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Latino Students' Transition to Middle School: Role of Bilingual Education and School Ethnic Context

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Abstract

Participants were 204 academically at-risk Latino students recruited into a study when in first grade and followed for 9 years. Using piecewise latent growth curve analyses, we investigated trajectories of teacher-rated behavioral engagement and student-reported school belonging during elementary school and middle school and the association between trajectories and enrollment in bilingual education classes in elementary school and a change in school ethnic congruence across the transition to middle school. Overall, students experienced a drop in school belonging and behavioral engagement across the transition. A moderating effect of ethnic congruence on bilingual enrollment was found. A decline in ethnic congruence was associated with more positive trajectories for students previously enrolled in bilingual classes but more negative trajectories for non-bilingual students.

Keywords

engagement; school belonging; Latino students; transition to middle school; growth curve modeling

Of the four largest ethnic groups of students in U.S. schools, Latino students have the lowest rate of high school completion. In 2009, 17.6% of Latinos ages 17–24 years old had left

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school without earning a high school diploma or alternative certificate, compared to 5.2% of White and 9.3% of African Americans (Chapman, Laird, Ifill, & KewalRamani, 2011). The disparity between Latino and other racial and ethnic groups in high school completion is an issue of urgent concern for educators, policy makers, and the general public. Individuals who lack a high school degree are at increased risk of spending their lives periodically unemployed, on government assistance, having health problems, and cycling in and out of prison (Alliance for Education, 2007). Given the over-representation of Latino students among dropouts, it is important to understand factors that buffer Latino students from early school leaving. Drawing from sociocultural theory, the current study tested the main and interactive effects of students' enrollment in bilingual education in elementary school and changes in school ethnic composition across the transition to middle school on Latino students' school engagement.

Contemporary theories of school dropout view leaving school prior to graduation as the final stage in a gradual process of disengagement from school that begins as early as elementary school and escalates in the middle school grades (Alexander, Entwisle, & Kabbani, 2001). Fredericks, Blumenfield, and Paris (2004) delineated three major dimensions of school disengagement: behavioral, affective, and cognitive. Indicators of behavioral disengagement include low academic participation and effort (Ream & Rumberger, 2008); low conformity to school norms and rules (Janosz et al., 2008); and absences (Finn & Rock, 1997). Affective disengagement refers to a lack of interest in and liking for school as well as a low sense of school membership (Archambault, Janosz, Fallu, & Pagani, 2009). Cognitive disengagement includes low academic self-efficacy and poor self-regulated learning (Zimmerman, 1990).

School Engagement and Academic Outcomes

Studies with diverse samples investigating changes in developmental outcomes over time have documented associations between engagement in middle and high school and academic outcomes, including grades and graduation from high school (Alexander et al., 2001; Janosz et al., 2008). In a study of adolescents ages 11 to 17 years, although several individual and family environmental risks predicted concurrent student grades, only academic engagement (interest, involvement, and effort) predicted future changes in grades through adolescence (Johnson, McGue, & Iacono, 2006). Casillas, Robbins, Allen, Kuo, Hanson, and Schmeiser (2012) found that poor behavioral and affective engagement in middle school accounted for as much of the variance in high school academic achievement as did middle school grades. The few studies on engagement and achievement among Latino students have also documented associations between behavioral and affective engagement and academic achievement (Alfaro, Umaña-Taylor, Gonzales-Backen, Bámaca, & Zeiders, 2009; Roche & Kuperminc, 2012).

School Engagement and the Transition to Middle School

In most U.S. schools, students transit to middle school after grade 5 or 6 and make a second transition to high school at grade 9. However, other school patterns are not uncommon, including earlier transition from elementary to an intermediate school (typically grades 5

and 6), followed by a transition to junior high (Snyder & Dillow, 2010). In this study, the term *middle school* refers to the school level that follows elementary school. The move from elementary to middle school is difficult for many youth. On average, students report a decline in their self-esteem and sense of school belonging and an increase in anxiety and depression as they transit to middle school, and their grades and academic effort decline (Anderman, 2003; Seidman et al., 1994).

The normative decline among ethnically diverse students in academic motivation and achievement at the transition to middle school has been explained by a lack of fit between the developmental needs of the young adolescent and the capacity of the school to meet those needs (Eccles, Wigfield, Midgley, & Reuman, 1993). In middle school, students interact with an expanded number of peers at school and change classes and teachers more frequently during the day, placing increased demands on students' social and organizational skills. The transition often brings a greater emphasis on competition through ability grouping, social comparison, and public evaluation (Eccles & Roeser, 2009). These changes occur at a period of rapid physical changes associated with the onset of puberty and increasing concern with one's social status.

Latino Students and the Transition to Middle School

The few studies that have investigated ethnic differences in the transition to middle school suggest that the transition may be more difficult for Latino and African American than for White students. Latino students perceive the transition to middle school and to high school as more difficult than White students (Akos & Galassi, 2004). Espinoza and Juvonen (2011) found that the transition to middle school was associated with a decline in school belonging for both Latino and White students; however, lower school belonging predicted rule breaking and academic disengagement only for Latino youth. Given the critical role of engagement in middle school to subsequent academic success, it is important to identify child and contextual factors associated with changes in engagement across the transition among Latino youth.

A Sociocultural Perspective on Latino Students' Transition to Middle School

According to sociocultural theory, motivation is not conceptualized as a characteristic of a student but as an outgrowth of a student's attempts to make meaning out of activities and interactions in specific settings, based on culturally based knowledge, practices, and values (Fuller & García-Coll, 2010; Ruedo & Moll, 1994). Authors have argued that a “mismatch” between Latino youths' cultural heritage, that emphasizes family loyalty and obligations, respect for others, and collectivistic values, and the contexts of U.S. schools, that emphasize independent achievement and autonomy, may undermine academic motivation (Crosnoe, 2009a; Fuller & García-Coll, 2010). Other researchers have identified aspects of Latino immigrants' cultural heritage, such as a positive ethnic identity, that contribute to their positive social-emotional adjustment at school entrance and buffer adolescents from negative peer influences in adolescence (Crosnoe, 2006; García-Coll et al., 1996).

