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## Retention of Hispanic/Latino students in first grade: Child, parent, teacher, school, and peer predictors

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### Abstract

A sample of 283 Hispanic children with literacy performance at entrance to first grade below the median for their school district was studied as part of a larger research project on the predictors of grade retention in grade 1. Following retention decisions, 51 Hispanic students were retained in first grade. Low literacy skills, being young at entrance to first grade, low ego resilience, low support in the teacher–student relationship, and parents' low sense of responsibility for their children's educational outcomes predicted retention decisions. Hierarchical logistics regression investigated the contribution of six categories of variables (academic competencies; socio-demographic characteristics; social, emotional, and behavioral adjustment; resiliency, school context; and home environment) to retention. Controlling for literacy, only being young for grade and parents' low sense of responsibility for their children's adjustment to school made a direct contribution to retention. Early literacy skills were higher for children enrolled in bilingual classrooms than for children in non-bilingual classrooms. Implications for educational policy are discussed.

### Keywords

Hispanic; Latino; Grade retention; Achievement; Elementary students

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Although Hispanic/Latino (H/L) children have made gains on several key indicators of educational attainment in the past 20 years, significant gaps in academic performance between H/L and White (non-H/L) students remain. According to the U. S. Department of Education's National Center for Educational Statistics report (2003), H/L students are more likely to be retained in grade than are White students and have the highest percentage of non-school completion of any ethnic group. In 1999, 13% of H/L students in K-12th grade had repeated at least one grade, compared to 9% of White and 18% of Black students.

The finding that H/L children are more likely to be retained in grade than are White children takes on added meaning in light of empirical research that documents an association between grade retention and lower subsequent achievement, including non-completion of school (for reviews see Holmes, 1989; Jimerson, 2001). Grade retention refers to a student repeating a grade after spending an academic year in that grade. The strong association between repeating a grade and dropping out of school before graduation remains after statistical adjustments for pre-retention differences (Alexander, Entwisle, & Dauber, 2003; Grissom & Shepard, 1989; Holmes, 1989). Although some studies report positive effects of grade retention on achievement and behavior (Pierson & Connell, 1992), many well designed studies utilizing controls for pre-retention differences document a range of negative effects (Meisels & Liaw, 1993; Pagani, Tremblay, Vitaro, Boulerice, & McDuff, 2001; Reynolds, 1992). Jimerson's

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(2001) comprehensive meta-analysis concluded that retention has generally negative average effects on both academic and psychosocial functioning. Furthermore, retention in first grade appears to have more negative long-term effects than retention in later grades (Pagani et al., 2001).

To our knowledge, no prospective study utilizing well-matched controls has investigated the effect of grade retention on a large sample of H/L children from multiple informant sources. White students are the majority of students in several studies (Jimerson, 2001), African-American students in others (Alexander et al., 2003; McCoy & Reynolds, 1999). When H/L students have been included in studies, their numbers were too few to conduct within-Hispanic group analyses of relationships between retention and child outcomes. Reynolds (1992) found that H/L students fared worse than African-American children following retention in first grade, but with only 10 retained H/L students, these results must be interpreted with caution.

### **Predictors of grade retention**

A number of studies have investigated factors that predict grade retention (Alexander, Entwisle, & Dauber, 1994; Beebe-Frankenberger, Bocian, MacMillan, & Gresham, 2004; Byrnes & Yamamoto, 1985; Dauber, Alexander, & Entwisle, 1993; Jimerson, Carlson, Rotert, Egeland, & Sroufe, 1997; Mantzicopoulos, 2003; Meisels & Liaw, 1993). These studies document that low academic achievement is the most consistent predictor of grade retention in the elementary grades. Because achievement is correlated with many other factors that also predict grade retention, it is important to investigate factors that predict grade retention independent of the effect of low achievement. Recent studies on the correlates of grade retention have either compared retained students to similarly low-achieving comparison students (Beebe-Frankenberger et al., 2004; Jimerson et al., 1997) or statistically controlled for achievement or cognitive ability differences between retained and promoted students (Dauber et al., 1993; Mantzicopoulos, 2003; McCoy & Reynolds, 1999). Among these studies, the most consistent predictors of being retained in grade are being male (Dauber et al., 1993; Jimerson et al., 1997), young for grade (Mantzicopoulos, 2003), low parental involvement in school (Jimerson et al., 1997; Mantzicopoulos, 2003; McCoy & Reynolds, 1999), conflict in relationships with teachers (Pianta, Steinberg, & Rollins, 1995), and behavior problems (Jimerson et al., 1997; Mantzicopoulos, 2003). Results are inconsistent for parental SES, with some researchers finding a negative association between SES and grade retention (Dauber et al., 1993) after controlling for student ability or achievement, and others failing to find such an association (Beebe-Frankenberger et al., 2004; Jimerson et al., 1997).

Studies on predictors of grade retention in the early grades have generally included various ethnic groups but have not reported whether the associations between predictor variables and retention were of similar magnitude for different ethnic groups. Given the over-representation of Hispanic/Latino students in statistics on grade retention and the paucity of data to support the use of grade repetition for academic improvement, it is important to determine factors that predict grade retention in the early grades for H/L students.

