is the difference between their early home environment and their classroom environment. Espinosa (2007) discusses how the mismatch between home and school environments, and the loss of self that can occur when children are forced to give up their language and culture, can provoke anxiety and discomfort in the child. These negative feelings, in turn, may interfere with the ability to develop language skills (Krashen & Terrell, 1983). It is quite possible that these negative feelings also impact children's abilities to develop good relationships with peers and teachers in the classroom. Children develop certain social and cognitive skills through their early interactions, and the interactions ELL students have in their homes may be quite different than the interactions they experience in school (see Diaz & Klinger, 1991; Espinoza, 2007). Children who are placed into classrooms that have a vastly different social culture than they experienced in their home may have difficulty with social interactions within this new environment. Having other students in the class that are culturally similar to the child (e.g., that speak the same language; that are of similar ethnicity; that have similar English language ability) may increase the cultural similarity of the classroom environment and the home environment, thereby increasing the comfort level of ELL students and reducing their anxiety. Students who are more comfortable and confident in the classroom may be more likely to engage in behaviors that foster high-quality interactions with teachers (e.g., seeking out teacher support, actively participating in the

classroom) and less likely to engage in behaviors that foster low-quality interactions (e.g., displaying frustration, misbehaving, not completing activities).

On the other hand, having higher percentages of Hispanic/Latino students, as well as students with lower SES (as is associated with Hispanic ELL status), could actually be associated with poorer quality relationships. For example, classrooms with higher percentages of African American students and those with a higher percentage of children receiving free or reduced lunch, had teachers who were less sensitive and who provided lower quality instruction (NICHD ECCRN, 2005). These classrooms may be more difficult to manage due to higher percentages of high-demand children (Pianta, Hamre, & Stuhlman, 2002), which in turn may create a greater sense of burden on teachers (Rimm-Kauffman, Pianta, Cox, & Early, 2000). Having a difficult classroom may decrease the quality of care and instruction that the teacher is able to provide. This could be especially relevant to classrooms with high proportions of ELL students, as these students are more likely to come from lower SES backgrounds and can be more difficult to teach for some teachers. While ELL students may feel more comfortable in classrooms with higher percentages of ethnically and linguistically similar students, the teachers in these classrooms may experience greater difficulty and subsequently may form poorer relationships with their students. Therefore, it is important to examine whether having higher or lower percentages of Hispanic students in the same classroom would improve or decrease the quality of relationships between the teacher and his or her ELL students.

Teacher sensitivity. The presence of a teacher who is sensitive to a child's needs, who makes children feel like valued members of the classroom, and who children feel comfortable approaching for help may positively influence ELL student's academic and

social success in the classroom. Teachers who have these skills may be better able to help ELL children adjust to the classroom and experience the classroom as a positive and supportive environment. These teachers may also tend to be more aware and respectful of cultural and language differences between students. A more sensitive teacher will create a higher quality emotional climate in the classroom, and is likely to promote better quality relationships between ELL students and both their teachers and peers.

Classroom organization. Christian and Bloome (2004) discuss the organization of classrooms in relation to ELL students, and argue that classrooms are often arranged in such a way that reading and writing ability afford children symbolic capitol (i.e., a type of social status that gains children access to educational experiences). These authors argue that ELL students are continually disadvantaged by classrooms that emphasize academic ability and do not allow lower achieving students the opportunity to gain the symbolic capital that would increase their exposure to academic resources and gains. This suggests that teachers who reward effort and personal improvement, rather than ability, may foster a better social climate, especially for ELL students. Students who experience a more positive school climate tend to have more positive relationships (Battistich, et al., 1997).

Summary

There is substantial evidence that the relationships between Hispanic ELL students and their teachers are impacted by a number of factors, including characteristics of ELL children, their teachers, the interactions between teachers and children, and characteristics of the classrooms in general. A number of specific factors, based on research on ELL populations as well as research on teacher-child relationships in the general population, were proposed as factors that likely influence relationship quality

between ELL students and their teachers. Especially if teacher-child relationship quality if found to predict academic and social success in ELL populations, it is important to understand what child, teacher, and classroom characteristics influence the quality of these relationships.

Although a comprehensive theoretical model of predictors of Hispanic ELL student-teacher relationships is presented in Figure 1, not all of the proposed predictors can be sufficiently tested with the data available for this study. For example, although acculturation, classroom organization, and teacher expectations are likely important factors in predicting the quality of relationships formed between ELL students and their teachers, the present study does not have an adequate measure of these variables. The relative lack of male teachers prevented the examination of teacher-gender, and small memberships and lack of specificity of subgroups of Hispanic ethnicity prevented examination of child-race/ethnicity. Years of teaching experience were not used due to lack of information as to whether this experience specifically entailed working with Hispanic or ELL students. Similarly, although measures of teacher self-efficacy exist in this dataset, they are not specific to efficacy with Hispanic ELL students, and so this variable was also excluded. All other hypothesized predictors that can be tested with the present dataset are specified below.

Summary of Literature Review, Research Questions, and Hypotheses

There is a great need to identify the factors that contribute to failure or success in ELL student populations, and especially to clarify the nature of preschool ELL student's relational experiences. Hispanic ELL students are one of the fastest growing groups of preschool students in the U.S. Of great concern is the finding that Hispanic ELL students

are also at an increased risk of a number of deleterious school outcomes, beyond what can be accounted for by disproportionately low levels of SES. Although high quality preschool programs can help to lessen the risk of poor school outcomes, less is known about what specific components of preschool programs will reduce risk in Hispanic ELL populations. Based on a considerable amount of theoretical and empirical work examining the importance of relationships as a component of school success, it is proposed that examining the relationships that ELL students form with their teachers will provide valuable information as to how to promote success in this population.

This study will examine ELL student-teacher relationships in a large sample of preschool classrooms across the country. The major research questions include: 1) what types of relational experiences do Hispanic ELL students have in preschool, and do these experiences differ from those of their non-ELL peers, 2) are these relational experiences a function of child characteristics, teacher characteristics, classroom characteristics, or a combination of all three, and 3) to what extent do these relational experiences predict school competence for ELL students, and 4) what variables moderate the relationship between relationship quality and child outcomes? Based on the research discussed above, the following hypotheses are made:

1. In answer to the first question, it is hypothesized that the average Hispanic ELL student will experience less closeness with their teachers than will their peers. Based on past research that suggests less externalizing behavior in Hispanic populations (Crosnoe & Lopez-Gonzalez, 2005), and because of the high correlation between externalizing behavior and conflict with teachers, it is expected that Hispanic ELL students on average will have equal or less conflict in

their relationships with teachers than will their peers. In addition, it is expected that the quality of observed interactions with teachers will be lower for Hispanic ELL students than for their peers (e.g., less time spent in Elaborated and Simple interactions).

2. In answer to the second question, it is hypothesized that the quality of these relationships will be predicted by child, teacher, and classroom variables. Specifically, ELL students who are female, have higher maternal education, greater proficiency in their native language, and better English skills will likely have better relationships with teachers. In addition, ELL children with teachers who are of Hispanic ethnicity, who have specific credentials related to ELL students, and who speak Spanish, will experience higher quality relationships. ELL children who experience a higher percentage of Spanish interactions with their teachers are likely to have better overall relationship quality. Finally, ELL children in classrooms with higher percentages of Hispanic/Latino students, lower percentages of low-SES students, higher ratings of teacher sensitivity, fewer total students, and shorter days are likely to have higher quality relationships and interactions.
3. In answer to the third question, it is believed that the quality of relationships that ELL students form with their teachers will predict both social and academic gains over the course of preschool and into kindergarten, with children who have higher quality relationships with their teachers experiencing greater gains. In addition, children who spend more time engaged in higher quality interactions (i.e. Simple and Elaborated interactions) with teachers are likely to experience greater

academic gains and more positive social gains. Because Routine and Minimal interactions do not encourage much reciprocal interaction, these types of interactions are not hypothesized to relate to more positive outcomes.

4. In answer to the fourth question, it is hypothesized that the relationship between conflict and closeness and student-outcomes will be moderated by the child's English language ability, whether or not the teacher is certified in ELL/LEP, and by the amount of Spanish interactions between the child and teacher.

CHAPTER 2

METHODOLOGY

Overview

This study is a secondary analysis of data from the National Center for Early Development and Learning (NCEDL) Multi-State Study of Pre-Kindergarten, and from the State-Wide Early Education Programs Study (SWEEP). Both the NCEDL and SWEEP studies utilized the same research team, training procedures, and measurements. The SWEEP study was designed as a supplement to the original NCEDL study. The NCEDL and SWEEP studies provide a large body of data from a longitudinal study of state-funded preschool classrooms across the country. The present study will use Hierarchical Linear Modeling to assess the association between Hispanic ELL students' relationships with teachers and their social and academic outcomes in school, and to identify what child-, teacher-, and classroom-level factors predict the quality of ELL student-teacher relationships.

Selection Procedure

Children included in this study took part in the NCEDL and SWEEP studies. These combined studies took place in eleven states[1] representing a diverse sample of pre-kindergarten programs from diverse geographic regions (see Early et al., 2006). When the study began, 78% of all U.S. children attending state-funded pre-k programs attended

[1] The six states in the NCEDL study were California, Georgia, Illinois, Kentucky, New York and Ohio. The five SWEEP states were New Jersey, Massachusetts, Texas, Wisconsin, and Washington.

school in these eleven states, and 83% of state pre-k dollars were spent in these states (Barnett et al., 2004).

NCEDL and SWEEP. Data collection for the NCEDL Multi-State Study of Pre-Kindergarten took place in six states during the 2001-2002 school year. From a list of all state-funded pre-k programs, a stratified random sample of 40 pre-k sites was selected. A total of 238 sites participated in the fall, with an additional two sites joining in the spring. Data for the SWEEP Study were collected in five states during the 2003-2004 school year. From a list of all state-funded pre-k sites in each state, 100 sites were randomly selected. A total of 436 sites participated in the study during the 2003-2004 school year.