Bilingual Education and the Transition to Middle School

The goal of bilingual education is to enable English language learners to become competent in listening, speaking, reading, and writing in the English language through the development of literacy and academic skills in the primary language and English. Although there are different models of bilingual education, the typical model, and the one employed in the schools in this study, involves strong grade-level academic support in both the native language and English for several years, with a gradual increase in the amount of instruction provided in English (August & Shanahan, 2006). Among children with limited English proficiency at the beginning of formal schooling in the United States, enrollment in bilingual classrooms over a number of years is associated with higher levels of achievement (August & Shanahan, 2006).

Scholars have suggested that the benefits of bilingual education are due, in part, to bilingual children's access to their cultural heritage while learning the language and practices of the host culture (Stanton-Salazar & Dornbusch, 1995). Language congruence at home may facilitate a close parent-child relationship and effective communication, which contribute to parental monitoring and guidance of their children (Fuligini, 1997; Fuligni, Witkow, & Garcia, 2005; Han, 2010). Importantly, first and second generation immigrant youth who communicate with their parents in their native language receive more support and encouragement for academic success than do their mono-English speaking peers, even though they have fewer economic resources (Fulgini, 1997; Han, 2010). Additionally, Spanish language proficiency is an important component of ethnic identity, facilitating access to one's ethnic heritage, values, and beliefs (Stanton-Salazar & Dornbusch, 1995). A strong ethnic identity, in turn, is associated with a more positive identification with school and sense of school belonging (Fuligni et al., 2005; Garcia-Coll & Marks, 2009). Guglilmi (2012) found an indirect effect of bilingualism on achievement via its direct effect on self-esteem.

We speculate that enrollment in bilingual classes in the elementary grades may also facilitate stronger peer support across the transition to middle school. This assumption is based on the fact that in ethnically diverse schools (which characterizes the schools in the current study, see participants section), there are typically fewer bilingual classrooms than non-bilingual classrooms. Thus, bilingual students are more likely to be in the same classroom with the same peers from year to year, presumably resulting in a more cohesive cohort of peers with whom they make the transition to middle school. Students who make the transition to middle school with a cohort of close friends adjust better to middle school, presumably due to a secure relationship base from which to explore their new environment (Aikins, Bierman, & Parker, 2005).

Students enrolled in bilingual classes throughout the elementary grades typically exit bilingual instruction when they enter middle school (Texas Education Agency, 2013), at which time they are expected to be proficient in English. Being bilingual, these students are likely to be well prepared to take advantage of both Latino (i.e., family and peers) and non-Latino sources of social capital as they transition to middle school. Social capital refers to social networks from which an individual is potentially able to derive information necessary

to succeed in educational and occupational pursuits (Coleman, 1988; Portes & Alejandro, 1998). Sources of non-Latino social capital include non-Latino teachers and other adults at school as well non-Latino peers. Drawing from literature on the importance of access to social capital outside the family to the educational success of Latino youth, researchers have found that non-parental adult and peer support for achievement and engagement in school are important to Latino students' success in middle and high school (Brewster & Bowen, 2004; Ream & Rumberger, 2008). The availability of non-Latino social support may differ based on the ethnic diversity of the middle school.

School Ethnic Congruence

Ethnic congruence refers to the proportion of a school's student body of the same ethnicity as a given student. Benner and Graham (2009) reasoned that a decline in ethnic congruence would predict a more difficult transition. They investigated pre- and post-transition trajectories for school engagement and grades in an urban, multi-ethnic sample of students. Overall, the transition was characterized by a decline in engagement and grades. However, changes in ethnic composition of the school between middle and high school moderated post-transition trajectories for African American and Latino students, but not White students. As minority students entered high schools with lower percentages of their own ethnic group, their school belonging and liking for school declined and, for Latino students only, absences increased.

Although higher ethnic congruence is associated with increased sense of school belonging and positive perception of the school climate among Latino youth, higher ethnic congruence does not consistently predict higher levels of achievement (Alfaro et al., 2009; Benner & Crosnoe, 2011). Benner and Crosnoe suggested that the benefits of ethnic congruence on school belonging, which generally promotes achievement, may be offset by a detrimental effect of ethnic congruence on exposure to diverse ethnicities and world views. In more ethnically diverse schools, Latino students have more opportunities for contact with peers from other ethnic groups, thereby gaining access to non-Latino sources of social capital. Also, predominantly Latino-serving schools may provide less peer support for academic success. In support of this view, Schwartz, Kelly, and Duong (2013) reported a negative association between academic competence and peer popularity in a predominantly Latino, urban high school.

Although there is a lack of research on the role of bilingual education on the transition to middle schools differing in ethnic congruence, one might expect that students enrolled in bilingual classes throughout the elementary grades, having strong Spanish and English skills and a positive ethnic identity, would be well prepared to draw from their Latino culture while simultaneously expanding their access to non-Latino peers as they transition to a more ethnically diverse middle school. In a study of Latino immigrant children (Brown & Chu, 2012), a positive association between ethnic identity and school belonging was found only at predominantly white schools. Umaña-Taylor and Fine (2004) found that among Latino students, ethnic identity was more positive in students attending schools with fewer Latino students.

A Life Course Perspective on the Transition to Middle School

Because school transitions represent important changes in a student's environment, they may mark a “turning point” in a student's life course (Elder, 1998). In discussing the transition from middle school to high school, Benner and Graham (2009) state “each student brings a unique set of past experiences, personal resources, and expectations, and their transitions occur within distinct environments, all of which affect the adaptations they make when moving to high school and their subsequent life course trajectories” (p. 357). Understanding school transitions from a life course perspective requires examining trajectories both before and after the transition.