To our knowledge, only one published study has investigated predictors of grade retention for H/L samples (Cosden, Zimmer, & Tuss, 1993). These investigators studied age of entry to kindergarten and gender as predictors of kindergarten retention in Anglo and Latino (their designations) populations. Their study included 68 retained Latino kindergartners and 895 promoted Latino kindergartners in three southern California school districts. Overall, the retention rate was 7%, an odds ratio of about 1:13 of being retained. The odds of being retained increased for being young and male, but school district demographics and practices moderated these associations. Latino children were likely to be younger at entry to school than were White children, presumably because White parents were more likely than Latino children to delay school entrance. Furthermore, these ethnic group differences in age at entry contributed to the

higher prevalence of grade retention for Latino children, relative to White children, especially in schools where Latinos were in the minority. Because no individual child, school, teacher, or parent variables were investigated in their study, the conclusions are limited to district and overall sample associations between age, ethnicity, and retention in kindergarten.

A detailed investigation of predictors of grade retention among H/L children would fill an important gap in the retention literature. Garcia Coll et al. (1996) and Johnson et al. (2003) have argued that studies conducted within specific cultural contexts are required to study within-group differences that account for children's developmental outcomes. Children categorized as Hispanic or Latino differ considerably on variables such as acculturation, language, and SES that are related to academic performance and that may be associated with grade retention, above the effect of achievement. The current study involves a pool of H/L students large enough to permit testing of models that may be different for important subgroups within the H/L sample, specifically English and Spanish Language proficiency, acculturation, participation in educational programs for bilingual learners, and the percentage of Hispanic students in a school.

The purpose of this study is to investigate predictors of being retained following first grade in an academically at-risk sample of H/L youth. We are particularly interested in variables that contribute to grade retention status above children's academic competencies. Specifically, we are interested in the contribution of five categories of variables to retention decisions, above student academic competencies. These categories are socio-demographic characteristics; social, emotional, and behavioral adjustment; academic resiliency; school context; and home environment. The variables included in each category and descriptive information for the study sample are found in Table 1. These categories were selected to represent broad dimensions known to be predictive of school success among elementary grades or to have particular relevance to H/L students.

The inclusion of variables most consistently investigated in previous grade retention studies (e.g., achievement, intelligence, economic adversity, gender, age, parent involvement, mobility, relationship with teachers, and behavioral adjustment) permits a comparison of results from this study with results from studies with mixed ethnic or predominantly Caucasian or African-American samples. Also investigated are variables less frequently investigated in the retention literature, specifically effortful control and ego resilience. Effortful control is defined as "the efficiency of executive attention, including the ability to inhibit a dominant response and/or to activate a subdominant response, to plan, and to detect errors" (Rothbart and Bates, in press, cited by Eisenberg et al., 2005). A strong literature supports the importance of effortful control to early school success (Eisenberg et al., 2003; Kochanska & Knaack, 2003; Spira & Fischel, 2005). The ego resilient individual is resourceful and flexible, adjusts to changes in the environment quickly, and recovers quickly from stress. High ego resilient children are agreeable and socially competent (Block & Block, 1980; Cumberland-Li, Eisenberg, & Reiser, 2004; Huey & Weisz, 1997).

Variables of particular relevance to H/L students include acculturation, placement in bilingual education classrooms, and the percentage of H/L students in the school. Relevant aspects of acculturation include cultural characteristics of one's social group, time spent in the United States, and language use (Balcazar, Casto, & Krull, 1995). According to a recent study conducted by the U.S. Department of Education (2003), H/L students who are born in the United States have a lower drop out rate than do H/L students not born in the United States. Among H/L students participating in an academic development program, higher levels of acculturation predicted greater academic gains (Riggs & Greenberg, 2004). Limited English proficiency and a belief that teachers, not parents, are responsible for making educational decisions about children (Chavkin & Williams, 1993) may reduce the likelihood that low

acculturated H/L parents would challenge the school's decision to retain a child in grade. Bilingual instruction is an important issue for Spanish-dominant children. In a recent study of several school districts, Spanish-dominant children placed in bilingual classrooms outperformed similar students in English-immersion programs over the course of their schooling (Thomas & Collier, 2002). As discussed above, H/L students were retained at a higher rate in schools in which H/L students constitute a minority of the student population (Cosden et al., 1993).

## Methods

### Sample

Participants were 283 (48.1% male) H/L children attending one of three Texas School districts (1 urban, 2 small city). Participants were drawn from a larger longitudinal study examining the impact of grade retention on academic achievement. A total of 503 H/L children were recruited into the larger study across two sequential cohorts in first grade during fall, 2001 and fall, 2002. Children were eligible to participate in the longitudinal study if they scored below the median score for their district on a state approved district-administered measure of literacy, administered in the child's dominant language, as assessed by the school district. Of those children eligible to participate in the study, written parental consent was obtained for 295 (59%). Children with and without consent differed on age, with non-consenters younger ( $t = 11.28$ ,  $df = 307.38$ ,  $p < 0.001$ ), and of Limited English Proficient (LEP) status, with LEP students more likely to participate (chi square = 13.03,  $p < 0.001$ ). Children with and without consent did not differ on gender (chi square = 0.851,  $p > 0.65$ ), or economic disadvantage (free or reduced lunch status; chi square = 5.66,  $p > 0.05$ ). Of these 295 children, two moved away prior to any assessments, the retention status for 10 could not be determined because the child moved after some assessment and could not be located, 51 were retained in 1st grade, and 232 were promoted. Thus, results are reported for the 283 children with data on retention status. Table 1 reports descriptive data for all study variables for the 283 children.