Selection of classrooms nested within sites. In both studies, one classroom was randomly selected from each site for participation in the study (n = 701). The lead teacher in each classroom was asked to complete questionnaires about their classroom, background, and perceptions of students. Observational measures, completed by trained observers, were completed for each classroom. In the both the NCEDL and SWEEP studies 94% of the teachers agreed to participate.

Selection of children within classrooms. Parents of all children in the classroom were asked to participate. For the NCEDL study, 61% of the parents agreed to participate, and 55% of the parents in the SWEEP study agreed. Of all children whose parents consented to participation, 4 children were randomly selected from each classroom (2 boys and 2 girls). Classroom observations were conducted when all 4 children were present. A total of 2,966 children participated in the combined studies.

Participants and Setting

Two study samples were drawn from the original NCEDL/Sweep sample for use in this study. The larger comparison sample consisted of all children who were identified as Hispanic ELL, Hispanic/non-ELL, and non-Hispanic/non-ELL (N=2,408). This sample was used as a comparison sample for question # 1 as well as for demographic information. The second, smaller sample was drawn from this comparison sample, and included only Hispanic ELL children (N=351). Due to the nature of the analyses used in this study (described below), all cases that were missing classroom-level data were deleted from both samples. When all cases missing teacher/classroom level data were deleted from the data-file, the total comparison sample decreased from 2,664 to 2,408. The sample of most interest to this study, Hispanic ELL students, decreased only from 391 to 351.

Children in the Hispanic-ELL sample constitute a sub-sample of children who were identified as English Language Learners based on two criteria; all identified children (a) did not pass the English proficiency screening (i.e., the Pre-LAS; Duncan & DeAvilla, 1998), and (b) had Spanish identified as the primary language spoken in the home. The final sample consisted of 351 students, was 46.7% female, 54.7% Mexican American, and 42.2% Latino, with a mean age of 4.6 years, and a mean maternal education of 11 years. Ninety-eight percent of the children had female teachers, 54.1% had teachers who were Hispanic/Latina, 41.3% of children had teachers who were White, and 5.7% of the children had African American teachers. The average teacher in the sample had 16 years of education, and 80% spoke some Spanish. Twenty-percent of the teachers held a bachelors degree and a certification in LEP/ELL. Classrooms had an average of 18 students, with 81% of those children having an income level that was 150%

or more below the federal poverty line. The average school day was 4.5 hours. Seventy-four percent of the children were in classrooms located in public schools. In comparison to the overall sample, Hispanic ELL students were more likely to have a mother with fewer years of education, $F(1, 2361) = 231.8$, $p < .001$, to have lower family income, $F(1, 2262) = 154.3$, $p < .001$, and to have teachers with fewer years of experience, $F(1,2377) = 13.4$, $p < .001$. In addition, children in this sample were more likely to be in classrooms that had a slightly shorter day, $F (1,2406) = 7.2$, $p < .01$, classrooms with lower average years of maternal education, $F (1,2406) = 181.9$, $p <.001$, a higher average proportion of Latino children, $F (1,2406) = 1694.4$, $p < .001$, larger overall numbers of students, $F (1, 2406) = 6.8$, $p < .01$, and more children at or below 150% poverty, $F (1,2406) = 300.7$, $p < .001$.

Overview of Data Collection

Direct assessments of children's language and literacy skills and observations of the classroom were made in the fall and spring of the pre-K year. All data collectors were post-BA full-time trained employees, and different individuals conducted data collection and assessment for the same group of children. Teachers completed questionnaires on classroom demographics, their own educational backgrounds, and information on the study children. Parents completed questionnaires on study children and family variables. Descriptive statistics are presented in Tables 1 and 2 below.

Table 1: Descriptive Statistics for Predictor Variables for Hispanic-ELL Sub-Sample and Overall Sample (values are not imputed)

Variable	Percent/Mean(SD)	
	Hispanic-ELL Sample	Overall Sample
Child		
Gender		
Female	46.7%	51.0%
Maternal Education	10.92 (2.37)	12.64 (2.39)
PreLAS Score	9.80 (10.49)	N/A
TVIP Fall Score	14.12 (9.39)	N/A
Teacher		
Ethnicity		
Latina/Hispanic	44.8%	16.1%
Education/Certification		
BA + ELL Certificate	20.1%	9.3%
Teacher Speaks Spanish (yes)	79.9%	33.8%
Education (years)	16.01 (1.77)	16 (1.77)
Interaction		
Proportion Time Interactions in Spanish	0.17 (0.19)	N/A
Classroom		
Program Length (Hours Per Day)	4.45 (2.31)	4.87 (2.38)
Average Total Students in Classrooms	17.79 (3.95)	17.61 (4.39)
Proportion Class 150% Below Poverty Line	0.81 (0.20)	0.58 (0.32)
Proportion of Class Latino	0.70 (0.30)	0.26 (0.35)
CLASS Teacher Sensitivity	4.65 (0.89)	4.69 (0.95)

Table 2: Descriptive Statistics for Relationship and Academic Outcome Variables (values are not imputed)

Variable	Mean(SD)	
	Hispanic-ELL Sample	Overall Sample
Relationships		
STRS Closeness	4.27 (0.63)	4.38 (0.63)
STRS Conflict	1.46 (0.58)	1.59 (0.71)
Routine Interactions	0.01 (0.02)	0.01 (0.02)
Minimal Interactions	0.03 (0.04)	0.03 (0.03)
Simple Interactions	0.05 (0.05)	0.05 (0.04)
Elaborated Interactions	0.04 (0.040	0.04 (0.04)
School Outcomes		
Academic Gains (Pre-k)		
Gains Letter Naming	4.68 (6.89)	4.34 (6.85)
Gains TVIP Raw Score	7.98 (8.77)	N/A
Gains PreLAS Score	8.16 (7.74)	N/A
Social Competence in Kindergarten		
Conduct Problems Subscale	1.53 (0.79)	1.64 (0.84)
Peer Social Skills Subscale	3.87 (0.87)	3.89 (0.86)

Measures

Teacher and Parent Reports

Child demographics. Child demographics, obtained from parent and teacher reports, include child gender, race/ethnicity, age, maternal education, and poverty.

Teacher demographics. Teachers reported on their gender, race/ethnicity, and educational history and credentials. Teachers also reported on whether or not they spoke Spanish in the classroom.

Classroom demographics. Teachers reported on the overall composition and characteristics of the classroom, including total number of students, the length in hours of the school day, the percent of students in the classroom below the poverty line, and the percentage of children in each ethnic/racial category.

Student-Teacher Relationship Scale. Teachers completed the *Student Teacher Relationship Scale* (STRS; Pianta, 2001) in the spring. The STRS is a self-report measure of teacher perceived relationships with individual students. The scale includes two subscales that assess teacher perceived conflict and closeness with each student (Pianta, 2001). Conflict items are designed to attain information about perceived negativity within the relationship (e.g. "This child remains angry or is resistant after being disciplined," "This child is sneaky or manipulative with me," and "This child easily becomes angry with me"), while Closeness items ascertain the extent to which the relationship is characterized as warm, affectionate, and involving open communication (e.g. "I share an affectionate, warm relationship with this child," "If upset, this child will seek comfort from me," and "This child spontaneously shares information about himself/herself"). Items are rated on a Likert-type scale with a range of five possible responses. The conflict

subscale is comprised of seven items, and the closeness subscale is comprised of eight items. In order to make conflict and closeness scores comparable in this study, each child's total conflict and closeness scores were divided by the total number of items measuring that construct, such that conflict and closeness scores indicate the average score per item. In terms of reliability, statistically significant test-retest correlations over a four-week period, and high internal consistency for both conflict and closeness subscales has been established (Pianta, 2001). The STRS has also demonstrated predictive and concurrent validity, and is related to current and future academic skills (Hamre & Pianta, 2001), behavioral adjustment (Birch & Ladd, 1998), risk of retention (Pianta, Steinberg, & Rollins, 1995), disciplinary infractions (Hamre & Pianta, 2001), and peer relations (Birch & Ladd, 1998).

Social Skills and Behavior Problems scale (Hightower et al., 1986). The Social Skills and Behavior Problems scale (Hightower et al., 1986) was used to assess teachers' perceptions of children's social skills. Pre-kindergarten teachers rated their perceptions of children's social skills in both the fall and spring. In addition, study children's kindergarten teachers completed this rating scale in the fall and spring of children's kindergarten year. Teachers rated children on 20 Social Competence and 18 Behavior Problem items, using a five-point scale (1 = not at all, 3 = moderately well, and 5 = very well). The measure is broken down into seven subscales, which include Assertiveness, Peer Social Skills, Task Orientation, Frustration Tolerance, Conduct Problems, Internalizing Problems, and Learning Problems. For the purposes of this study, scores from two of these subscales, Peer Social Skills (e.g., "Has many friends," "Well liked by classmates") and Conduct Problems (e.g., "Overly aggressive," "Disruptive in class")

will be used as an indication of social competence and behavioral problems as observed upon entry to kindergarten. The Peer Social Skills subscale (alpha for overall sample = .93) is the average of five items and the Conduct Problems subscale (alpha = .91) is the average of six items. Teachers rated all children, regardless of children's language, and teachers were asked to rate children's language skills in their language of choice (either Spanish or English).