Most studies on school transitions have examined adjustment at one point in time pre-transition and one point in time post-transition. Although informative, such an approach does not reveal whether post-transition achievement and engagement trajectories are embedded in a pattern of declining, stable, or increasing developmental trajectories. For example, a finding of a decline in performance from the elementary to the middle school may reflect a longer-term downward trajectory that began years prior to the transition or a temporary drop following a stable trajectory during the elementary grades, from which children rebound. Wampler, Munsch, and Adams (2002) investigated ethnic differences in achievement trajectories based on teacher-awarded grades for each grading period in the first year of middle school. They found that a pattern characterized by an immediate decline in grades, relative to grades at the end of elementary school, that was followed by a rebound later in the year was characteristic of Latino students. However, one cannot determine if the decline at the beginning of middle school represented a shift in trajectories across the transition or a continuation of a downward trajectory that began in the elementary grades.

The Current Study

We examined the trajectories of behavioral engagement and school belonging across the transition from elementary (typically grades 1–5) to the first two or three years of middle school. Drawing from sociocultural and life course theories, we investigated the main and interactive effects of enrollment in bilingual classes in elementary school and change in school ethnic congruence from elementary to middle school on changes in trajectories for behavioral engagement and school belonging. Based on prior research, we expected a downward shift in behavioral engagement and school belonging that would be maintained or intensified across the middle school grades. We expected this decline would be greater when the transition to middle school was accompanied by a marked decline in ethnic congruence from elementary to middle school. Based on research reviewed documenting benefits of bilingual education on students' ethnic identity and school belonging, we expected that enrollment in bilingual education prior to transition to middle school would have a positive effect on middle school trajectories of behavioral engagement and school belonging, especially when transitioning to a middle school with a smaller percentage of Latino students.

Prior studies with Latino adolescents report that girls have higher liking for and sense of belonging to school (Alfaro et al., 2007; Colón, & Sánchez, 2010). Furthermore, the

processes leading to academic success vary by gender among Latino adolescents (for review see Alfaro et al., 2009). For example, family sources of social support are more predictive of the academic motivation of girls than of boys (Alfaro, Umaña-Taylor, & Bámaca, 2006). We expected higher engagement and school belonging for girls than for boys. Because a more complete understanding of the role of gender across the transition to middle school would inform targeted interventions, we also investigated gender differences in *changes* in school belonging and engagement across the transition. Due to a lack of prior research on gender differences in changes in motivation at the transition, these analyses were exploratory.

Method

Participants

Participants were 204 students (53% male) identified by their parents as Latino participating in a longitudinal study of 784 ethnically diverse, educationally at-risk students. Information on students' race and ethnicity was provided by the schools, based on parent-report. Participants in the larger study were recruited from three school districts in Texas (1 urban and 2 small city districts) across two sequential cohorts in first grade during the fall of 2001 and 2002 and assessed annually for 9 years. School District A (student population = 13,558) had an ethnic distribution of 38% White, 37% Latino, 25% African American, and fewer than 1% other. District B (student population = 24,429) had an ethnic distribution of 35% White, 30% Latino, 30% African American, and 5% other. District C (student population = 7,424) had an ethnic distribution of 67% White, 12% Latino, 12% African American, and 9% other.

Children were eligible to participate in the larger study if they scored below the median on a state-approved, district-administered measure of literacy at initial entry to first grade, spoke either English or Spanish, and were not receiving special education services, and had not previously been retained in first grade. The research was approved by the Institutional Review Board of the first author's University and each school district's research advisory committee. Of the 784 recruited participants, 293 were identified by school records as Latino (for details on recruitment see Hughes & Kwok, 2006). Of the 293 Latino students, 89 failed to meet criteria for inclusion in the current study: They did not return the parental consent from for continued participation after the first 5 years of the study (n = 87) or they were retained more than once in the elementary grades (n = 2). Analyses on a broad array of archival variables including age, IQ, gender, parent immigration status, district literacy average score, and school ethnic composition did not indicate any difference between the 89 attrited and the 204 continuing participants. However, students who attrited were more likely to have been enrolled in bilingual classes at baseline (50%) than were continuing students (30%).

Of the 204 participants, at baseline (Year 1 of data collection), 53 (26.0%) were more proficient in Spanish than in English, determined through assessment procedures described below, and 61 (29.9%) were enrolled in bilingual classes for native Spanish speakers only. Also, 10 (4.9%) of parents reported being born outside the United States (primarily Mexico and Latin America), and 45 (22%) of children were born outside the United States. A majority (71%) of parents' highest level of educational attainment was a high school

diploma or less, and 79 % of the students' families met income eligibility for free or reduced lunch. Not surprisingly, students enrolled in bilingual classes, relative to students enrolled in non-bilingual classes, were more likely to a) come from homes in which Spanish was the primary language spoken (65.8% vs 27.0%) and in which the highest level of educational attainment of any adult in the home was a high school diploma or less (88.9% vs 63.4 %); b) to be eligible for free or reduced lunch (100% vs 78.2 %); and c) to have a mother who had spent the majority of her life prior to age 21 years of age outside the United States (71.4% vs 32.0%). At baseline, participants were enrolled in 117 classrooms in 3 school districts. At the first year of middle school, they were enrolled in 90 classrooms in 22 school districts. The increase in the number of school districts reflects the increased geographical dispersal of the sample over time.

Research Design Overview

To assess pre- and post- transition trajectories, we first determined the year and the grade at which students transitioned to middle school. Schools differ in the grade at which students exit elementary school. The majority (80.4%) of participants transitioned to middle school following completion of Grade 5; the remainder (19.6%) transitioned following Grade 4. For the 56 (27.5%) students who were retained once in elementary school, we used only the data from the retained students' repeat year in that elementary grade. Piecewise latent growth curve analyses were employed to obtain pre-transition and post-transition trajectories for teacher-rated behavioral engagement and student-reported school belonging (see Data Analysis Approach). Not all students had the same number of assessment waves pre- and post-transition to middle school because some students were retained and schools differed in the transition grade. For teacher-rated behavioral engagement, four pre-transition and three post-transition assessments were available for analysis. For student-reported school belonging, two pre-transition and three post-transition assessments were available for analysis.