Not all subjects have data on all variables. By source, more data were missing for parent-provided data (45%) than for data by any other source (Teacher, 16% missing; District, 16% missing; peer, 18% missing; child performance data, 2% missing). Thus, in order to facilitate comparisons across analyses involving different sources of data, we used NORM (Schafer, 1999) to impute missing data, with the exception of missing parent data. It was deemed inappropriate to impute missing parent data due to the magnitude of missing data and to the likelihood that parent data were not missing at random.

Of the 158 parents who responded to home-school relationship variables, 128 provided information on where they spent their early life: only in the US (71), US and some time in Latin America or the Caribbean (17), only in Latin America or the Caribbean (33), and mostly or equally in Latin America or the Caribbean (7).

### Data collection procedures

During the late Fall and early Spring of first grade, bilingual research staff individually administered the Universal Nonverbal Intelligence Test (Bracken & McCallum, 1998), the Woodcock-Munoz Language Survey (WMLS, Woodcock & Munoz-Sandoval, 2001), and either the *WJ-III Tests of Achievement* (WJ-III; Woodcock, McGrew, & Mather, 2001) or *Batería Woodcock-Munoz: Pruebas de aprovechamiento-Revisada* (Batería-R; Woodcock & Munoz, 1996). The choice of the WJ-III or the Batería was based on the child's performance on the WMLS (see below). Children's effortful control (Kochanska, Murray, & Coy, 1997) was assessed in a second individual session at school. Sociometric (peer) assessments were conducted during the Spring semester. Teacher-report and parent-report data were collected

via questionnaires sent to teachers and parent during April and May. Teachers and parents received \$25.00 for completing and returning each student questionnaire. Parents received both English and Spanish language versions of all correspondence mailed to them, including the questionnaire. Spanish assessments were translated and back-translated using standard translation procedures. Bilingual research staff attempted to contact non-responding parents by phone to encourage them to return the questionnaire and to offer the option of completing the questionnaire via a telephone interview. Only five parents opted for the telephone interview.

### Determination of language for testing

The WMLS was administered to determine language for all child assessments. It has two forms (English and Spanish) that are individually administered, each consisting of four subtests that provide a broad sampling of proficiency in oral language, reading, and writing. The test yields an overall measure of language competence and a Cognitive-Academic Language Proficiency (CALP) score for English and Spanish. The internal consistency reliability estimates, as reported in the manual, range from 0.94 to 0.97 for the Broad Ability scores. Children were tested in the language in which their CALP score was higher. If English and Spanish CALP scores were identical, the child was tested in English. A total of 99 children were tested in Spanish.

## Measures

### Academic competencies

**Cognitive ability**—Children were individually tested at school with the Universal Nonverbal Intelligence Test (UNIT; Bracken & McCallum, 1998). The UNIT is administered with the use of culturally and linguistically universal hand and body gestures without any use of receptive or expressive language. It measures general intelligence by measuring complex memory and reasoning abilities. We used the abbreviated version of the UNIT, which yields a full scale IQ that is highly correlated ( $r = 0.91$ ) with scores obtained with the full battery and which has demonstrated good test-retest and internal consistency reliabilities as well as construct validity (Bracken & McCallum, 1998; Hooper, 2003).

**Achievement (reading and math)**—The WJ-III Tests of Achievement (Woodcock et al., 2001) is an individually administered measure of academic achievement. We used the WJ-III Broad Reading W Scores (Letter-Word Identification, Reading Fluency, Passage Comprehension subtests) and the WJ-III Broad Math W Scores (Calculations, Math Fluency, and Math Calculation Skills subtests). W scores are based on the Rasch measurement model, yielding an equal interval scale. Extensive research documents the reliability and construct validity of the WJ-III and its predecessor (Woodcock & Johnson, 1989; Woodcock et al., 2001).

The *Batería Woodcock–Muñoz: Pruebas de aprovechamiento-Revisada* (Woodcock & Munoz, 1996) is the comparable Spanish version of the *Woodcock–Johnson Tests of Achievement-Revised* (WJ-R; Woodcock & Johnson, 1989), the precursor of the WJ-III. The Woodcock Compuscore (Woodcock & Muñoz-Sandoval, 2001) program yields W scores for the *Batería-R* that are comparable to W scores on the WJ-R. The Broad Reading and Broad Mathematics W Scores were used in this study. For descriptive purposes, we note that the mean age standard scores for Broad Reading and Broad Math were 99.05 (S.D. =20.32) and 98.68 (S.D. =13.85), respectively.