Observational Measures

Emerging Academics Snapshot. The *Emerging Academics Snapshot* (Ritchie, Howes, Kraft-Sayre, & Weiser, 2001; Snapshot) is an observational measure of classroom quality. In both the NCEDL and SWEEP studies, the observer coded classrooms either for the full day (for half-day programs) or until naptime (for full-day programs). The raters observed the child for 20 seconds, and then coded for 40 seconds. Observers cycled through study children (coding each successively) for a 20 minute period. After 20 minutes the observer took a five minute break and began another 20 minute coding cycle. The Snapshot is comprised of a total of 28 items that are marked as present or not-present, and these items are divided into three sections, including the child's activity setting, the child's engagement with activities, and adult-child interactions. For the purposes of this study, the four adult-child interaction variables will be used as an indicator of the quantity and quality of interactions with each child. The four adult-child interaction variables include *Routine* interactions, *Minimal* interactions, *Simple* interactions, and *Elaborated* interactions. Routine teacher-child interactions included non-verbal interactions where the teacher acted out typical classroom procedures (e.g., opening a milk carton, passing out materials) with the child. Because

this type of interaction was seen infrequently, Kappa statistics could not be computed. Minimal interactions occurred when the teacher gave verbal directions or replies to the child's request for help, providing a verbalization of only a few words (e.g., "don't do that," "you're right," "yes, he is") that did not encourage a response. Minimal interaction was also coded for certain nonverbal interactions (e.g., nudging a child in order to get them to do something; tying their shoes). The average Kappa with the expert coders for the Minimal interaction code was .62 (SD = .14). Simple interactions occurred when the teacher responded to children or asked children questions using short sentences (e.g., "you are doing such a good job," "you should not be doing that"). Whereas Minimal interactions do not encourage a response from students, Simple interactions might. The average Kappa with the expert coder for Simple interactions was .69 (SD = .15). Finally, Elaborated interactions occurred when the teacher and student engaged in reciprocal conversation that indicated the teacher was interested in what the student was saying or validated the student's feelings, when the teacher and student engaged in physical contact beyond an incidental nudge (e.g., high fives, hugs, yanking the child, etc.), when the teacher asked questions that allowed the student to express ideas/interests, when the teacher and child played interactively, or suggested new ideas or materials to facilitate a child's interests. The average Kappa for Elaborated was .77 (SD = .11).

In addition to these four main codes for adult-child interactions, a separate code was marked as present if the interaction occurred in a second-language. The *Second-Language* code obtained from the *Snapshot* will be used to determine the percent of time the teacher conversed with study children in Spanish or in English. When compared to an expert coder, raters' average kappa was .77 (*SD* = .17).

Classroom Assessment Scoring System. The *Classroom Assessment Scoring System* (CLASS; La Paro, Pianta, & Stuhlman, 2004; La Paro, Pianta, Hamre, & Stuhlman, 2002) is an observational measure that rates classroom quality along nine dimensions. Each dimension is rated on a scale of 1 to 7, with 1 indicating lower quality and 7 indicating the highest quality. Classrooms were observed by trained observers for two days in the fall and two days in the spring. Observers completed CLASS ratings for 30 minute cycles throughout the day (until naptime in full-day programs), and CLASS scores were averaged across data collection periods. The CLASS demonstrates good stability across time ($.72 \leq r \leq .87$). Factor analyses of the CLASS yield two factors: *Instructional Climate* and *Emotional Climate* (Clifford et al., 2005; La Paro et al., 2002). Emotional Climate includes the Positive Climate, Negative Climate (reversed), Teacher Sensitivity, Over-control (reversed), and Behavior Management dimensions (α =.86), which are combined to provide an indication of the overall emotional quality of the classroom. For the purposes of this study, the Teacher Sensitivity subscale will be used to indicate the level of awareness the teacher has of student's academic and emotional needs, how responsive the teacher is to students, and to what extent the teacher provides comfort, reassurance, and support. CLASS demonstrates good reliability and validity (see Hamre & Pianta, 2005; La Paro et al., 2004). Reliability was established by comparing ratings with ratings from experts ("gold standards") yielding a mean weighted Kappa for each subscale score of .65 (*SD* = .10).

Direct Child-Assessment Measures

The child assessment battery was administered in the fall and in the spring. This battery took approximately 45 minutes and was administered individually in a quiet

location outside of the classroom. Children who spoke a non-English language at home, according to their teacher, were given a portion of the Pre-LAS (Duncan & De Avila, 1998) in order to test for English proficiency. Children who failed the screener (scoring less than 31 out of 40 points) and who spoke Spanish in their home were given the Spanish assessment battery. All children in this sample received the Spanish battery of language tests in the fall. All data collectors who administered Spanish-assessment batteries were proficient in Spanish and were trained to administer both the Spanish and English test batteries. In order to adjust for children's academic ability upon entrance to pre-k, all academic outcomes will be judged by gains between fall and spring scores on the following measures.

Pre-LAS 2000 (Duncan & De Avila, 1998). Three subtests from the Pre-LAS (Simon Says, Art Show, and Human Body) were administered to children in order to determine whether they should be tested in English or Spanish. These subtests require the child to respond to verbally presented instructions and to verbally identify pictures. The test reportedly demonstrates good inter-rater reliability (Cronbach's alphas = .88 for Simon Says; .90 for Art Show; .86 for Human Body) and test-retest reliability (Simon Says = .89; Art Show = .94, and Human Body = .91). Children who scored 31 or above out of 40 were given the English assessment battery. Prior to each assessment, children who were previously tested in Spanish were again given the Pre-LAS in order to screen for English proficiency. Those who passed the screener were tested in English at all subsequent assessment points.

Test de Vocabulario en Imagenes Peabody. The *Test de Vocabulario en Imagenes Peabody (TVIP)* (Spanish version of the PPVT-III; Dunn & Dunn, 1997; Dunn, Lugo,

Padilla, & Dunn, 1986) was used to assess receptive vocabulary. This test requires the child to select from a group of four pictures the picture that best represents a spoken word. A standard score is computed, with a mean of 100 and standard deviation of 15. The authors of the TVIP report a split-half reliability coefficient of .94 for 4-year-old and of .93 for 5-year-olds. Cronbach's alpha estimate of internal consistency was .95. This scale has been shown to relate to other measures of academic achievement, language, and literacy (Chow & McBride-Chang, 2003; Dunn & Dunn, 1997).

Identifying Letters (NCEDL, 2001). *Identifying Letters* measures the ability to identify letters as a key indicator of emergent literacy. For this assessment children were asked to identify capitol and lowercase letters of the alphabet. All children in this study were asked to name letters in the Spanish alphabet in the fall, and those who passed the language screener in the spring were asked to name letters in English. However, a total of 26 points was possible whether or not the child named English or Spanish letters.

CHAPTER 3

RESULTS

This section will outline how each research question was addressed through statistical analysis. This study is designed to answer four main questions: 1) what types of relational experiences do Hispanic ELL students have in preschool, and do these differ from the relational experiences of non-ELL students even when controlling for other child-, teacher-, and classroom- characteristics, 2) are the relational experiences between Hispanic ELL students and their teachers a function of child characteristics, teacher characteristics, classroom characteristics, interactions, or a combination of all four, 3) to what extent do these relational experiences predict school competence for ELL students, and 4) what variables moderate the effects of teacher-student relationships on student outcomes?

Nesting

A number of strategies were employed in order to examine the degree of nesting of study children within classrooms in this sample. A descriptive analysis of the Hispanic-ELL sample data showed that, of the original 391 children in this sample (prior to deleting cases missing classroom-level data), 152 children were in classrooms with 4 study children, 90 were in classrooms with 3 study children, 88 were in classrooms with 2 study children, and 61 were the only study child in their classroom. In addition, intraclass correlations examining teacher as the random factor were high, most falling

between 0.3 and 0.4. These correlations suggest that there is variability not only between children, but also between classrooms. In order to account for both types of variability, Hierarchical Linear Modeling using HLM software was used in each of the following analyses to account for the nesting of children within classrooms.

Missing Data and Data Imputation

In order to evaluate the extent of missing data for child-level variables, a missing data analysis was run in SPSS. Results of Little's MCAR test showed that data in this sample were not missing completely at random (Chi Square = 68875.814, DF = 57917, sig = .000) suggesting that some form of data imputation at the child-level is necessary. Because of the nature of multi-level data analysis using HLM software, and due to the relatively small amount of data missing at the teacher/classroom level, data was only imputed at the child-level[*].

Multiple Imputation (MI) with SAS PROC MI was used to compute missing values for all child-level data. MI is widely regarded as an acceptable and preferable method of handling missing data (see Acock, 2005; Graham, Cumsille, & Elek-Fisk, 2003; Schafer & Graham, 2002). This method was used to compute all missing data 10 times, creating 10 separate data sets. All 10 datasets were then analyzed to obtain the most reliable results based on the average of all imputations. The decision to impute 10 datasets was based on research on MI suggesting that imputing 10 datasets is sufficient for most analyses (Acock, 2005). Current theory and research surrounding multiple

[*] It would be problematic to use imputed data at both the child- and teacher/classroom-level in HLM software due to the fact that 10 datasets are computed for each level, and the data sets are then "matched" when running HLM. However, there is no theoretical way to match child-level datasets to teacher/classroom-level datasets because the imputation process must occur separately for each level. Therefore, it was decided to impute only at the child-level and to match each of the 10 child-level datasets with a single teacher/classroom-level set that includes only cases with complete data.

imputation also suggests that imputing both predictor and outcome variables is superior to imputing only predictor variables (Acock, 2005). Therefore, in this study, all variables at the child-level were imputed. All further analyses in this study were conducted using the child-level data set with imputed values and the teacher-level dataset that was created using listwise deletion. In order to check the similarity between the imputed and non-imputed data sets, each analysis below was conducted with both the imputed and the non-imputed datasets and results were compared. Overall, the results were very similar, with the imputed datasets tending to be more conservative in most cases.

Descriptive Statistics

Means and descriptive statistics for each of the predictor and outcome variables, for both the overall sample and for the sub-sample of Hispanic-ELL students, are presented in Tables 1 and 2 (above). Prior to running analyses, correlations for predictor variables in the main sample of interest, the Hispanic ELL sample, were examined (see Table 3 below). Correlations between predictor variables ranged from .01 to .51, with most falling below .20. The highest correlation was between proportion of Latino children in the class and whether or not the teacher spoke Spanish, with classrooms with higher proportions of Latino students being more likely to have a teacher who speaks at least some Spanish ($r = .51$, $p < .001$). Correlations between predictor variables and relationship variables for the Hispanic ELL sample were also examined, and the results are presented in Table 4 (below). These correlations ranged from .01 to .38. Greater teacher-reported conflict was associated with lack of teacher-certification in ELL/LEP, the teacher's ability to speak at least some Spanish, fewer years of teacher-education, lower proportions of poor students in the classroom, larger classes, lower teacher

sensitivity, longer school days, male gender, lower native language ability, and fewer Spanish interactions (all p's < .01). Greater teacher-rated closeness was correlated with teacher ELL/LEP certification, lack of teacher ability to speak at least some Spanish, fewer years of teacher-education, larger proportions of poor students, smaller classes, higher teacher sensitivity, female gender, greater native language ability, greater English language ability, and more interactions in Spanish (all p's < .05). Correlations between relationship variables and gain scores are reported in Table 5 (below). Conflict and Closeness were related (in expected directions) to all computed gain scores (all p's < .05), with the exception of a non-significant relationship between closeness and gains on the English language screener.