We explored the average effects of student gender, enrollment in bilingual education classes throughout elementary school, and a decrease in school ethnic congruence on changes in level of teacher-rated engagement and student-reported school belonging from the last year of elementary school to the first year of middle school and on trajectory slopes during middle school. In our analyses, we controlled for a global index of educational risk assessed in Year 1 (i.e., propensity to be retained in the elementary grades; see Measures). We tested a potential moderating effect of a decline across the transition in school ethnic congruence on gender and bilingual education, again controlling for a global index of educational risk.

Assessment Procedures

Children's sense of school belonging was assessed annually at school by trained research staff, with a minimum of 8 months separating each annual assessment. If children or their parents spoke any Spanish at baseline (Year 1), students were individually administered the Woodcock-Muñoz Language Test (Woodcock & Muñoz-Sandoval, 1993) by bilingual (English/Spanish) examiners to determine the child's baseline academic language proficiency in English and Spanish. Children were subsequently interviewed in the language in which the student demonstrated greater proficiency. Once a student demonstrated equal or

greater academic language proficiency in English for three consecutive years, all subsequent interviews were conducted in English.

Each year in the spring, teachers completed questionnaires, which included questions regarding students' behavioral engagement and the language used for communication with the students' parents. In Year 9, teachers also reported on students' letter grades in their classes. Teachers received compensation for completing and returning questionnaires. In the elementary grades, the teacher with whom the child spent the most time completed the questionnaire; in middle school, the Language Arts teacher completed the questionnaire, unless that teacher identified another teacher who knew the child better. At baseline, parents were mailed questionnaires, which included items on demographic variables, including language spoken in the home, parent and child immigrant status, and the highest educational level of any adult living in the home. Parents of students enrolled in bilingual education and students who spoke any Spanish, according to teachers, were mailed both English and Spanish versions of the questionnaire. Information on student grade placement each year and enrollment in bilingual classroom were obtained annually from the schools.

Measures

Teacher-rated behavioral engagement—Teachers rated students' classroom engagement with an 11-item questionnaire. Items were adapted from both the teacher and the student ratings of engagement (Skinner, Zimmer-Gemback, & Connell, 1998). Items assess effort, persistence, concentration, and interest. Example items include: Tries hard to do well in school, “concentrates on doing work,” “tries to look busy” (reverse scored), and “participates in class discussion.” Teachers were asked to indicate the extent to which each statement was true of their student on a 1 (*Not true at all*) to 4 (*Very true*) scale. The classroom engagement scale has good internal consistency. Across the 9 longitudinal measurement waves for the current sample, the internal consistency reliability (Cronbach's α) ranges from 0.91 to 0.95 (median = 0.94). Scores on this scale predict changes in students' reading and math achievement (Chen, Hughes, Kwok, & Liew, 2010). A comparison of the factor structure of the Year 4 and Year 8 questionnaires demonstrated that longitudinal measurement invariance was achieved.

School belonging—Students completed the Psychological Sense of School Membership Scale (Goodenow, 1993) by indicating their agreement on a 5-point Likert-type scale to 18 items that assess students' perceived acceptance, feelings of inclusion, respect, and encouragement for participation. Example items include “I feel like a real part of this school” and “It is hard for people like me to be accepted here.” Higher school membership scores are associated with greater school attendance, higher grades, more positive self-concept, greater time spent on homework, and better social-emotional adjustment (Goodenow, 1993; Hagborg, 1998). Cronbach's α across 6 longitudinal measurement waves for the current sample ranges from 0.81 to 0. 91 (median = 0.89). In a sample of Latino middle school students, scores on this measure showed good criterion-related validity (Kuperminc, Darnell, & Alvarez-Jimenez, 2008). A comparison of the factor structure of the Year 4 and Year 8 questionnaires demonstrated that longitudinal measurement invariance

was achieved. This result indicates that the same construct is measured by the Psychological Sense of School Membership Scale in elementary and middle schools.

Educational risk—Propensity scores, defined as the student's probability of being retained at the end of Grade 1 in elementary school, were used as an index of risk for academic failure. Propensity scores were calculated based on 67 covariates measured earlier in grade 1, prior to any child being recommended for retention. These 67 variables were selected to be as comprehensive as possible, including variables that have been shown in prior research to be associated with grade retention or academic achievement. These variables assessed family functioning and background variables as well as child academic, social, and behavioral functioning and classroom instructional and composition variables, and included multiple sources (parent, teacher, peers, child performance measures, child interviews, and school archival records). Additional details on propensity scores are reported in (Moser, West, & Hughes, 2012).

Bilingual education pre-transition—Each participating school provided full time bilingual education throughout the elementary grades, in which the percentage of academic instruction in English language gradually increased across grades. Bilingual classes were open only to students who qualified as English Language Leaners (ELL). In kindergarten and first grade, determination of ELL status was based on a finding that the language spoken in the child's home was other than English and that the child's performance on a state-approved test of oral language indicated limited English proficiency (defined as a level at which English instruction would not be “manageable”). Parental consent is required for entry into and exit from bilingual instruction. With parental consent, students may remain in the program for the full 5 years, even if the student is no longer identified as limited English proficient. Continuation in bilingual classes from 1st to 5th grade is common in the participating school districts. Of the 61 students enrolled in bilingual classes in first grade, 38 (62.3%) continued to be enrolled in bilingual classes during their last year of elementary school. Bilingual education was coded as 1 for students who were enrolled in bilingual classes throughout elementary school and 0 for all other students.

Ethnic congruence and change in congruence—First, the ethnic congruence score (i.e., percentage of total school student population that was Latino) was calculated for the students' pre-transition and post-transition schools. The ethnic congruence scores for the current sample ranged from 6.40 to 81.00 for pre-transition schools and from 6.30 and 92.10 for post-transition schools (M = 46.17; SD = 20.37 and M = 39.65; SD = 17.10, respectively). A congruence change score was computed by subtracting the elementary school congruence score from the middle school congruence score. The mean congruence change score for the current sample was M = −5.32 (SD = 17.11).