**Teacher perception of achievement**—Teachers were asked to describe child-participants' academic performance on 3 items using a Likert-type scale ranging from 1 (almost never) to 6 (almost always). The items were “Performing academically at grade level”, “Able



to read grade level material and answer questions about what he/she has read” and “Able to solve grade level math problems”. The internal consistency (alpha) of the scale for this sample was 0.94.

**Teacher-rated engagement**—Teachers rated children’s classroom engagement on a 10-item scale, using a 1–5 rating scale (Hughes & Kwok, 2005). Example items include: “Is a reliable worker”, “Perseveres until the task is finished”, and “Sets and works toward goals”. The internal consistency of these 10 items for our sample was 0.95.

**Socio-demographic variables**—Child’s age at entrance to first grade, gender, and eligibility for free or reduced lunch (coded 0 if not eligible and 1 if eligible) were obtained from school records.

### **Social, emotional, and behavioral adjustment**

**Peer ratings**—In individual interviews, research assistants asked children to nominate as few or as many classmates as they wished who could best play each of several parts in a class play (Masten, Morison, & Pelligrini, 1985). Of interest to this study are the aggression (start fights, say mean things, or hit others), hyperactive (do strange things and make a lot of noise; they bother people who are trying to work), and emotional symptoms (cry a lot and look sad) items. Each child in the classroom received a score on each item based on the number of nominations received. Children were also asked to nominate as many children as they wished whom they “liked the most” and were asked to rate each child in the classroom on a 1–5 scale with respect to their liking for the child. A rating of “1” was considered equivalent to a liked-least nomination score (Asher & Dodge, 1986) for purposes of computing social preference scores (Coie, Dodge, & Coppotelli, 1982). All sociometric scores were standardized within classrooms. To assure reliability of scores, sociometric scores were computed only for children located in classrooms in which more than 40% of classmates participated in the sociometric assessment (Terry, 1999). Procedures similar to these have demonstrated good test–retest reliabilities and construct validity (Hughes, 1990).

**Teacher ratings**—Teachers completed the Strengths and Difficulties Questionnaire (SDQ, Goodman, 2001), a brief (25-item) screening measure for psychopathology. Each item is rated on a 0–2 scale (i.e., not true, somewhat true, certainly true). The SDQ yields five scales (conduct problems, hyperactivity, emotional problems, peer problems, and prosocial), each consisting of 5 items. All but the peer problems scale were used in this study. The SDQ has good evidence of internal consistency, factor structure, and predictive validity (Goodman, 2001). To reduce the number of variables in the analyses, composite variables were developed for aggression, hyperactivity, emotional symptoms, and peer acceptance. In each case, the composite was computed as the mean of the standardized scores for the relevant SDQ scale and the corresponding peer nomination score. For the peer acceptance, the prosocial scale of the SDQ and the peer social preference score were used. All correlations between the teacher and peer ratings were statistically significant at  $<0.001$ .

### **Academic resiliency**

**Effortful control**—The voluntary or effortful aspects of children’s self-regulation were assessed using 4 observational tasks assessing motor inhibition from a behavioral battery designed by Kochanska et al. (see Kochanska et al., 1997; Murray & Kochanska, 2002). In each of the 4 tasks (Walk-a-Line, Telephone Poles, Star, and Circle) children were asked to voluntarily inhibit their fine or gross motor behavior by completing each of the tasks as slowly as possible. The duration (in seconds) that it took children to complete tasks represented scores for effortful control. In our sample, this measure of effortful control showed good factorial

validity and was moderately correlated with measures of achievement and externalizing problems (Liew & Hughes, 2005).

**Ego resiliency**—The measure of ego resiliency was derived from a 15-item scale of ego control and ego resiliency adapted from the California Child Q-Set, a language simplified personality inventory for use by nonprofessionals (Caspi, Block, Block, & Klopp, 1992). Exploratory and Confirmatory factor analysis conducted on participants in the larger study identified four factors: prosocial, antisocial, ego resilient, and ego brittle. Because the ego resilient and ego brittle factors were moderately correlated, items on both factors were combined to form a single ego resilient scale. Example of positive items include resourceful in initiating activities; self reliant; and persistent. Example of negative items include rigidly repetitive, falls to pieces under stress, and emotionally labile. The resulting alpha for this scale for the study sample was 0.85.

**School context**—Bilingual status (0= non-bilingual, 1=bilingual) and school percentage of Hispanic students were provided by the participating school district. Of the 106 children in bilingual classes, 98 were tested in Spanish.

**Teacher-rated support and conflict**—The 22-item Teacher Relationship Inventory (TRI; Hughes, Cavell, & Willson, 2001) is based on the Network of Relationships Inventory (NRI; Buhrmester & Furman, 1987), a child-report measure of relationship quality. Teachers indicate on a 5-point Likert-type scale their level of support (16 items) or conflict (6 items) in their relationships with individual students. In our sample, internal consistency reliabilities (alphas) were 0.92 for Support and 0.94 for Conflict. The TNRI has good evidence of construct validity (Hughes & Kwok, 2005; Meehan, Hughes, & Cavell, 2003).