Table 3: Correlations of Imputed Predictor Variables for Hispanic ELL Sample (N=351)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1.Teacher Ethnicity (Latina)	-												
2. ELL/LEP Certification	.28***	-											
3.Teacher Speaks Spanish	.24***	.09***	-										
4.Years Education	.21***	.33***	.04*	-									
5.Prop Class Latino	.39***	.31***	.52***	.09***	-								
6. Prop Class Poor	.17***	.18***	.13***	-.00	.34***	-							
7. # Students	.13***	.17***	.15***	.03	.22***	.06**	-						
8.Teacher Sensitivity	-.08***	-.10***	-.06**	-.03	.04*	.02	-.08***	-					
9.Lenght of Day	.23***	.02	.05**	-.02	.11***	.08***	.16***	-.11***	-				
10.Child Gender	-.08***	-.01	-.06***	.02	-.12***	-.03	-.02	-.01	-.01	-			
11.Maternal Education	-.07***	-.07***	-.08***	.01	-.17***	-.41***	-.07***	.01	-.05**	.04*	-		
12.TVIP Fall Score	.07***	.09***	.018	.13***	.12***	.09***	.04*	.02	.03	-.09***	-.04*	-	
13.PreLAS Fall Score	-.08***	-.18***	-.16***	-.09***	-.21***	-.13***	-.11***	.12***	.04*	.08***	.12***	-.06**	-
14. Spanish Interactions	.35***	.43***	.22***	.14***	.52***	.31***	.12***	.02	.13***	-.06**	-.13***	.20***	-.30***

* = p < .05; ** = p < .01; *** = p < .001

Table 4: Correlations of Imputed Predictor Variables and Relationship Variables for Hispanic ELL Sample (N=351)

Variable	Closeness	Conflict	Routine Interactions	Minimal Interactions	Simple Interactions	Elaborated Interactions
1.Teacher Ethnicity (Latina)	.01	-.02	.04*	-.06**	-.07***	.03
2. ELL/LEP Certification	.10***	-.12***	-.03*	-.01	-.17***	-.15***
3.Teacher Speaks Spanish	-.08***	.06***	-.05**	.09***	.01	-.11***
4.Years Education	-.04*	-.05**	-.05**	.05**	-.15***	-.19***
5.Prop Class Latino	.03	.02	-.06**	.04*	-.12***	-.09***
6. Prop Class Poor	.07***	-.09***	-.12***	-.01	-.20***	-.12***
7. # Students	-.07***	.05**	-.13***	-.06***	-.12***	-.01
8.Teacher Sensitivity	.16***	-.13***	-.07***	-.00	.02	.03
9.Lenght of Day	.01	.06**	.06**	-.02	-.08***	.06***
10.Child Gender	-.07***	.18***	.06***	.10***	.14***	.00
11.Maternal Education	.01	-.00	.02	.00	.04*	.00
12.TVIP Fall Score	.06**	-.12***	.03	.08***	-.11***	-.09***
13.PreLAS Fall Score	.13***	.00	.01	.03	.11***	.11***
14. Spanish Interactions	.11***	-.12***	-.04*	.05**	-.16***	.00

* = p < .05; ** = p < .01; *** = p < .001

Table 5: Correlations of Imputed Relationship Variables and Gain Scores for Hispanic ELL Sample (N=351)

Variable	Closeness	Conflict	Routine Interactions	Minimal Interactions	Simple Interactions	Elaborated Interactions
1.Gains Letter Naming	.21***	-.12***	-.09***	-.13***	-.10***	-.05**
2. Raw Gains TVIP	.07***	-.04*	-.10***	-.14***	-.04*	-.04**
3.Gains PreLAS	.01	-.13***	.01	.03	.09***	.01
4.Kindergarten Rating Peer Social Skills	.19***	-.22***	-.03	-.08***	-.11***	-.05**
5.Kindergarten Rating Conduct Problems	-.04*	.38***	.04*	.16***	.23***	.19***

* = p < .05; ** = p < .01; *** = p < .001

Centering Variables in HLM

In order to aid in the interpretation of findings, all continuous variables were grand-mean centered during the analyses in HLM. Centering deducts the overall variable mean from each score so that results indicate how much change occurs in a given variable when all other variables are held at average levels (as opposed to when all other variables have a value of "0"). Because a value of "0" is impossible and nonsensical for many variables (e.g., maternal education), centering allows for greater ease of interpretation when explaining results.

Question 1: What types of relational experiences do Hispanic ELL students have in preschool, and does the quality of their relational experience differ significantly from the relational experiences of Hispanic/non-ELL students and non-Hispanic/non-ELL students?

In order to address the first question, three groups were created. First of all, a sub-sample of students who did not pass the English language screener and whose primary language was Spanish were identified and grouped as Hispanic ELL (N = 351; 14.6%) students (note: this sample is the main sample of interest in this study and is used in all subsequent analyses). A second group of children whose parents selected at least one Hispanic or Latino ethnic/racial category for the child (e.g., Mexican, Puerto Rican, Cuban, or "Other Latino") and who did pass the English language screener in the fall were identified as the "Hispanic/non-ELL" group (N = 406; 16.9%). Finally, students who were not identified by parents as Hispanic or Latino and who passed the English language screener in the fall were identified as the "non-Hispanic/non-ELL" group (N = 1,651; 68.6%). The Hispanic-ELL group was used as the comparison group in the

analysis, such that differences between Hispanic-ELL students and Hispanic/non-ELL students, as well as differences between Hispanic-ELL students and non-Hispanic/non-ELL students could be examined.

Hispanic ELL students used in this sample were compared with Hispanic/non-ELL students and non-Hispanic/non-ELL students* on overall levels of teacher-reported conflict and closeness, as well as on observed quality of teacher-child interactions (as measured by the quality of interactions on the Snapshot). The Snapshot measures interactions, in English or Spanish, that are Routine, Minimal, Simple, or Elaborated. A limitation of this measure is that it does not distinguish between positive or negative interactions. However, it is used here to indicate quality in terms of *extent* of verbal or physical interactions, with the assumption that more interactions, either positive or negative, are preferable to no interactions. Hierarchical Linear Modeling was used to account for nesting of children within classrooms. In addition, covariates (e.g., child-, teacher-, and classroom-level variables used in the following analyses) were added to the model to determine whether differences in overall relational experiences between groups exist even when controlling for other relevant variables. The two covariates specific to the subgroup of Hispanic-ELL students (i.e., fall TVIP scores, and fall PreLAS scores) that are used in other analyses as indicators of native language ability and English language skills, were excluded as covariates in this analysis due to the fact that these

* Note: For all other analyses, Hispanic ELL students will not be compared to groups of non-Hispanic ELL students for a number of reasons. First of all, outcome measures collected for Hispanic ELL and non-Hispanic ELL students are not comparable. Second, some of the predictors hypothesized to be of importance for ELL students do not apply to the general population. Third, research has already established the importance of teacher-child relationships within the NCEDL/SWEEP sample, and these analyses typically exclude study children assessed in Spanish.

variables are not relevant to non-ELL students, and because imputed values of these variables for non-ELL students are meaningless.

The following model was used to test for group differences on each of the six relational variables (i.e., conflict, closeness; Routine, Minimal, Simple, Elaborated interactions):

Level-1 Model

Y = B0 + B1*(Hispanic/non-ELL group) + B2*(non-Hispanic/non-ELL group) + B3*(Child Gender) + B4*(Child Maternal Education) + R

Level-2 Model

B0 = G00 + G01*(Teacher Ethnicity Latino/a) + G02*(Teacher had ELL certificate) + G03*(Teacher Speaks Spanish) + G04*(Teacher Years of Education) + G05*(% Class Latino) + G06*(% Class Poor) + G07*(Class Size) + G08*(Teacher Sensitivity) + G09*(Length of School Day) + U0

Where the value of Y equals the average intercept (B0) plus the average intercept for each variable in the model (B1-B4) and the level-1 error term (R). In the Level 2 model, the average intercept equals the sum of the average intercepts of each variable at Level-2 (G00-G09) plus the between classroom variability (U0). These two models are combined during analysis in HLM to create a single model that assesses variance at both the teacher- and child-levels.

Results of the HLM analysis for Question 1 are displayed in Table 6 (below). Results show that across all three groups of children, the average child had a teacher-rating of 1.41 for conflict and 4.36 for closeness, when all other child, teacher, and classroom characteristics were average. There was a significant difference between

Hispanic ELL students and Hispanic non-ELL students on teacher-ratings of both conflict ($\beta = 0.12$; $p < .05$) and closeness ($\beta = 0.12$, $p < .05$). Hispanic English-speaking students were rated an average of 0.12 points higher than Hispanic non-English speaking students on both conflict and closeness. Differences in conflict and closeness scores between Hispanic ELL students and their non-Hispanic/non-ELL peers were not statistically significant, although results were approaching significance in the expected direction. The Hispanic ELL group did not differ significantly from the other two groups in terms of the amount of time students spent engaged in English or Spanish interactions with teachers (all p's $< .05$). The average child in this sample spent about 1% of their time in Routine interactions with teachers, 3% in Minimal interactions, 5% in Simple interactions, and 4% in Elaborated interactions.