Ethnic congruent groups—Researchers have employed different cut-off scores when creating ethnic congruence change groups (Benner & Graham, 2007; French Seidman, Allen, & Aber, 2000). Because previous research found that stable and increasing change groups did not differ in transition experiences (Benner and Graham. 2007), and to retain sufficient sample size, we created two congruence groups. An ethnic incongruent group was

defined by a drop in ethnic congruence of 15% or more between elementary and middle school. According to this definition, 52 students (25.5% of the sample) were coded as experiencing a drop in ethnic congruence of 15% or more as they moved from elementary to middle school. These students (n = 52; 25.5% of sample) were coded as 1 on decline in ethnic congruence. All others were coded as 0 on this variable.

Data Analysis Approach

To investigate changes in trajectories of teacher-rated engagement and student-reported school belonging from the elementary school to the middle school, we tested unconditional piecewise latent growth curve models with four transition trajectory factors (i.e., intercept at the transition, shift in intercept from pre-transition to post-transition, pre-transition slope, and post-transition slope). *Mplus* (version 7, Muthén & Muthén, 1998–2012) was utilized for all analyses. We centered the time predictor at the transition point; that is, at the child's first year in middle school. Next, we investigated the first order effects of the predictors (student gender, enrollment in bilingual education classes the last year of elementary school, and ethnic congruent group) with the same piecewise latent curve model, controlling for a global index of educational risk (see Measures). Next, we examined the moderating effects of gender and bilingual education with ethnic congruent group on four growth factors. The models were tested using full information maximum likelihood, which adjusts for data that are missing at random (Enders, 2010).

Results

Descriptive Statistics

The variables were screened for non-normality and outliers. Because none of the variables exhibited problematic levels of skewness or kurtosis (West, Finch, & Curran, 1995) maximum likelihood estimation was used. Students in the ethnic incongruent group were somewhat more likely to be enrolled in bilingual education prior to the transition. None of the other predictors were significantly correlated. Across the 9 assessment waves for teacher-rated behavior engagement, the mean rating was 3.37 (range from 3.14 to 3.52), and the proportion of missing data was 0.23 (range from 0.12 to 0.29). Across the five assessment waves for school belonging, the mean ratings was 3.83 (range from 3.73 to 3.91) and the proportion of missing data was .06 (range from .04 to .09).

Unconditional Latino Latent Growth Model Findings

The unconditional latent growth trajectory with parameter estimates is presented in Figure 1a and 1b, for teacher-rated behavioral engagement and for student-reported school belonging, respectively. Both models (i.e., the teacher-rated behavioral engagement and the student–reported school belonging) with the four latent growth factors (based on seven waves for teacher-rated behavioral engagement; five waves for student-reported school belonging) had adequate fit according to suggested criteria (Hu & Bentler, 1999), χ^2 (14) = 9.813, p = 0.78, RMSEA = 0.000, SRMR = 0.029 for teacher-rated behavioral engagement and χ^2 (5) = 12.96, p = 0.024, RMSEA = 0.089, SRMR = 0.078 for student-reported school belonging.

For the change in average score of teacher-rated behavioral engagement and student-reported school belonging over the transition from elementary to middle school, we found a significant drop for student-reported school belonging ($\gamma = -0.22$, $SE = 0.08$, $p = 0.006$) but a non-significant drop for teacher-rated behavioral engagement ($\gamma = -0.12$, $SE = 0.07$, $p = 0.097$). For the linear growth trajectory during middle school, on average, neither the post-transition slope for teacher-rated behavioral engagement ($\gamma = -0.06$, $SE = 0.03$, $p = 0.100$) nor the post-transition slope for the student-reported school belonging was significantly different from zero ($\gamma = 0.01$, $SE = 0.03$, *ns*).

Latino Transition Direct and Moderation Models Findings

We first tested the first order effects of the three predictors (i.e., bilingual education enrollment, student gender, and ethnic congruence) on the four growth factors of the piecewise model for teacher-rated behavioral engagement and student-reported school belonging, respectively. In these analyses, we controlled for the effect of the global index of educational risk on three growth factors (intercept, pre- and post- transition slope). All hypothesized models had adequate fit; χ^2 (22) ranges from 13.774 to 27.931, $p > .05$ for all models; RMSEA 0.000 to 0.036; SRMR 0.027 to 0.040 for behavioral engagement and χ^2 (8) ranges from 14.808 ($p = 0.063$) to 17.414 ($p = 0.026$); RMSEA ranges from 0.065 to 0.079; SRMR ranges from 0.059 to 0.071 for school belonging. First we considered pre-transition trajectories. As shown in Table 1, for behavioral engagement, enrollment in bilingual classes ($\gamma = 0.35$, $SE = 0.17$, $p = 0.038$) predicted a higher intercept at the transition (i.e., the last year of elementary school). Enrollment in bilingual classes ($\gamma = 0.22$, $SE = 0.06$, $p < 0.001$) also predicted a more positive pre-transition slope. For school belonging, female gender ($\gamma = -0.35$, $SE = 0.15$, $p = 0.022$) predicted a higher intercept at the transition. No other predictors had a significant effect on the intercept at the transition point or the pre-transition slope.

Our main interest in this study was the shift in the intercept at the point of transition from elementary school to middle school and the slope during middle school. No predictor had a significant effect on the magnitude of the shift in intercept or on the post-transition slope for school belonging or teacher-rated engagement.

Next, we examined whether the binary ethnic congruence measure moderated the effect of gender and bilingual education on either shift in intercept at the transition to middle school or post-transition slope. All of the moderation (interaction) models showed adequate fit; χ^2 (30) ranges from 18.768 to 37.962, $p > .05$ for all models; RMSEA ranges from 0.000 to 0.036; SRMR ranges from 0.030 to 0.041 for behavior engagement and χ^2 (10) ranges from 15.177 ($p = 0.126$) to 19.757 ($p = 0.032$) .05 for all models); RMSEA ranges from 0.054 to 0.072; SRMR ranges from 0.051 to 0.056 for school belonging. For school belonging, no significant interaction effects were found for the shift in intercept or post-transition slope for school belonging. For behavioral engagement, ethnic incongruence moderated the effect of bilingual education on post-transition slope (see Table 2). Figure 2 depicts the effect for bilingual classes on the post-transition slope during middle school under conditions of a decline in ethnic congruence (incongruent group) and no change or an increase in ethnic congruence (ethnic congruent group).