### Home environment

**Acculturation**—Parents completed a 5-item acculturation scale (Balczar, Castro, & Krull, 1995) that asks parents to report on their use of English and Spanish for speaking and reading, the country in which they spent their early life, the ethnicity of members of their social network, and their attitude toward being H/L. In previous research the scale has predicted health-related attitudes and outcomes (Balczar et al., 1995). The internal consistency in our sample was 0.78.

**Parent involvement in education**—The parent report of involvement scale consisting of 23 items were adapted from the Parent-Teacher Involvement Questionnaire (Kohl, Lengua, & McMahon, 2000) and 6 additional items covering parent perceived parental self-efficacy and roles. Exploratory and confirmatory factor analysis on participants in the larger study found good support for each of the four theoretically derived dimensions of parent involvement—Positive Perceptions about School, Communication, Parent-Teacher Shared Responsibilities, and Parent-School-Based Involvement (Wong, 2005). Reliability analyses revealed good internal consistency for the four subscales (ranging from 0.72 to 0.93).

**Parent expectations for achievement**—Parents were asked to indicate the highest level of education they expected their child to complete, from elementary school (1) to doctoral or professional degree (10). This single question has been found to make a unique contribution to the prediction of children's achievement (Ma, 2001).

### Design and analysis

The focus of the design was to discern important predictors of retention for H/L first grade children. Hierarchical logistic regression (Cohen, Cohen, West, & Aiken, 2003) was employed with SPSS 13.0 (SPSS Inc., 1989–2004). The effects of five academic competencies were

examined as a block to establish their effects on retention. These were Unit IQ, Broad Reading, Broad Math, and teacher-rated engagement and achievement. Then, each variable in each of the five additional variable sets of interest was added singly in a second block to determine its partial contribution to retention beyond the prediction of the academic competencies block, as well as the total contribution of that block. Statistical tests of improvement in Nagelkerke  $R^2$  were evaluated with the chi square statistic for the regression by adding the second block (or individual predictor) to the first block of predictors. Degrees of freedom for each chi square were based on the number of predictors for the model or for the block.

Parent data were of necessity, considered separately since there was a significant amount of missing data. It was not reasonable to impute such data under an assumption of missingness-at-random (MAR), required for multiple imputation. The data set included 158 children, with only 27 missing data points within the data set. Multiple imputation using NORM (Schafer, 1999) was conducted within the data set using all variables to estimate the missing data points in the parent data. The imputed scores from the previous analysis were retained to maintain a consistent data set with respect to the cognitive and reading variables.

## Results

Summary statistics for each variable in the study are presented in Table 1 along with the correlation with retention (either a point biserial for interval variables or Pearson association for binary variables). Academic competency variables correlating significantly ( $p < 0.05$ ) with retention included Broad Reading, teacher-rated achievement, and teacher-rated engagement. For each, retained children had a lower score. For socio-demographic characteristics, only age was correlated significantly with retained students younger. For academic resilience factors, ego resilience correlated significantly with retention, retained children scoring lower. No social/emotional/behavioral measures correlated significantly with retention. Among school context variables only teacher-rated support was significantly correlated, lower for retained students.

The results of the hierarchical logistic regression predicting retention for cognitive and achievement, socio-demographic, academic resiliency, social/emotional/behavioral, and school context variables are given in Table 2. The first block variables of Reading and Math W scores, teacher engagement and achievement ratings, and UNIT IQ score produced a significant ( $p < 0.001$ ) prediction with  $R^2$  of 0.275. Individually, reading and the teacher ratings of achievement and engagement were individually significant predictors ( $p < 0.001$ ), with lower scores associated with retained children for each.

The additional contribution of the socio-demographic block to the first block produced a significant improvement in  $R^2$  of 0.056,  $p < 0.01$ . The only individual predictor in this block that produced significant increases in  $R^2$  was age ( $p < 0.005$ ), with retained children younger than promoted children.

The academic resiliency measures of ego resiliency and effortful control did not produce a statistically significant increase in  $R^2$  ( $p > 0.76$ ), and neither ego resilience nor effortful control was individually predictive beyond the first block.

Child social, emotional, and behavioral variables did not contribute as a block ( $p > 0.63$ ), nor did any of the individual variables in the block. School context variables did not significantly improve prediction of retention ( $p > 0.88$ ), nor did any individual predictors in the block add significantly to  $R^2$ .



### Analyses involving sample with parent report data

Separate hierarchical logistic regressions of home environment variables, reported in Table 3, were conducted for the 158 children whose parents provided information on home–school variables. First we tested comparability of the sample with parent data on home–school variables and the sample of 125 children without parent data. The sample of 158 children with complete parent data on home–school variables did not differ multivariately from the 125 children whose parents provided only partial or no home–school responses ( $F = 1.71$ ,  $df = 5$ ,  $277$ ) on the cognitive and achievement variables employed as the first model for analyses.

The first block of predictors employed the same cognitive and achievement variables as included in the previous regressions. The  $R^2$  for these five variables was 0.307, slightly higher than the 0.275 in the full sample. The block of home environment variables increased  $R^2$  to 0.427, an increase of 0.120 ( $p < 0.002$ ). Among the individual predictors in the block, parent rating of shared responsibility for children’s education was significant ( $p = 0.01$ ), with parents of retained students reporting less responsibility for their children’s academic and behavioral performance in school.