Table 6: Group Differences between Hispanic ELL Students and Hispanic/non-ELL and non-Hispanic/non-ELL Groups (Total N=2,408)

Group Variable	Closeness	Conflict	Routine	Minimal	Simple	Elaborated
Hispanic/non-ELL (compared to Hispanic-ELL)	0.12* (0.05)	0.12* (0.05)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Non-Hispanic/non-ELL (compared to Hispanic-ELL)	0.11 (0.06)	0.11 (0.06)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.01)	0.00 (0.00)
Intercept	4.36*** (0.06)	1.41*** (0.06)	0.01*** (0.00)	0.03*** (0.00)	0.05*** (0.00)	0.04*** (0.00)
Covariates						
Teacher Latino/a	0.03 (0.06)	-0.09 (0.06)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
ELL/LEP Certification	-0.02 (0.07)	-0.09 (0.06)	-0.00 (0.00)	-0.01 (0.00)	-0.02*** (0.00)	-0.01** (0.00)
Teacher Speaks Spanish	-0.01 (0.05)	-0.02 (0.05	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Teacher Years Education	0.01 (0.01)	-0.01 (0.01)	0.00 (0.00)	0.00 (0.00)	-0.00* (0.00)	-0.00 (0.00)
Prop Class Latino	0.02 (0.09)	0.01 (0.10)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)
Prop Class 150% Below Poverty	0.05 (0.06)	0.05 (0.07)	0.00 (0.00)	0.00 (0.00)	0.01** (0.00)	0.01* (0.00)
Class Size	-0.01 (0.00)	-0.00 (0.00)	-0.00* (0.00)	-0.00** 0.00	-0.00*** (0.00)	-0.00 (0.00)
Teacher Sensitivity	0.05* (0.02)	-0.05** (0.02)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00*** (0.00)
Length of School Day	-0.00 (0.01)	0.03*** (0.01)	0.00* (0.00)	-0.00** (0.00)	-0.00 (0.00)	0.00 (0.00)
Child Gender	-0.16*** (0.03)	0.23*** (0.03)	-0.00 (0.00)	0.00** (0.00)	0.00*** (0.00)	0.00 (0.00)
Child Maternal Education	0.02** (0.00)	-0.00 (0.01)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)

* = p < .05 ** = p < .01 *** = p < .001

Question 2: What child-, teacher-, interaction-, and classroom- level factors predict the quality of teacher-child relationships between Hispanic ELL students and their teachers?

In order to address this question, Hierarchical Linear Modeling was used to determine what child-level (e.g., gender, maternal education, native language ability, and English proficiency), teacher-level (e.g., Latina ethnicity, years of education, ELL/LEP certification, and ability to speak Spanish), interaction-level (e.g., percent interactions in Spanish), and classroom- level (e.g., % of class that is Latino, % of class that is poor, class size, teacher sensitivity, and length of the school day) characteristics predict teacher-perceived conflict and closeness as reported on the STRS. In addition, these variables were used to predict the quality of interactions, as measured by the Snapshot (e.g., Simple, Routine, Minimal, and Elaborated interactions).

The following model was used to evaluate predictors for each of the relationship variables:

Level-1 Model

Y = B0 + B1*(Child Gender) + B2*(Child Maternal Education) + B3*(Fall TVIP Score) + B4*(Fall PreLAS Score) + B5*(Proportion Interactions in Spanish) + R

Level-2 Model

B0 = G00 + G01*(Teacher Ethnicity Latino/a) + G02*(Teacher had ELL certificate) + G03*(Teacher Speaks Spanish) + G04*(Teacher Years of Education) + G05*(% Class Latino) + G06*(% Class Poor) + G07*(Class Size) + G08*(Teacher Sensitivity) + G09*(Length of School Day) + U0

A separate model was run for each of the relationship variables (e.g., conflict and closeness; Routine, Minimal, Simple, and Elaborated interactions). Results of these analyses can be seen in Table 7 (below).

The quality of teacher-child relationships and the quality of interactions between Hispanic ELL students and their teachers was predicted by a number of child, teacher, and classroom characteristics. Hispanic ELL students had higher teacher-reported closeness when they entered preschool with greater English language ability ($\beta = 0.01$; $p < .05$), and when their teachers were rated by observers as having greater sensitivity toward students ($\beta = 0.12$; $p < .05$). Hispanic ELL students who were male had higher ratings of conflict with teachers than did female students ($\beta = 0.22$; $p < .01$); male students were rated an average of 0.22 points higher than females when all other predictor variables were average. Male Hispanic ELL students were also more likely to experience Simple ($\beta = 0.01$; $p < .05$) and Minimal ($\beta = 0.01$; $p < .05$) interactions with teachers. Hispanic ELL students with teachers who spoke some Spanish were more likely to engage in Minimal interactions ($\beta = 0.01$; $p < .05$). Hispanic ELL students in classrooms with lower percentages of poor students spent greater proportions of time in both Simple ($\beta = -0.05$; $p < .01$) and Elaborated ($\beta = -0.03$; $p < .05$) interactions with teachers. Children in classrooms with a greater number of students experienced fewer Routine interactions ($\beta = -0.00$; $p < .05$).

Table 7: Predictors of Relationship Variables for Hispanic ELL Sample (N=351)

Predictors	Closeness	Conflict	Routine	Minimal	Simple	Elaborated
Intercept	4.37***	1.32***	0.01*	0.02**	0.04***	0.05***
	(0.15)	(0.09)	(0.01)	(0.01)	(0.01)	(0.01)
Teacher/Classroom Level Predictors						
Teacher Latino/a	-0.06	-0.01	0.00	-0.01	-0.00	0.00
	(0.11)	(0.08)	(0.00)	(0.01)	(0.01)	(0.01)
ELL/LEP Certification	0.22	-0.14	-0.00	-0.00	-0.01	-0.01
	(0.13)	(0.11)	(0.00)	(0.01)	(0.01)	(0.01)
Teacher Speaks Spanish	-0.09	0.05	-0.00	0.01*	0.01	-0.01
	(0.15)	(0.11)	(0.00)	(0.01)	(0.01)	(0.01)
Teacher Years Education	-0.04	-0.01	0.00	0.00	-0.00	-0.00
	(0.03)	0.03	(0.01)	(0.00)	(0.00)	(0.00)
Prop Class Latino	0.02	0.31	0.00	-0.00	0.00	-0.00
	(0.22)	(0.19)	(0.01)	(0.01)	(0.01)	(0.01)
Prop Class 150% Below Poverty	0.15	-0.32	-0.01	-0.01	-0.05**	-0.03*
	(0.23)	(0.19)	(0.01)	(0.01)	(0.02)	(0.01)
Class Size	-0.01	0.01	-0.00*	-0.00	-0.00	0.00
	(0.01)	(0.01)	(0.00)	0.00	(0.00)	(0.00)
Teacher Sensitivity	0.12*	-0.08	-0.00	-0.00	0.00	0.00
	(0.06)	(0.05)	(0.00)	(0.00)	(0.00)	(0.00)
Length of School Day	0.02	0.01	0.00	0.00	-0.00	0.00
	(0.02)	(0.02)	(0.00)	(0.00)	(0.00)	(0.00)
Child/Interaction Level Predictors						
Child Gender	-0.09	0.22**	0.00	0.01*	0.01*	0.00
	(0.07)	(0.06)	(0.00)	(0.00)	(0.01)	(0.01)
Child Maternal Education	-0.00	-0.00	0.00	0.00	-0.00	-0.00
	(0.02)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Fall TVIP Score	0.00	-0.01	0.00	0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Fall PreLAS Score	0.01*	-0.00	-0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Proportion Interactions in Spanish	0.27	-0.30	-0.00	0.02	-0.00	0.04
	(0.29)	(0.24)	(0.01)	(0.02)	(0.02)	(0.02)

* = $p < .05$ ** = $p < .01$ *** = $p < .001$

Question 3: Do teacher-perceived conflict and teacher-perceived closeness, as well as observed quality of teacher-student interactions, predict ELL students' social and academic gains over the course of preschool and into kindergarten?

To address this question, Hierarchical Linear Modeling was used to determine whether relationship variables (e.g., teacher-reported conflict and closeness; Routine, Minimal, Simple, and Elaborated interactions) predicted gains in academic outcomes (e.g., language gains) and social outcomes (e.g., kindergarten teacher-reports of peer social skills and conduct problems). All models controlled for all child-, family-, and teacher-level variables used in previous analyses as well as all other relational variables. The following model was used for these analyses:

Level-1 Model

Y = B0 + B1*(Child Gender) + B2*(Child Maternal Education) + B3*(Fall TVIP Score) + B4*(Fall PreLAS Score) + B5*(Proportion Interactions in Spanish) + B6*(STRS Closeness) + B7*(STRS Conflict) + B8*(Routine Interactions) + B9*(Minimal Interactions) + B10*(Simple Interactions) + B11*(Elaborated Interactions) + R

Level-2 Model

B0 = G00 + G01*(Teacher Ethnicity Latino/a) + G02*(Teacher had ELL certificate) + G03*(Teacher Speaks Spanish) + G04*(Teacher Years of Education) + G05*(% Class Latino) + G06*(% Class Poor) + G07*(Class Size) + G08*(Teacher Sensitivity) + G09*(Length of School Day) + U0

A separate model was run for each of the five academic/social outcome measures. Results are presented in Table 8 (below).