Among Latino students who experienced a substantial increase in ethnic incongruence across the transition from elementary to middle school, students enrolled in bilingual classes (i.e., the bilingual and incongruent group) in their pre-transition year showed a positive linear slope of behavioral engagement after transition, whereas students who were not enrolled in bilingual classes prior to transition (i.e., bilingual and congruent) showed a negative linear slope of behavioral engagement after transition. Regardless of bilingual status, Latino students who did not experience a substantial increase in ethnic incongruence over the transition did not demonstrate any change in teacher-rated behavioral engagement during the middle school years.

Discussion

Overall, teacher-rated behavioral engagement and student-perceived school belonging remained stable during the elementary grades. However, students experienced an immediate drop in school belonging at the transition to middle school, followed by a stable trajectory. The immediate drop in teacher-rated engagement was in the hypothesized direction but only marginally statistically significant. However, students also experienced a marginally statistically significant decline in engagement across the middle grades. Following an observation by Muthén and Curran (1997), we conducted a supplementary test to examine the cumulative effect of these changes in the intercept and slope. We found a statistically significant difference in Year 9 teacher-rated engagement, after controlling for the level of teacher-rated engagement the last year of elementary school. These novel findings are of considerable concern because low school belonging and teacher-rated engagement in adolescence predict lower academic grades and dropping out of school (Johnson et al., 2006; Roche & Kuperminc, 2012).

Effect of Predictors on Growth Parameters for School Belonging

None of the predictors (bilingual classes, gender, or an increase in ethnic incongruence) was associated with any of the growth parameters for school belonging. These non-significant results for an increase in ethnic incongruence on school belonging are inconsistent with findings from Benner and Graham (2009). Inconsistencies may be due to differences in samples and methodology. The Benner and Graham studies investigated the transition to high school, a transition that differs in important ways from the transition to middle school, in an urban school district that enrolled few White students. Our findings are consistent, however, with Benner and Graham (2007), which did not find a significant association between the proportion of same ethnicity peers in the school and school belonging for Latino students. Further research is needed to clarify inconsistencies in the literature. Other aspects of the middle school context, such as the cultural competence of teachers and communication between home and school may moderate effects of change in ethnic congruence on students' psychosocial adjustment (Crosnoe, 2009a).

Effect of Predictors on Growth Parameters for Behavioral Engagement

Pre-transition—Students enrolled in bilingual classes during the elementary grades began formal schooling with lower levels of behavioral engagement, relative to students in English only classes, but they caught up and surpassed their non-bilingual classmates by the end of

elementary school. Our design does not permit conclusions about the effect of bilingual class enrollment in elementary grades on engagement, because the groups are not equivalent on measured (and likely unmeasured) factors that may account for different trajectories of growth in engagement. It is noteworthy that even though the bilingual group, relative to the nonbilingual group, was characterized by higher demographic risks (i.e., lower levels of parental education and greater economic adversity), they had more positive engagement trajectories in elementary school. The current findings are consistent with research documenting the benefits of bilingual classes on psychosocial as well as academic adjustment (Han, 2012). Bilingual classes may foster academic self-efficacy and a sense of security that promotes academic motivation.

Post-transition—We had expected bilingual education status would be associated with a more positive transition to middle school, based on research documenting a positive role of bilingualism on students' positive self-concept and ethnic identity, sense of school belonging (Fuligni et al., 2005), and parental support and encouragement for academic success (Fuligni, 1997, Fuligni & Flook, 2005; Guglielmi, 2012). Although there was no direct effect of bilingual education on post-transition trajectories of engagement, change in school ethnic congruence across the transition moderated the effect, such that, among students exiting bilingual classes at the transition to middle school, an increase in school ethnic incongruence was associated with a positive slope. Conversely, for students not enrolled in bilingual classes prior to the transition, a drop in ethnic congruence was associated with a negative slope. For students experiencing the same or increased level of congruence, bilingual and nonbilingual students experienced flat slopes. Thus, students exiting bilingual classes were more likely to maintain their positive elementary trajectory when the transition represented a decrease in ethnic congruence than when it represented no change or an increase in ethnic congruence.

This finding can be understood in terms of social capital theory. Specifically, bilingual students may benefit from a decrease in ethnic congruence because they can draw from their strong ethnic identity and cultural values, which are associated with bilingualism, while simultaneously broadening their social capital.

Consistent with this reasoning, in a study of Mexican-origin high school students (Stanton-Salazar & Dornbusch, 1995), fully bilingual students were better able to take advantage of the social capital provided by teachers, guidance counselors, and other institutional resources, than were English dominant students. Having enrolled throughout elementary grades in classrooms that are almost exclusively Latino, students existing elementary school and moving to schools with a decreased representation of Latino students have an opportunity to greatly broaden their interaction with non-Latino peers. We speculate that family support for education and a cadre of close friends with whom to make the transition gives bilingual students the security to take advantage of an expanded social world.

Those students who did not transit from bilingual classes (which represented 81% of this sample) were more likely to exhibit declining behavioral engagement across middle school when the proportion of Latino students decreased, relative to when the proportion of Latino students stayed the same or increased. This finding is consistent with the majority of

literature on the effect of the school ethnic congruence for Latino students (Benner & Graham, 2009, 2011). Presumably, without the strong ethnic identity and connections to family that bilingual students possess, these students had difficulty adapting to a more ethnically incongruent context.

Supplementary analyses investigated whether similar results would be obtained using the proportion of Latino students in the middle school rather than a *change* in ethnic congruence. No first order or moderating effects of ethnic congruence of the middle school predicted a shift in intercept at transition or the slope of trajectories for engagement or school belonging. These findings are consistent with life course theories of development, which emphasize the importance of changing contexts at points of life transitions (Elder, 1998).

Gender

As expected, girls had higher levels of school belonging at the transition to middle school than boys. However, no gender differences were found for a shift in engagement or school belonging at the time of transition or on post-transition slopes for these motivational variables.