### Supplementary analyses involving bilingual instruction

Given our findings concerning the pivotal role of early literacy in retention decisions and questions in the literature regarding effective school practices for language minority students (Thomas & Collier, 2002), we conducted supplementary analyses to further investigate the role of child bilingual class placement in early literacy. Children were placed by the schools in bilingual or non-bilingual (English only) programs by district placement procedures. The bilingual programs can be best represented as 80/20 Spanish/English language of instruction. Bilingual classroom placement overlapped the test language assessment status in our study. Specifically, of the 106 students in bilingual classes, 99 were tested in Spanish and 7 in English (based on children’s performance on the WMLS), while of the 184 non-bilingual students, 183 were tested in English and 1 in Spanish. First we examined whether bilingual class placement was associated with Reading. Children in bilingual classrooms had higher Reading scores than did children in English only classrooms ( $t = 5.402$ ,  $df = 149.96$ ,  $p < 0.001$ ).

The superior reading performance of children in bilingual classrooms is a reflection of the greater language proficiency of children tested in Spanish. Specifically, children tested in Spanish had a mean difference score on the *Woodcock–Munoz* in Spanish over English of 1.74 points, a highly significant difference ( $t = 24.05$ ,  $df = 90$ ,  $p < 0.001$ ), with mean Spanish score of 4.19 (S.D. = 0.80) and English score of 2.46 (S.D. = 0.85). The 9 students given the WMLS and tested in English had a difference of English over Spanish of only 1.17 points ( $t = 3.13$ ,  $df = 8$ ,  $p < 0.02$ ), with mean Spanish score of 1.78 (S.D. = 1.06) and English score of 2.94 (S.D. = 1.07). The difference in the absolute magnitude of the Spanish–English difference for those 98 children administered the WMLS was significant in a repeated measures analysis with Spanish–English scores as the within-subject factor and language tested in as the between-subject factor; the interaction  $F$ -statistic was 126.12 ( $df = 1, 100$ ;  $p < 0.001$ ).

### Discussion

The purpose of this study was to investigate predictors of being retained following first grade in an academically at-risk sample of H/L youth. We were especially interested in comparing results obtained with this sample with results from studies conducted with mixed or predominantly African-American or White-Non-Hispanic samples and in examining variables of particular relevance to H/L youth. First each variable’s unconditional association with retention was examined. Second, a series of hierarchical logistics regressions examined the

contribution of each of six classes of variables to retention, above the effects of children's academic competencies.

### Unconditional analyses

The findings regarding the unconditional associations between predictors and retention contain several expected results. H/L children subsequently retained in first grade have lower literacy skills. Retained children are also young for grade, a finding consistent with results of research with non-H/L (Mantzicopoulos, 2003) and H/L samples (Cosden et al., 1993). Retained children were rated by their teachers as less engaged, achieving at a lower level in the classroom, less ego resilient, and as experiencing less teacher support, and their parents reported a lower sense of shared responsibility for their child's success in school.

The unconditional results are, perhaps, more noteworthy for the lack of an association with retention for many predictors commonly found in previous studies. Retained children were no more likely to be male, to be eligible for free or reduced lunch, to perform lower on a measure of cognitive reasoning, to have lower math skills, to exhibit social, emotional, or behavioral problems, or to experience conflict in their relationships with teachers. The failure to replicate findings with respect to predictors of retention reported in studies with low achieving, non-H/L samples suggests the causes of early school failure may differ for H/L and non-H/L students. The lack of statistically significant associations between measures of child externalizing problems (e.g., aggression and teacher-rated conflict) and grade retention may be a result of generally low levels of conduct problems among H/L elementary children, relative to African-American children (Graham & Juvonen, 2002; Hughes, Gleason, & Zhang, 2005).

The lack of an association between eligibility for free or reduced lunch and retention may be explained by the high percentage (81.7) of our sample whose family incomes made them eligible for free or reduced lunch, thereby restricting variance, and due to the lack of sensitivity of this index to levels of economic adversity.

UNIT IQ scores were not predictive of grade retention. The UNIT developers report correlation coefficients between the UNIT memory IQ and reasoning IQ and Woodcock-Johnson-Revised (WJ-R) broad cognitive ability score of 0.52 and 0.63, respectively when administered to 104 1st-10th grade students (Reed & McCallum, 1995). In our H/L sample, the correlation between the UNIT IQ and Broad Reading and Broad Math were substantially smaller (0.25 and 0.14, respectively). Although the sample in the present study is relatively low achieving, the failure to find an association between the UNIT and grade retention is unlikely due to a restriction of range of ability, as the sample's UNIT IQ ( $M=94$ ;  $S.D.=13.4$ ) is within the average range and has adequate dispersion. Together, these findings suggest further research is needed on the validity of the UNIT with H/L samples.