Table 8: Relationship Variables Predicting Academic and Social Outcomes for Hispanic ELL Sample (N=351)

Predictors	Gains Letter Naming	Gains TVIP	Gains PreLAS	Kindergarten Conduct Problems	Kindergaten Peer Social Skills
Intercept	5.32**	8.45***	6.05***	1.48***	3.93***
	(1.61)	(1.61)	(1.39)	(0.17)	(0.22)
Closeness	1.62**	0.83	0.45	0.08	0.15
	(0.58)	(0.84)	(0.74)	(0.08)	(0.09)
Conflict	0.09	-0.03	-2.04*	0.43***	-0.19
	(0.65)	(1.15)	(0.78)	(0.10)	(0.10)
Routine Interactions	-16.65	-31.99	-13.29	0.67)	-0.66
	(18.73)	(34.06)	(22.76)	(3.07)	(3.19)
Minimal Interactions	-28.49**	-30.59	11.46	1.52	-1.55
	(9.94)	(34.06)	(12.22)	(1.33)	(1.69)
Simple Interactions	6.08	1.65	4.49	2.24*	-0.78
	(7.52)	(13.65)	(9.98)	(1.11)	(1.12)
Elaborated Interactions	-7.60	-12.31	4.82	1.40	-1.12
	(10.44)	(14.46)	(7.88)	(1.26)	(1.13)
Control Variables					
Teacher Latino/a	0.23	-0.85	0.63	-0.06	-0.01
	(0.89)	(1.24)	(1.11)	(0.09)	(0.11)
ELL/LEP Certification	1.38	-0.12	0.20	-0.16	0.17
	(1.12)	(1.35)	(1.11)	(0.12)	(0.13)
Teacher Speaks Spanish	-1.15	0.45	2.47	-0.01	0.04
	(1.62)	(1.89)	(1.32)	(0.16)	(0.23)
Teacher Years Education	0.18	0.14	-0.15	-0.02	-0.03
	(0.24)	(0.41)	(0.31)	(0.03)	(0.37)
Prop Class Latino	1.53	2.57	-6.05**	-0.08	-0.34
	(1.79)	(2.82)	(2.25)	(0.23)	(0.30)
Prop Class 150% Below Poverty	0.98	-0.00	2.22	0.09	-0.12
	(2.57)	(3.65)	(2.37)	(0.29)	(0.32)
Class Size	0.04	-0.10	-0.20	0.01	-0.00
	(0.10)	(0.13)	(0.12)	(0.01)	(0.02)
Teacher Sensitivity	0.74	0.25	0.26	-0.05	-0.03
	(0.54)	(0.62)	(0.52)	(0.05)	(0.06)
Length of School Day	0.29	0.26	-0.07	-0.01	0.04
	(0.17)	(0.25)	(0.17)	(0.02)	(0.02)
Child Gender	-0.81	-1.19	0.41	0.27*	-0.19
	(0.64)	(1.03)	(0.82)	(0.11)	(0.11)
Child Maternal Ed	-0.09	0.18	-0.02	-0.01	0.02
	(0.15)	(0.25)	(0.15)	(0.02)	(0.02)
Fall TVIP Score	0.12**	-0.18**	0.03	-0.00	0.01
	(0.04)	(0.06)	(0.04)	(0.01)	(0.01)
Fall PreLAS Score	0.07	0.05	-0.19***	-0.00	0.01*
	(0.04)	(0.07)	(0.04)	(0.00)	(0.01)
Prop Span Interactions	5.68*	4.65	-15.01***	0.56	0.44
	(2.52)	(4.09)	(3.63)	(0.33)	(0.35)

* = p < .05 ** = p < .01 *** = p < .001

Relational Predictors of Gains on English Language Screener

The first model examined whether teacher-perceived conflict and closeness and observed interactions predict gains on the English language screener (PreLAS) over the course of preschool. Results show that students gained an average of 6.05 points on the PreLAS from the fall to the spring. Hispanic ELL children who were rated by teachers as having more conflict in relationships experienced fewer gains on the PreLAS (β = -2.04; $p < .05$). When all other variables were average, students experienced an average decrease of 2.04 points in gain scores for each 1-unit increase in conflict. No other relational or interaction variables produced significant changes in gain scores on the PreLAS. Students who had higher percentages of Latino students in their classroom (β = -6.05; $p < .01$), higher initial PreLAS scores (β = -0.19; $p < .001$), and who had more interactions in Spanish (β = -15.01; $p < .001$) experienced less gain on the PreLAS.

Relational Predictors of Gains in Spanish Language Ability

The second model examined whether teacher-perceived conflict and teacher-perceived closeness and observed interactions predict gains in children's native language ability between the fall and spring of the preschool year, as measured by the *TVIP*. The average Hispanic ELL student gained 8.45 points on the TVIP over the course of the year. However, none of the relationship or interaction variables predicted differences in this average gain score. Students who scored higher on the TVIP in the spring experienced less gain (β = -0.18; $p < .01$).

Relational Predictors of Gains on Identifying Letters Task

The third model examined whether teacher-perceived conflict and teacher-perceived closeness and observed interactions predict gains in children's language ability

between the fall and spring of the preschool year, as measured by the *Identifying Letters* task (note: letters were the same for English and Spanish versions of this test). Hispanic ELL students had an average gain score of 5.32 on the Identifying Letters Task. Teacher-reported closeness was a significant predictor of gains on this task ($\beta = 1.62$; $p < .01$), such that students typically scored 1.62 more points on the task for each 1-unit increase in closeness. In addition, Minimal interactions predicted negative gains on the Identifying Letters Task ($\beta = -28.49$; $p < .01$), such that children who experienced more Minimal interactions had fewer gains. No other relational variables were significant. Children who had higher scores on the fall TVIP ($\beta = 0.12$; $p < .01$), and those who experienced a greater proportion of interactions in Spanish ($\beta = 5.68$; $p < .05$) had greater gains on the TVIP.

Relational Predictors of Kindergarten Teacher Ratings of Conduct Problems

A fourth model examined whether relational variables predict children's kindergarten teachers' ratings of them in the fall of the kindergarten year, as measured by teacher-ratings on the Conduct Problems subscale of the *Social Skills and Behavior Problems Scale*. Hispanic ELL students had an average score of 1.48 on the Conduct Problems subscale. Preschool teacher-ratings of student-teacher conflict predicted positive gains on the Conduct Problems ($\beta = 0.43$; $p < .001$) scale, as rated by kindergarten teachers. In addition, Simple interactions predicted gains in kindergarten teacher-ratings of Conduct Problems ($\beta = 2.24$; $p < .05$), such that a higher proportion of Simple interactions predicted greater Conduct Problems in kindergarten. Male children were more likely to have higher scores on the Conduct Problems scale ($\beta = 0.27$; $p < .05$) even when controlling for all other variables.

Relational Predictors of Kindergarten Teacher Ratings of Peer Social Skills

The final model examined whether relationship variables predict children's social skills in kindergarten as rated by their kindergarten teacher on the Peer Social Skills subscale of the *Social Skills and Behavior Problems Scale*. Hispanic ELL students had an average score of 3.93 on this scale, and differences were not predicted by relationship variables. Students who scored higher on the PreLAS in the fall had higher scores on the Peer Social Skills subscale in kindergarten ($\beta = 0.01$; $p < .05$).

Question 4: What variables moderate the effects of Teacher-Child interactions on child-outcomes?

In order to address the final question, Hierarchical Linear Modeling was used to determine whether certain variables moderate the relationship between teacher-child relationship quality, as perceived and reported by teachers, and outcome variables. All interaction terms were first computed in SPSS, and each variable in the interaction was centered before the interaction term was computed. Three variables, child's language ability, teacher ELL certification, and the proportion of interactions in Spanish, were tested as potential moderators of the relationship between teacher-reports of conflict and closeness and outcomes. The following model was used for the analyses:

Level-1 Model

Y = B0 + B1*(Child Gender) + B2*(Child Maternal Education) + B3*(Fall TVIP Score) + B4*(Fall PreLAS Score) + B5*(Proportion Interactions in Spanish) + B6*(STRS Closeness) + B7*(STRS Conflict) + B8*(Routine Interactions) + B9*(Minimal Interactions) + B10*(Simple Interactions) + B11*(Elaborated Interactions) + B12*(Interaction Term) + R

Level-2 Model

B0 = G00 + G01*(Teacher Ethnicity Latino/a) + G02*(Teacher had ELL certificate) + G03*(Teacher Speaks Spanish) + G04*(Teacher Years of Education) + G05*(% Class Latino) + G06*(% Class Poor) + G07*(Class Size) + G08*(Teacher Sensitivity) + G09*(Length of School Day) + U0

For each group of analyses, a separate model was run for each interaction-outcome pair. For example, each moderator variable was tested with conflict and each of the 5 outcomes, and then with closeness and each of the five outcomes. A total of 10 models were run for each moderator variable. Results are presented in Table 9 (below).

The first group of analyses examined whether Hispanic ELL student's English language ability in the fall moderates the relationship between teacher-reported conflict and closeness on outcomes (e.g., gains on TVIP, PreLAS, and Identifying Letters Task; Kindergarten ratings on Conduct Problems and Peer Social Skills). Results show that student's English language ability does not moderate relationships between relationship variables and outcomes (all p's < .05). The second group of analyses examined whether teacher's certification in ELL/LEP moderates the relationship between relationship quality on outcomes. Again, this variable was not found to moderate the relationship between conflict or closeness and outcome variables (all p's < .05). The final group of analyses examined whether the proportion of interactions in Spanish between teachers and students moderates the effects of relationship variables on outcomes. No significant moderators were found (all p's > .05).

Table 9: Moderators of Relationships between Conflict/Closeness and Outcome Variables (N=351)

Interaction Terms	Gains Letter Naming	Gains TVIP	Gains PreLAS	Kindergarten Conduct Problems	Kindergaten Peer Social Skills
PreLAS*Closeness	-0.01	-0.02	-0.09	-0.00	-0.01
	(0.05)	(0.07)	(0.05)	(0.01)	(0.01)
PreLAS*Conflict	0.04	0.11	0.06	-0.01	0.01
	(0.04)	(0.08)	(0.05)	(0.01)	(0.01)
ELL Certification*Closeness	-0.65	1.26	0.70	0.05	-0.04
	(1.38)	(1.89)	(1.40)	(0.16)	(0.19)
ELL Certification*Conflict	-0.23	-1.76	2.06	-0.27	0.15
	(1.33)	(2.01)	(1.31)	(0.17)	(0.19)
% Spanish Interactions*Closeness	-1.85	3.86	2.71	0.15	0.46
	(3.85)	(4.61)	(3.22)	(0.41)	(0.59)
% Spanish Interactions*Conflict	2.06	2.52	1.44	0.47	-0.82
	(3.91)	(6.44)	(4.04)	(0.61)	(0.58)

CHAPTER 4

DISCUSSION

The current study was designed to examine the nature and importance of teacher-child relationships in a population of Hispanic ELL students by addressing four main research questions. First, differences in the overall quality of teacher-child relationships between Hispanic ELL populations and their Hispanic non-ELL and non-Hispanic/non-ELL peers were examined. Second, characteristics of children, teachers, and classrooms were examined as predictors of relationship quality for Hispanic ELL students. Third, the study tested the importance of teacher-child relationship quality in predicting academic and social outcomes for Hispanic ELL students. Finally, a number of variables were tested as potential moderators of the relationship between relational variables and child outcomes. Hierarchical Linear Modeling using HLM software was used to address each of these research questions. Overall, results of the analyses supported study hypotheses. This section will discuss specific findings of interest for each analysis.

