Hispanic Learning Trajectories: Country of Origin, Generational Status and English Ability in the Early School Years

Introduction

This paper provides a descriptive analysis of Hispanic students' math and reading learning trajectories between kindergarten and third grade taking into consideration their diversity in country of origin and generational status. Specifically, my objectives in this paper are:

- To estimate Hispanic students' math and reading learning trajectories—including students' initial status at kindergarten entry and their growth rates during kindergarten, first grade, and between first and third grade.
- To examine how these learning trajectories differ among Hispanic subgroups—including Hispanic students of different immigrant generations (first, second and third or more) and different countries of origin (Mexico, Puerto Rico, Cuba, South America, Central America and other Hispanics). From these trajectories, we determine when and how achievement gaps grow or narrow during the early school years.
- To analyze how these trajectories are shaped by students' English ability.

Background and Theoretical Framework

The Hispanic population in the U.S. is continuously growing and is significantly diverse in terms of generational status and country of origin. At the same time, research consistently shows that Hispanic students lag far behind non-Hispanic Whites in several educational outcomes –including kindergarten readiness, high school graduation rates, college attendance and completion (Fry, 2003; NCES, 2003; Kao & Thompson, 2003; Lee & Burkam, 2002; NCES, 2002; Van Hook & Fix, 2002; Hirschman, 2001; Zill et al. 1995).

During the past twenty years, research has emphasized the relevance of the early school years for future life chances and learning experiences (Entwisle et. al, 1988; Entwisle & Alexander, 1993; Cunningham & Stanovich, 1997; Farkas & Beron 2001; Reardon, 2003). First grade children learn ten times more than high school students (Jencks, 1985), they show positive dispositions toward learning (Entwisle & Alexander, 1994) and the literacy and numeric skills acquired during this period are strong predictors of school achievement years later (Cunningham & Stanovich, 1997; Farkas & Beron, 2001).

The early school years may be even more important for Hispanic children, who are predominantly children with foreign-born parents and are often raised in non-English speaking homes. During the early school years many Hispanic students begin their exposure to formal English (August & Hakuta, 2001), deal with underachiever and attention deficit stereotypes and grouping mechanisms that place them in remedial classes due to their language barriers (Schmid, 2001). Hispanic students' initial educational experiences, thus, not only involve the typical home to school transition experienced by most students, they also involve important cultural and language transitions (Garcia, 2001).

Because the majority of the Hispanic population in the U.S. (68%) are members of the first and second generations (US Census, 2000), much theoretical discussion on Hispanic children's education is derived from research on immigrant assimilation. Classic Theories of Assimilation argue that immigrants and their descendents experience improvement of outcomes based on generational succession, length of residence in the country (Park, 1950),

or because of their integration into local social institutions (Milton, 1964). In contrast, segmented assimilation identifies three paths that immigrants may take in becoming part of the U.S. society. First, they may assimilate to the white middle class and then share their cultural customs and economic advantages. Second, they may be assimilated to underclass culture and experience downward assimilation and permanent poverty. Third, they may become similar economically to the white middle class while simultaneously preserving their own culture (Portes & Zhou, 1993; Portes & Rumbaut, 2001).

These theories can be applied for explaining Hispanic adolescents' educational differences, but they seem less pertinent to explain young children's educational outcomes. For very young children, cultural arguments – including oppositional cultures – are implausible mechanisms. Also, these theories neither take into account development and dispositional characteristics of young age children (Entwisle & Alexander, 1994) or incorporate English ability as main explanatory variable.

Language barriers and the development of English skills are common explanations for Hispanics' low school performance (Ream, 2003; Padrón, Waxman and Rivera, 2002). Hispanics are over represented among students with English difficulties. Almost one third of Hispanic students are considered English learners and Hispanics account for 75% of the LEP students in schools (HispanicVista, 2002). Hispanic students not only face the challenges of mastering a new language, they also have to acquire the expected grade level academic skills (Genesee, 1999; Garcia, 2001). In this paper, I begin to explore how Hispanic students' English ability is related to their early elementary educational outcomes.

Data and Methods

The data for this study come from the Early Childhood Longitudinal Study – Kindergarten Cohort (ECLS–K). Using a multistage probability sample design, the ECLS–K includes reading, math and general knowledge achievement measures, and school contextual variables from a nationally representative sample of kindergarteners (NCES, 2002). Our analyses are based on data from a sub sample of 3,899 Hispanic students and 14, 845 non-Hispanic White and Black students, all of whom have at least one reading or math test score and complete ethnic/race and generational status information.

The main dependent variables in our models are *Math and Reading initial status and growth rates* during kindergarten, first grade and between first and third grade. They are measured through Item Response Theory (IRT) scale scores obtained in five points of time (fall 1998, spring 1999, fall 1999, spring 2000 and spring 2002). *Generational Status* is constructed from variables indicating where the child and his or her parents were born. *Country of Origin*, coded as Mexican, Puerto Rican, Cuba, South American, Central American or other Hispanic origin, is measured from variables indicating membership of a Hispanic group and parents' and children's country of birth. Two indicators measure *English ability*: a screening variable that indicates whether students were deemed English proficient in the fall of kindergarten, and students' scores on the English Oral Language Development Scale (OLDS) in the fall of kindergarten.

Learning growth is modeled using a piecewise linear growth model. This model estimates students' math and reading scores at the start of kindergarten and their growth rates during kindergarten, in first grade and between first and third grade. A piecewise model better estimates learning rates than a simple change score, because students were assessed at different times and their schools have different length years (Reardon, 2003). Initially, six models are fitted using three-level Hierarchical Linear Modeling. HLM gives valid and accurate estimations when data are nested – as in this case, assessments are nested

within students and students are nested within classes or schools (Raudenbush & Bryk, 2002).

Exploratory Results

Preliminary results show significant differences in math learning trajectories among Hispanic subgroups and between Hispanic subgroups and Whites. Hispanic students' English ability significantly reduces the score gaps at Kindergarten entry and the differences in growth rates between Hispanic subgroups and Whites. At kindergarten entry, Mexican and Central American students have lower math scores than do Puerto Ricans, Cubans, South Americans and Other Hispanics. Math scores tend to be similar among Mexican students with foreign-born parents while third generation Mexican students have higher math test scores than do the former. The math score gap between Hispanic subgroups and Whites is reduced by Hispanic students' English ability at kindergarten entry, however significant differences between these groups still persist.

During kindergarten and first grade, Mexican, Puerto Rican and Central American students have lower growth rates than do Whites. Cuban students have higher math growth rates than do Whites and there is no significant difference in math growth rates between South American and White students. English ability at kindergarten entry explains entirely the differences between Hispanic subgroups and Whites. During third grade, the differences in math growth rates by country of origin and generational status become insignificant. Only Mexicans have a significantly lower math growth rates than do Whites. This difference is entirely explained by Hispanic students' English ability.

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