### Conditional analyses

When the five academic competency variables were entered as a block, in Model 1, only Broad Reading made a direct contribution to grade retention. The finding that teacher perceptions of children's classroom learning and engagement did not make a direct contribution to retention is explained, in part, by the fact that teacher perceptions are substantially correlated with children's measured reading competence ( $r=0.58$  for teacher perceptions of learning and 0.44 for teacher perceptions of engagement,  $p<0.001$ ). Similarly, because ego resilience and supportive relationship with one's teacher are significantly correlated with children's Broad Reading scores ( $r=0.39$  and 0.21, respectively;  $p<0.01$ ), these variables may influence grade retention indirectly, through their direct effect on achievement.

In a series of hierarchical logistical regressions, theoretically important sets of variables were entered in a second block, after the academic competence block. Beyond academic competencies (primarily Reading), only age and parents' sense of shared responsibility for their child's learning and behavior in school made unique contributions to the prediction of retention. Children who enter public school younger than classmates perform less well than their classmates academically and socially, at least in the early grades (Stipek & Byler, 2001). H/L children often start school younger than do Caucasian children (Cosden et al., 1993), and H/L parents are less likely to delay school entrance based on low readiness skills (Diamond, Reagan, & Bandyk, 2000). Furthermore, H/L students are less likely to have attended an academically oriented preschool than are Caucasian or African-American children (Magnuson & Waldfogel, 2005). Thus, H/L students may have had less opportunity to develop early literacy skills that predict success in first grade classrooms.

Perhaps the most important finding is the negative association between parents' sense of shared responsibility for their child's academic and behavioral success in school and grade retention. Items on this scale ask parent the degree to which they believe parents are responsible for solving the child's learning and behavior problems at school, making sure the child gets homework done, and helping the child with school work at home. The scale also asks parents the degree to which they are prepared to help the child and whether they make a difference in the child's success at school. In the larger study of which this study is a part, Wong (2005) found that H/L parents reported lower sense of shared responsibility than did African-American or Caucasian parents. Furthermore, among H/L parents, Spanish-speaking parents reported a lower sense of shared responsibility than did English-speaking parents. Language barriers, cultural expectations, and lack of familiarity with American schools may contribute to parents' low self-efficacy for assisting their children in school. Perhaps teachers perceive children of parents with a low sense of shared responsibility as less likely to receive supports at home that would allow them to succeed if promoted. Thus, they may recommend that these children repeat the grade. It is also possible that parents with a low sense of shared responsibility are less likely to question the school's recommendations for retention (Chavkin & Williams, 1993).

### **Bilingual placement**

Thomas and Collier (2002) concluded that Spanish-dominant students in Spanish-emphasis programs clearly outperform similar students in English-immersion programs over the course of their schooling. Our results appear to support the initial differences that contribute to this conclusion. Students who are in 80/20 bilingual programs in first grade (and who are overwhelmingly Spanish dominant) have more developed language proficiency and literacy skills than do their predominantly English-dominant peers in non-bilingual classrooms. These findings are consistent with an extensive literature documenting the importance of good entry literacy and vocabulary background to progress in reading and of the importance of using the child's home language for teaching early reading (August, Carlo, Dressler, & Snow, 2005; Biemiller, 2003; Nagy, McClure, & Montserrat, 1997). Because Spanish speaking parents often believe that the ability to communicate in English is very important to children's early school success (Piotrkowski, Botsko, & Matthews, 2000), they may refuse to place their children in bilingual preschool or kindergarten classrooms. Schools and early childhood educators need to educate parents as to the primary importance of strong language proficiency in Spanish or English, especially vocabulary knowledge, to early school success.

### **Limitations and future directions**

Because the rate of missingness was much higher for parent data (45%) than for data obtained from other sources, and because it could not be assumed that parent data were missing at random, information about the home environment was analyzed in a separate hierarchical logistic regression that included only those 158 children with parent data. Thus, results of the

analyses involving parent data may not generalize to all H/L parents of low achieving students. The fact that parents with and without parent data did not differ on a number of demographic and child literacy variables reduces but does not eliminate this concern.

This study is limited in geographic circumstance and immigration patterns (e.g., Cuban and Puerto Ricans were not represented in our sample). The district policies regarding retention varied from each other, but separate district analyses would produce results based on too small samples for stable estimation or interpretation, so that results reported here must be considered indicative but not necessarily identical across school districts or even schools.

This study does not address the issue of whether or not the retention decision was an appropriate one for children. This issue will be addressed when there are sufficient annual observations for individual growth curve modeling.

### Policy implications

These results have several policy implications. Being young for grade is an independent predictor of grade retention, above the effect of low literacy. However, delaying public school entrance for young H/L children is unlikely to improve their academic readiness in the absence of participation in a high quality preschool program (Magnuson & Waldfogel, 2005). H/L children are less likely than are African-American or Caucasian children to enroll in preschool programs, and the programs in which they enroll are less likely to have an academic focus (Magnuson & Waldfogel, 2005). Increasing the availability of affordable, quality preschool programs for H/L children represents an important societal need. Children who begin kindergarten younger than their grade mates might also benefit from participation in intensive literacy training the summer before first grade. Vocabulary-intensive training in the students' first language is an effective strategy for enhancing early literacy (August et al., 2005). Finally, programs that enhance parents' sense of efficacy and responsibility for helping their children in school, such as those detailed by Bohan-Baker and Little (2004), are also needed.