Study Strengths, Limitations, and Directions for Future Research

A unique strength of this study is the analysis of changes in *trajectories* of engagement and school belonging across the transition to middle school among a sample of Latino students, which demonstrated that average declines in school belonging and engagement are not part of a development trend that began earlier but are specific to the transition. The unique finding that students previously enrolled in bilingual classes continue their positive trajectories of engagement only when transitioning to schools with lower ethnic congruence directs attention on possible resiliency processes associated with bilingual classes. Promising avenues for investigation in future studies include more positive ethnic identity at the transition, access to non-Latino sources of social capital at school, and the maintenance of close friends across the transition.

Findings need to be interpreted in light of several limitations. First, because the sample was selected on the basis of scoring below the school district median on a measure of literacy, results may not generalize to Latino students who begin first grade with above average literacy scores. Also, the greater attrition rate for students enrolled in bilingual classrooms in first grade than for students in regular classes in first grade means that results may not generalize to all students who begin first grade in bilingual classes, This latter problem is mitigated by the use of full information maximum likelihood estimation which provides proper adjustment of the results for missing data based on variables included in the data set. Our findings may also not generalize to other models of bilingual education, such as dual language programs, or to students who begin bilingual classes after first grade. Because no consensus has been achieved on the best way to account for changes in the structure of the data (i.e., clustering of students in classrooms), we did not take such clustering into effect, which may have biased tests of statistical significance.

Findings regarding first order effects of ethnic congruence across transitions with Latino samples have been inconsistent (Benner & Graham, 2007, 2009). This inconsistency may be a result of the heterogeneity in family and school contexts represented in different studies. Future research is needed to identify student, family, and school characteristics that may interact with ethnic congruence. Also, change in ethnic congruence may have different implications for students based on whether the decline is from being in the majority to being in the minority or whether the receiving school enrolls some minimum percentage of same-ethnicity peers. The National Academy of Education (Linn & Welner, 2007) suggested a minimum racial/ethnic composition threshold of 15% protects against feelings of isolation and possible out-group hostilities. Only in 10% of schools in the current study did the percentage of Latino students fall below 15%. We recommend that future studies of the role of ethnic congruence represent a broad spectrum of ethnic congruence and consider not only the magnitude of change in congruence but also the minimum level of same ethnicity peers.

Conclusions and Implications

The finding that students exiting bilingual classes continue their positive trajectories for engagement in middle school when transitioning to a middle school with a smaller proportion of Latino students suggests the benefits of exposure to broader social capital for students with bicultural competences. Schools serving lower percentages of Latino students tend to be more resourced and to serve higher SES families (Crosnoe, 2009b). The educational expectations on the part of teachers as well as peer social capital may be higher at these schools. Students exiting bilingual classes after 5 years of enrollment may be well prepared to meet these academic expectations.

The finding of a decline in school belonging and engagement over the transition to middle school for the whole sample points to the importance of school policies and programs that promote Latino students' positive identification with and engagement in middle school. Participation in extracurricular activities such as athletics and band promotes behavioral and emotional engagement in school, perhaps due to the access to prosocial peers and adult leaders that these activities provide (Feldman & Matjasko, 2005). Yet Latino students are less likely than White or African American students to participate in extracurricular activities (Feldman & Matjasko, 2007). Given the importance of such social support to Latino students' school engagement (Brewster & Bowen, 2004), extracurricular participation may be one avenue for increasing Latino students' behavioral and affective engagement in school. Additionally, school-based mentoring programs such as Check and Connect (Christenson & Reschly, 2012) that have been found effective in improving student engagement in ethnically diverse samples of at-risk students may be especially beneficial to Latino students by virtue of the access to social capital that mentoring provides. Finally, given the importance of teacher-student relationships to Latino students' school engagement (Brewster & Bowen, 2004), policies that promote close teacher-student relationships in middle school offer an avenue for increasing educational outcomes among Latino adolescents.

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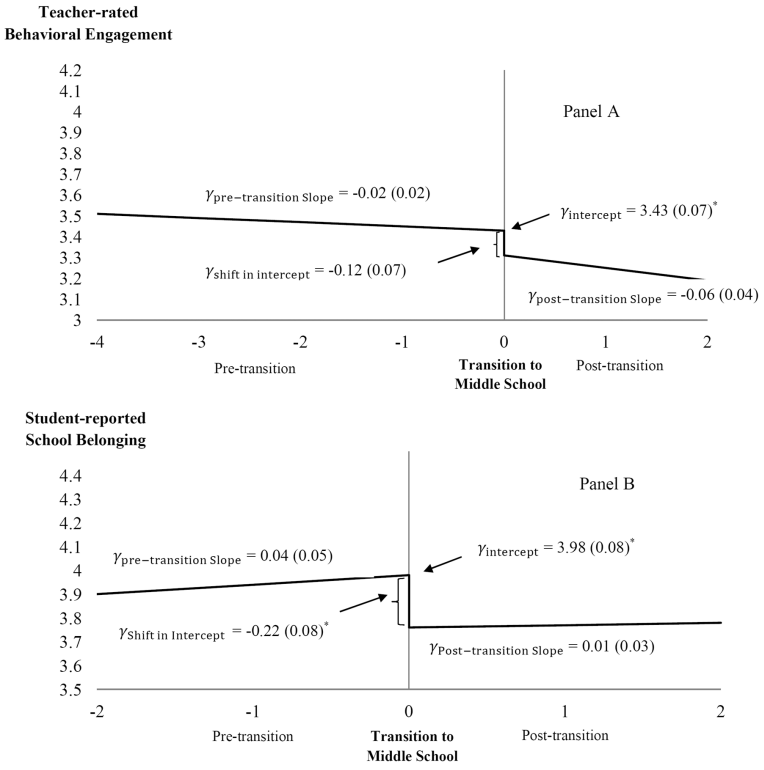

Figure 1.