Group Differences Between Hispanic ELL and Hispanic non-ELL Students

Results of this study identified significant group differences in relationship quality between Hispanic ELL students and Hispanic non-ELL students. Hispanic children who were designated as ELL in the fall were rated by teachers as having lower closeness and lower conflict in the spring than were their English-speaking peers. This was consistent with study hypotheses, which predicted that the Hispanic ELL group would experience

less closeness and equal or less conflict in their relationships with teachers. These findings suggest that within the subgroup of Hispanic students, the ability to speak English may be an important component of relationship quality. Hispanic ELL students had lower ratings than Hispanic non-ELL students on both conflict and closeness, which could be interpreted in a number of ways. On one hand, lower conflict scores might reflect more preferable relationship quality, and may indicate that Hispanic ELL students are less likely than their English-speaking peers to engage in conflictual behaviors or more likely to display respect toward teachers. On the other hand, this might indicate that Hispanic students who are also limited in English proficiency tend to have less of a relationship with teachers (either positive or negative). If this is the case, Hispanic ELL students may tend to be ignored by teachers, which would result in lower ratings of both conflict and closeness.

Although differences were not found between the Hispanic-ELL group and the non-Hispanic/non-ELL group, these values were approaching significance (e.g., $p = .06$). It may be that the non-Hispanic/non-ELL group contains a much larger diversity of children, and this study did not control for all factors that might impact relationships in the larger sample. For example, the non-Hispanic/non-ELL group included a number of ethnic categories other than Hispanic (e.g., Asian, African American, etc.). It may be that the Hispanic ELL group would have differed from subgroups of this general population. For example, perhaps Caucasian children have higher overall relationship quality than the Hispanic ELL group, but African American students have lower overall quality. In fact, some studies suggest that African American students tend to have lower quality relationships with their Caucasian teachers than do their Caucasian peers (Entwisle &

Alexander 1988; Jerome, Hamre, & Pianta, in press; Ladd, Birch, & Behs, 1999). Although the Hispanic ELL group did not differ from the overall non-Hispanic English-speaking population, examining more specific subgroups might reveal significant differences.

Specific Child-, Teacher-, and Classroom-Level Predictors of Relationship Quality for Hispanic ELL Students

Given that Hispanic children who are limited in their ability to speak English have poorer overall relationships (at least in terms of closeness) with teachers, it is important to understand what specific child-, teacher-, and classroom-level factors contribute to the overall quality of their relationships by the end of the year. Having an understanding of specific predictors of relationship quality can aid in determining which factors to target when intervening to improve relationship quality for at-risk students. Because previous research has focused on predictors of relationship quality in the general population, often excluding ELL students, and because many of the predictors of relationship quality for Hispanic ELL students might not be relevant to other non-ELL students (e.g., whether the teacher has an ELL/LEP certification) this study examined predictors of relationship quality specific to Hispanic ELL students.

Based on numerous studies conducted on the general population (e.g., Hamre & Pianta, 2001; Jerome, Hamre, & Pianta, in press; Silver, Measelle, Armstrong, & Essex, 2005), as well as specific research on Hispanic or Hispanic ELL students (e.g., Chang et al., in press; Espinosa, 2007; Regalado, Goldenberg, & Appel, 2001; Youngs & Youngs, 2001), it was hypothesized that a number of child, teacher, and classroom characteristics would impact the quality of relationships that Hispanic ELL students form with their

teachers. Specifically, it was hypothesized that ELL students who were female, had higher maternal education, greater English proficiency, better English skills, who were in classrooms with Hispanic teachers, teachers who spoke Spanish, and teachers certified to teach ELL students would have better overall relationships with teachers. In addition, it was hypothesized that children who experienced more interactions in Spanish, were in classrooms with higher percentages of Hispanic/Latino students, lower percentages of low-SES students, higher ratings of teacher sensitivity, fewer total students, and shorter days were likely to have higher quality relationships and interactions.

Overall, fewer of the child, teacher, and classroom characteristics predicted relationship quality than was expected. However, a few variables did predict relationship quality in expected directions. Results of this study found that, as is the case in the general population (Hamre & Pianta, 2001; Kesner, 2000; Silver, Measelle, Armstrong, & Essex, 2005), male Hispanic ELL students experienced poorer overall relationships with teachers than did females. Male students experienced higher ratings of teacher-reported conflict, and a greater proportion of time spent in Minimal and Simple interactions. Although greater time spent in Minimal and Simple interactions was originally hypothesized to indicate better relationship quality, results of this study suggest that these interactions may often be associated with more negative behavior management interactions. The Snapshot scale does not differentiate between positive and negative interactions, making it difficult to assume that more interactions are necessarily better. In fact, given that both Minimal and Simple interactions were found to associate with poorer child outcomes, it is likely that these scales capture undesirable interactions in addition to

more positive, beneficial interactions. These findings suggest that Hispanic ELL students who are male experience lower quality relationships, overall, than do their female peers.

Another characteristic of Hispanic ELL children that was associated with better quality relationships in the spring was their ability to speak English in the fall. As predicted, children who entered school with better developed English language skills experienced closer relationships with their teachers. This is consistent with previous research and theory, which suggests that language ability is a critical component of the formation of relationships, and that the formation of high-quality relationships is a critical component of language development (e.g., Bowman et al., 2000; Pianta, in press). It is likely that teachers, particularly those who do not speak the child's native language, are better able to interact with children who have some English proficiency, which leads to higher quality relationships. Lower scores on English language ability tests may also correlate with other factors, such as acculturation or other cultural factors, which could not be measured in this study but might also associate with relationship quality.

Observations of teacher-sensitivity also predicted relationship quality for ELL students. Teachers who were rated as being more aware of student needs, who were able to respond appropriately to student's needs, and who evidenced comfort and approachability with students, formed closer relationships with their Hispanic ELL students than did teachers who were less sensitive. This is an important finding in terms of developing intervention strategies that might help foster higher quality teacher-child relationships for Hispanic ELL students. Placing Hispanic ELL students in classrooms with highly sensitive teachers, or training individuals who currently teach Hispanic ELL

students to increase their level of sensitivity, may be two ways to improve both teacher-child relationships and the academic and social outcomes associated with these relationships. It is interesting that teacher-sensitivity was the only teacher-level predictor of relationship quality. Even when controlling for things like certification in ELL, years of education, and the teacher's ability to speak Spanish, the association between having a more sensitive teacher and the quality of relationships remains.

Although this study measured teacher sensitivity on a broad level, it is possible that cultural sensitivity, in particular, is of critical importance when working with ELL students. Research on ELL populations suggests that having an awareness of ELL students' cultural values and supporting children's native cultures and languages is of critical importance in promoting child well-being (Genesee, Paradis, & Crago, 2004). Espinosa (2007), in a list of recommendations for working with ELL students, suggests that teachers be culturally aware and competent, and that they strive to incorporate children's native cultures into the classroom. It is possible that teachers who are highly sensitive in general are more likely to also be aware of the importance of cultural considerations for their ELL students.

This study also identified a number of variables that predict different types of interactions with teachers (i.e., Routine, Minimal, Simple, Elaborated). In general, having a teacher who speaks some Spanish and being male predicted more time spent in certain types of interactions, whereas larger class size and greater percentages of poor students were associated with less time spent in certain types of interactions. However, as is discussed below, these results are difficult to interpret given findings that suggest that more time spent in certain types of interactions (particularly Minimal and Simple) might

not actually represent better educational/relational quality. For example, although male students experienced a greater proportion of their time in Simple and Minimal interactions, Simple and Minimal interactions were found to predict poorer child outcomes. This suggests that the initial assumption that more interactions on the Snapshot indicate better relationships may not be accurate.

Relationship Quality as a Predictor of Social and Academic Outcomes

Study results found that relationship quality between Hispanic ELL students and their teachers was related to students' academic and social gains, with more positive teacher-ratings of relationship quality in the spring predicting greater positive academic and social gains over the course of the year. These findings were consistent with hypotheses, which, based on past research in the general population (e.g., Hamre & Pianta, 2001; Ladd, Birch, & Buhs, 1999; Meehan, Hughes, & Cavell, 2003; Pianta, Steinberg, & Rollins, 1995; Silver, Measelle, Armstrong, & Essex, 2005; van Ijzendoorn, Sagi, & Lambermon, 1992), predicted that children who experienced more closeness in their relationships with teachers and less conflict would experience greater positive gains. In addition, it was hypothesized that Hispanic ELL children who experienced a greater proportion of time spent in Elaborated and Simple interactions would experience more positive gains.

Results found that Hispanic ELL students who had higher quality relationships with their teachers, meaning lower teacher-ratings of conflict and greater ratings of closeness, experienced greater academic gains and more positive social outcomes. Specifically, Hispanic ELL students who had higher teacher-ratings of closeness also had greater language gains over the course of preschool on the letter naming task. Past

research suggests that teachers are more likely to give children opportunities to participate in classroom activities if they view the student more positively (Espinosa & Laffey, 2003), which could explain how students who are viewed more positively by teachers experience more success on a typical preschool activity (i.e., learning the alphabet). Hispanic ELL students who had higher teacher-ratings of conflict did not experience as much improvement in their English language ability over the course of preschool and were rated as having higher levels of conduct problems by their kindergarten teachers. This suggests that the quality of relationships that Hispanic ELL students form with preschool teachers impacts both academic and social outcomes.