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**Table 1**Descriptive statistics for all study variables ( $N=283$ )

	Mean	S.D.	Correlation with retention <sup>a</sup>
Academic competence			
Unit IQ	94.0	13.40	-0.025**
Reading W	439.4	31.80	-0.380**
Math W	458.9	14.90	-0.086
Teacher-rated engagement	3.6	1.26	-0.220**
Teacher-rated achievement	4.2	1.42	-0.274**
Socio-demographic characteristics			
Economic disadvantage	82.0		0.028
Gender	51.9		0.064
Age	6.6	0.39	-0.155**
Personality resiliency			
Effortful control	<0.1	0.86	-0.084
Ego resiliency	3.7	0.79	-0.190*
Social, emotional, and behavioral			
Aggression	-0.1	0.87	-0.054
Hyperactivity	-0.1	0.91	-0.031
Emotional problems	-0.1	0.74	0.014
Peer acceptance	0.1	0.76	-0.035
School context			
Bilingual classroom	36.7		-0.109
% Hispanic students in classroom	53.8	35.8	-0.090
Teacher-rated support	3.8	0.91	-0.127*
Teacher-rated conflict	1.7	0.69	0.061
Home environment variables ( $N=158$ )			
Mobility (% mobile)	14.6		0.010
Parent acculturation	3.2	1.04	-0.014
Parent-school:			
Communication	2.5	0.67	-0.027
Involvement	2.2	0.56	-0.108
Shared responsibilities	4.2	0.56	-0.246*
Positive perceptions	4.1	0.69	-0.143
Educational expectation	7.3	2.49	0.070

<sup>a</sup>Contingency coefficient for binary variables.\*  $p < 0.05$ .\*\*  $p < 0.01$ .

**Table 2**  
Hierarchical logistic regression analyses predicting retention from child and school variables

Model <sup>a</sup>	<i>b<sup>b</sup></i>	<i>s(b)</i>	$\chi^2 (1)$	Sig.	$R^2$ total	(df) <sup>c</sup>	Sig. $\Delta\chi^2$ (df)
Academic competence					0.275	(5)	
Unit IQ	0.008	0.014	0.957				
Reading W	-0.044	0.010	0.000				
Math W	0.012	0.013	0.324				
Teacher-rated engagement	-0.139	0.203	0.496				
Teacher-rated achievement	-0.064	0.203	0.713				
Socio-demographic characteristics					0.331	(8)	0.008 (3)
Economic disadvantage	0.317	0.472	0.502				
Gender	-0.227	0.358	0.527				
Age	-1.514	0.522	0.004				
Personality resiliency					0.227	(7)	0.766 (2)
Effortful control	-0.356	0.229	0.120				
Ego resiliency	-0.138	0.288	0.633				
Social, emotional, and behavioral					0.287	(9)	0.630 (4)
Aggression	-0.251	0.200	0.210				
Hyperactivity	-0.087	0.190	0.646				
Emotional problems	0.029	0.229	0.900				
Peer acceptance	-0.071	0.232	0.760				
School context					0.280	(9)	0.890 (4)
Bilingual classroom	0.214	0.514	0.678				
% Hispanic students in classroom	0.001	0.007	0.893				
Teacher-rated support	-0.111	0.295	0.707				
Teacher-rated conflict	0.005	0.225	0.981				

*N* = 283 for all regressions.

<sup>a</sup>Model 1 involves only variables in the Academic Competence block. Each of the other blocks was added hierarchically and sequentially to the Academic Competence block. Thus, all models except the Academic Competence model involved two blocks, with Academic Competence always the first block.

<sup>b</sup>For Model 1, the betas are based on simultaneous entry of all variables in Block 1. For all other models, the betas are for the individual variable added hierarchically to the Academic Competence block.

<sup>c</sup>The first  $R^2$  is after variables in the Academic Competence block are entered; subsequent  $R^2$ 's are the contribution of both Block 1 and the block associated with it.

**Table 3**

Hierarchical logistic regression analyses predicting retention from home environment

Model <sup>a</sup>	<i>b</i> <sup>b</sup>	<i>s</i> ( <i>b</i> )	$\chi^2$ (1) Sig.	<i>R</i> <sup>2</sup> total ( <i>df</i> ) <sup>c</sup>	Sig. $\Delta\chi^2$ ( <i>df</i> )
Academic competence				0.307 (5)	
Home environment				0.427 (12)	0.035 (7)
Parent acculturation	-0.116	0.251	0.645		
Parent-school involvement					
Communication	0.022	0.369	0.953		
Positive perceptions	-0.553	0.342	0.105		
Shared responsibility	-1.196	0.466	0.010		
Home involvement	-0.600	0.502	0.232		
Education expectation	0.112	0.100	0.262		
Mobility of family	-0.213	0.678	0.753		

*N* = 158 for all regressions.

<sup>a</sup>Home environment block was hierarchical to the academic competence block (IQ, Reading W, Math W, teacher-rated achievement, teacher rated engagement).

<sup>b</sup>The betas are for the individual variable added hierarchically to the Academic Competence block.

<sup>c</sup>*R*<sup>2</sup> is after variables in the second block (home environment) are entered.