Unconditional Latino latent growth model for teacher-rated behavioral engagement (Panel A) and student-reported school belonging (Panel B). The numbers in the repeated measure (Transition) refer to the centered timing of transition year. Model fit for behavioral engagement: χ^2 (14) = 9.813, p = 0.775; root-mean-square error of approximation (RMSEA) = 0.029; standardized root-mean-square residual (SRMR) = 0.000. Model fit for school belonging: χ^2 (5) = 12.961, p = 0.024; root-mean-square error of approximation (RMSEA) = 0.089; standardized root-mean-square residual (SRMR) = 0.078. Unique variances for school belonging scores from Transit-2 to Transit 2 were fixed to be the same across time. All coefficients are unstandardized. Standard errors are presented within parentheses. *p <. 05,

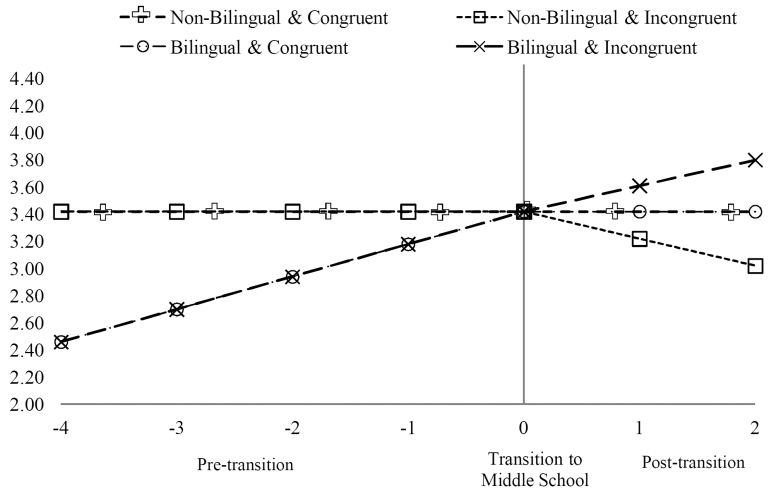

Figure 2.

Estimated piecewise latent growth curves of teacher-rated behavioral engagement scores of two different Bilingual status with two groups based on ethnic congruence change scores on *Post-transition Slope* (during middle school years).

Table 1

Unstandardized Effect of Predictor on Four Growth Factors

Predictors	Bilingual Education		Gender		Ethnic incongruence	
	Est. (SE)	*p*-value	Est. (SE)	*p*-value	Est. (SE)	*p*-value
Teacher-rated Behavioral Engagement						
Intercept at transition	0.35 (0.17)*	*0.038*	−0.17 (0.13)	*0.199*	0.14 (0.15)	*0.342*
Pre-transition Slope	0.22 (0.06)*	*0.000*	0.06 (0.05)	*0.236*	0.06 (0.05)	*0.286*
Shift in Intercept	−0.25 (0.19)	*0.175*	−0.11 (0.15)	*0.441*	0.01 (0.17)	*0.965*
Post-transition Slope	0.04 (0.09)	*0.693*	0.04 (0.07)	*0.548*	−0.08 (0.08)	*0.311*
Student-reported School Belonging						
Intercept at transition	−0.18 (0.20)	*0.374*	−0.35 (0.15)*	*0.022*	−0.33 (0.17)	*0.056*
Pre-transition Slope	−0.11 (0.11)	*0.354*	−0.15 (0.09)	*0.109*	−0.18 (0.10)	*0.081*
Shift in Intercept	0.30 (0.20)	*0.133*	0.14 (0.16)	*0.387*	0.28 (0.18)	*0.114*
Post-transition Slope	−0.08 (0.06)	*0.208*	−0.02 (0.05)	*0.643*	0.03 (0.06)	*0.640*

Note. Bilingual education was coded as 1 for bilingual and 0 for regular education placement during the pre-transition year. Gender was coded as 1 for male and 0 for female. Ethnic incongruence was coded as 1 for incongruent and 0 for congruent. Intercept at transition is the average level at the first year of middle school. Shift in intercept is calculated as the intercept at transition minus the average level at the end of elementary school. Pre-transition Slope is the linear slope at pre-transition (during Elementary school years); Post-transition Slope is the linear slope at Post-transition (during middle school years). A global measure of educational risk assessed at Year 1 was a covariate on Intercept, Pre- and Post-transition Slope in all models. Standard errors are presented within parentheses.

* $p < .05$

Table 2

Moderation Model for Teacher-rated Behavioral Engagement

	Teacher-rated Behavioral Engagement	
Effect	**Est. (SE)**	***p*-value**
Intercept at transition		
Effect of Bilingual education	0.46 (0.23)*	*0.048*
Effect of Ethnic incongruence	0.15 (0.18)	*0.395*
Interaction Effect	−0.31 (0.35)	*0.374*
Pre-transition Slope		
Effect of Bilingual education	0.23 (0.09)*	*0.008*
Effect of Ethnic incongruence	0.02 (0.06)	*0.727*
Interaction Effect	−0.04 (0.13)	*0.785*
Shift in Intercept		
Effect of Bilingual education	−0.26 (0.25)	*0.309*
Effect of Ethnic incongruence	0.09 (0.20)	*0.665*
Interaction Effect	−0.06 (0.39)	*0.884*
Post-transition Slope		
Effect of Bilingual education	−0.09 (0.12)	*0.420*
Effect of Ethnic incongruence	−0.19 (0.10)*	*0.041*
Interaction Effect	0.37 (0.19)*	*0.047*
Mean		
Intercept	3.42 (0.09)*	*0.000*
Pre-transition Slope	−0.06 (0.03)*	*0.049*
Shift in Intercept	−0.10 (0.10)	*0.316*
Post-transition Slope	−0.04 (0.05)	*0.422*
Model Fit		
χ^2 (*df*)	37.96 (30)	
RMSEA	0.04	
SRMR	0.04	

Note. Intercept at transition is the average level at the first year of middle school. Shift in intercept is calculated as the intercept at transition minus the average level at the end of elementary school. A global measure of educational risk assessed at Year 1 was a covariate on Intercept, Pre- and Post-transition Slope in this model; to reduce the complexity of the table, the effects are not included in the table.

* $p < .05$