In general, the quality of Hispanic ELL student's relationships with their teachers appears more linked to English language outcomes than to Spanish language outcomes. For example, none of the relationship variables predicted gains on the TVIP. It may be that Hispanic ELL children experience the majority of their English interactions with teachers in the classroom, and that having a close relationship with that teacher is especially critical in developing English language skills. On the other hand, Hispanic ELL children may experience the majority of their Spanish language interactions outside of school, making school-based relationships with teachers less influential on native language gains. In fact, researchers have proposed that language acquisition is heavily linked to the culture in which it is learned (Espinosa, 2007), which supports the idea that relationships with parents and family members might impact Spanish-language acquisition more heavily, while teacher-child relationships might influence English-language development.

The hypothesis that more time spent in Simple and Elaborated interactions would predict more favorable social and academic gains was not supported by the results. In fact, more time spent in Simple interactions with teachers actually predicted less favorable outcomes. Hispanic ELL children who spent a greater proportion of time in Simple interactions with their preschool teachers were rated higher on the conduct problems subscale in kindergarten. This indicates that interactions coded as Simple on the Snapshot might capture both desirable and undesirable interactions in terms of the extent to which these interactions foster high-quality relationships. As stated in the description of the instrument, the Snapshot was designed to capture the quality of interactions in terms of complexity of the interaction, and does not indicate whether interactions were positive or negative. For example, Simple interactions are described as those that involve a short statement from the teacher (e.g., "you should not be doing that" or "you are doing very well") that may or may not encourage verbalizations from the student. It is likely that many teacher-statements geared toward behavior management would be coded as Simple interactions. In this sense, it is understandable that children engaged in more of these interactions would also score more highly on ratings of conduct problems. Similarly, the above description might help to explain the unexpected finding that more time spent in Minimal interactions was associated with less gain on the letter naming task.

There was no relationship between the percent of time spent in Elaborated interactions and any of the outcome variables. Again, it is possible that this interaction code is used to identify a broad range of interactions types. For example, a high quality conceptual discussion about prediction and a long back-and-forth argument about a

child's behavior could both be scored as an Elaborated interaction, meaning that this code captures many different types of interactions, some of which would be expected to enhance and some to diminish student success.

An important implication of these findings is that it appears that it is not only the amount or complexity of interactions that a child experiences that contributes to the child's language development, but that the nature of the relationship within which those interactions take place is also important. For example, having more interactions or more complex interactions on the Snapshot did not predict positive language gains, whereas having a close and supportive relationship with teachers did.

Moderators of the effects of Relationship Quality on Child Outcomes

Although this study explored a number of potential moderators of the association between relationship quality (i.e., conflict and closeness) and child outcomes, none were found to be significant. Variables tested as potential moderators included the child's English language ability, whether or not the teacher was certified to teach ELL/LEP, and the percent of interactions that occurred in Spanish. Contrary to hypotheses, results show that none of these variables moderated the relationships between conflict and closeness and specific outcomes. This suggests that the above findings linking relationship quality to academic and social gains do not differ for children who speak more or less English, have teachers with or without an ELL certification, or who experience greater or fewer interactions in Spanish.

Limitations

There are a number of important limitations to this study that should be noted. First of all, data for this study were taken from a large scale national study that was not

specifically designed to examine Hispanic ELL students. In fact, many past analyses of this data exclude Hispanic ELL students from their samples. While the quality and size of this database contribute a number of strengths to the present study, there were limitations as to what variables could be used to explore study questions. Variables that were proposed in the introduction as potentially important in understanding teacher-child relationships in Hispanic ELL populations (e.g., acculturation; classroom organization) could not be examined in this study due to lack of appropriate measures. The sample was also limited to mostly Mexican and other Latino populations, and it was not possible to examine more specific subgroups of the very broad Hispanic population.

This study was especially limited by the lack of an ideal observational measure of relationship quality. The Snapshot was used to indicate the quality of observed interactions. However, limitations of this measure have been noted throughout the discussion. Specifically, the Snapshot's failure to distinguish between positive and negative interactions may be problematic. While this study originally assumed that more interactions indicated higher quality experiences, results suggest that some types of interactions, for some children or in some circumstances, might not indicate higher quality. For example, more time spent in Minimal and Simple interactions was actually associated with poorer academic and social outcomes. Male children tended to have greater proportions of these interactions with teachers, and also tended to have higher ratings of conflict, indicating that Minimal and Simple interactions likely include interactions geared toward behavior management. The inability to distinguish between various types of interactions captured within the larger categories (e.g., Simple, Minimal, Routine, Elaborated) makes some of the study findings difficult to interpret.

The lack of consistent use of English and Spanish measures at both time points in the SWEEP and NCEDL studies complicated data analyses. For example, children in the NCEDL study who passed the English language screener in the spring were not reassessed in Spanish in the spring but in English. This made it difficult to compare fall and spring scores on the language tests. In order to manage this, data imputation was used to estimate the Spanish TVIP score for children who passed the English language screener in the fall and were therefore given the English version of the test (e.g., the PPVT). Although data imputation is believed to provide a good estimate of what these children would have scored on the TVIP, it would have been preferable to have assessments in both English and Spanish at both time points. In addition, it is likely that bilingual children know fewer English vocabulary words and fewer Spanish vocabulary words than their monolingual peers, but that their combined vocabulary is comparable to their peers (Espinosa, 2007). Therefore, having a vocabulary assessment that examined combined vocabulary knowledge in both languages might have provided a better overall measure of language development.

Finally, this study purposefully focused on the nature and quality of relationships within the Hispanic ELL subgroup, and did not test whether the associations found to exist within this subgroup were significantly different from associations in the general population. For example, this study identified a number of predictors of relationship quality for Hispanic ELL students, but did not test whether or not these same factors predicted relationship quality in the general populations. There were a number of reasons for this decision, including the fact that previous research has tended to exclude the Hispanic ELL group and focus only on other groups, that prior research has already

established predictors of relationship quality and associated outcomes in the general population (e.g., Connor, Son, Hindman, & Morrison, 2005; Hamre & Pianta, 2001; Jerome, Hamre, & Pianta, in press), and due to the fact that some predictors that were tested in the present models do not relate conceptually to the general population (e..g, teacher ELL/LEP certification; teacher's ability to speak Spanish, etc.). In addition, differences in how Spanish-speaking and English-speaking students were tested in this sample (e.g., TVIP versus PPVT) made it difficult to compare academic gains across groups. Despite these justifications for focusing primarily on the Hispanic ELL group, as a consequence, this study does not provide adequate information to determine whether predictors of relationship quality and relational predictors of academic and social outcomes for the Hispanic ELL population also hold true for the general population.

Future Research Directions

Hispanic ELL students, and ELL students in general, constitute a large and growing percentage of the school-age population in the US (Fix & Passel, 2003; Meyer, Madden, & McGrath, 2005), and it is essential that research begin to identify both risk and protective factors within this population. Future studies should be developed to look specifically at Hispanic ELL populations, with a focus on important constructs that are often not included in educational research on the general population, such as levels of acculturation. Developing valid measures of such construct will also be a challenge for future work in this area.

Future research should also focus on identifying effective interventions and educational practices for this population, in order to ensure that our schools are providing adequate educational experiences and mental health support for Hispanic ELL students. If

teacher-child relationships are indeed an important component of early childhood education for Hispanic ELL students, as is suggested by past research and by current findings, more research is needed to determine what classroom practices can improve the quality of these interactions. For example, this study found that Hispanic ELL students with more sensitive teachers experience closer relationships, and therefore are more likely to have better academic and social outcomes. Interventions aimed at improving teacher sensitivity, particularly toward Hispanic ELL students, may be an advantageous classroom intervention.

Having a well validated, child-level, observational measure that is specifically designed to look at the quality of teacher-child relationships would be a valuable addition to future studies in this area. Although there is ample research supporting the use of teacher-reports of relationships (e.g., Hamre & Pianta, 2002), including an observational measure of relationship quality would provide an even more compelling argument for the importance of these relationships.

Conclusions

Teacher-child relationships play an important role in early childhood education, a finding that has been consistently supported by previous research (Connor, Son, Hindman, & Morrison, 2005; Hamre & Pianta, 2001; Hughes & Kwok, 2007; Ladd, Birch, & Buhs, 1999; Pianta, 2006; Pianta, Hamre, & Stuhlman, 2003; Pianta, Steinberg, & Rollins, 1995; Ridley, McWilliam, & Oates, 2000; van Ijzendoorn, Sagi, & Lambermon, 1992). The present study examined the role of teacher-child relationships specifically in Hispanic ELL populations, and found that these relationships are also important in fostering good social and academic outcomes for this growing population of

students. The ability to speak English upon entry to preschool has significant effects on a child's ability to succeed, both academically and socially. This study supports the idea that Hispanic children who have limited English language proficiency in preschool are at risk for forming less close relationships with teachers than are their Hispanic English-speaking peers. In addition, poorer relationships with teachers put these children at greater risk for poorer social and academic outcomes.

Results of this study highlight the importance of both language and relationship quality for Hispanic ELL students. There is likely a reciprocal relationship between a child's language ability and teacher-child relationship quality. For example, results show that children who have poorer English-language ability in the fall of preschool are less likely to form optimal relationships with their teachers. Results also show that poorer relationships with teachers are associated with fewer gains on language tests. It could be that children who have limited English proficiency have more difficulty forming relationships with teachers, and that the absence of close and supportive relationships, in turn, provides fewer opportunities for subsequent language development. In this way, children who have poor language ability and poor relationship quality with teachers might be less likely to experience language gains. Children who enter school with poor English-language abilities but who nevertheless form close relationships, which promote English language use, might be more likely to experience positive academic gains.

An important finding from this study is that certain characteristics of classrooms, particularly having a teacher who is highly aware of and responsive to student needs, have the potential to improve student-teacher relationships and to promote the beneficial outcomes associated with these relationships. Because Hispanic ELL students are at

increased risk for a number of deleterious social and educational outcomes (e.g., Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003; Rumberger, 2004; Regalado, Goldenberg, & Appel, 2001), it is especially important to foster high quality relationships between these students and their teachers. Ensuring the highest quality relationships between Hispanic ELL students and their teachers is one important step in creating an educational system that is both fair and appropriate for this expanding group of students.

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