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Early Academic Achievement of Hispanics in the United States: Implications for Teacher Preparation

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Hispanics account for over one-fifth of newborns in the United States, and Hispanic children, on average, achieve at much lower levels from kindergarten forward than the non-Hispanic white majority and Asian Americans. One of the most important educational challenges for the U.S. is to increase markedly the percentage of Hispanic children who enter kindergarten "ready" for school. Given that the early childhood years provide possibly the best window for improving academic trajectories for Hispanic children, this paper describes what is currently known about and offers recommendations to expand and improve early childhood education for Hispanics, including the preparation of teachers who serve these children.

Social demographics document that the racial/ethnic composition of the United States is changing rapidly, especially among the nation's young. As recently as 1950, African Americans, Hispanics, Asian Americans, and Native Americans constituted about 15% of the nation's under-18 population. Collectively, these groups currently constitute about 40% of American children

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and youth, and are projected to reach half or more of the under-18 age segment within another generation or so.

Leading this rapid "demographic shift" has been the extraordinary growth of the Hispanic population. Although Hispanics were only a few percent of the nation's children and youth in 1950, they are now the largest racial/ethnic minority segment of the child population. In 2002, there were nearly 13 million Hispanic children and youth in the United States, about 18% of the nation's under-18 population (Ramirez & de la Cruz, 2003). Hispanics were an even larger share of the very young that year. Of the 4 million babies born in the United States in 2002, nearly 877,000 were Hispanic, about 22% of the total—up from 16% of the births a decade earlier (Martin et al., 2005). It is anticipated the under-18 Hispanic population will grow to over 17 million by 2020 (U.S. Census Bureau, 2003).

An important characteristic of the growing Hispanic population is the low average level of educational attainment of Hispanic adults, especially relative to the non-Hispanic Whites and to Asian Americans. In 2002, among Hispanics over 25, about 27% had less than a 9th grade education, and only 11% had completed a bachelor's degree or more, while the comparable percentages for Whites were 4% and 29% (Ramirez & de la Cruz, 2003).

On a more positive note, the Hispanic immigrant population has become better educated over time, and some segments are now generally well educated. Among Hispanic adult immigrants in the 1990s, about 59% had completed high school or college—41% had a secondary degree and another 18% had finished college (Lowell & Suro, 2002). Immigrants from South America led the way, with 86% having completed at least a high school degree and a third having completed college; but, among the largest Hispanic immigrant segment, Mexican Americans, only 44% had completed high school or more (Lowell & Suro, 2002).

The impact of education levels of adult Mexican immigrants can be seen on the composition of Hispanic births. In 2002, about 70% of the 877,000 Latino babies born in the United States had a mother of Mexican origin. And, among the 877,000 Hispanic babies, only 52% had a mother who had a high school diploma or more, and only 8% had a mother with a college degree. In contrast, 88% of the White babies had a mother who had graduated from high school or more, and 34% had a mother with a college degree (Martin et al., 2005). Therefore, children from low income and Mexican-origin families seem to be a prime group to target via improved research outcomes, policy, and practice.

The low average educational attainment level (and associated low average income) of Hispanic parents—especially of Mexican origin—is important, because it is correlated with the much lower academic achievement (lower grades and standardized test scores) that Hispanic students have relative to Whites throughout the K-12 years and in higher education as well. This is unsurprising, as there is now an extensive body of research going

back four decades documenting that children and youth from families with little formal education achieve at much lower levels in school, on average, than those from families in which the parents have completed bachelor's or graduate and professional degrees (Coleman et al. 1966; Campbell, Hombo & Mazzeo, 2000; College Board, 2000).

Despite extensive efforts over the past few decades in the United States to raise academic achievement among educationally and economically disadvantaged elementary and secondary school students, including low socioeconomic status (SES) Hispanics, progress has been slow (Grigg, Duane, Yin & Campbell, 2003). It has been especially difficult to raise achievement levels in high school, a problem of increasing concern to policymakers (Olson, 2005).

On a more promising note, there is a growing body of evidence that high quality prekindergarten programs (those for 3- and 4-years-old) can have a positive impact on the school careers of many children, particularly those from low SES families (Bowman et al., 2001; Gormley, Gayer & Dawson, 2004; Gormley & Phillips, 2005; Heckman & Masterov, 2004; Reynolds, 2003). Specifically, research has determined that a strong predictor of high quality prekindergarten programs is the background and training of its teachers (Howes, Whitebook, & Phillps, 1992). There also are some promising approaches to nurturing the cognitive development of infants and toddlers from disadvantaged circumstances (Love et al., 2002). In addition, some elementary school improvement strategies seem to be producing meaningful academic achievement benefits for low SES students (Borman, Hewes, Overman & Brown, 2002). As a result, there is reason to believe that the period from birth through age eight currently constitutes the best window of opportunity for making improvements in the educational trajectories of disadvantaged children, including Hispanics, in the United States.

Nonetheless, it is important not to overstate the capacity of currently available early childhood education strategies to produce developmental and academic achievement gains. For instance, programs for disadvantaged infants and toddlers still constitute an "emerging" component of the early childhood system in the United States. Not only is institutional capacity limited for infants and toddlers, much needs to be learned about what constitutes the most effective approaches from a developmental standpoint. Among these approaches are ways to prepare culturally and linguistically responsive teachers who can adequately serve Hispanic children through their early education trajectory.

Also, even the most effective approaches to prekindergarten education are only able to narrow school readiness gap between low SES children and their middle and high SES counterparts, including for low SES Hispanics (Gormley, Gayer & Dawson, 2004; Magnuson & Waldfogel, 2005). Similarly, at the elementary school level, there is still much to be learned about what strategies, especially in the PK-3 period, may be most academically beneficial for Hispanic students (Borman, Hewes, Overman & Brown, 2002).

Furthermore, Hispanics have been less likely over the years to attend center-based prekindergarten than their African American and White peers. For instance, in 1999, Hispanic children represented 30% of poor children, but only 24% of participants in Head Start, the federally funded preschool program for low-income children (National Council of La Raza, 2004). Thus, low SES Hispanic children have had less opportunity over the years to use preschool to develop school readiness skills needed to get off to a good start academically in the primary grades. Fortunately, Hispanic participation in Head Start programs has been growing. In 2002, Hispanics constituted nearly 30% of Head Start enrollment (Head Start Bureau, 2003). Using data from the Head Start Bureau and the 2000 decennial census, Magnuson and Waldfogel (2005) estimate that 15% of Hispanic three- and four-year-olds are enrolled in Head Start, compared to over 20% of Black three- and four-year-olds.

The three broad purposes of this paper are: 1) to describe what is currently known about early childhood education for Hispanic children in the United States; 2) to describe the educational background of pre-k teachers in the context of the finding that teacher education is a predictor of high quality pre-k programs; and 3) to suggest what might be done to expand and improve early childhood education, including the education of early childhood teachers, in ways that will help more Hispanic children become well prepared to start school and, subsequently, to be academically successful during the primary grades. Consistent with these purposes, this paper focuses on Hispanic children from infancy through the third grade, roughly 0–8 years of age, and the educational background of their teachers. We begin with a review of academic achievement patterns of U.S. children in kindergarten through third grade from the perspective of how Hispanic children compare to their peers from other racial/ethnic groups. Then we review information on how much high quality preschool programs are actually able to improve the school readiness of young children, preschool access, and what might be done to help them to become more effective in this area, especially for Hispanic children. We also explore the required educational credentials for pre-k teachers and their actual educational backgrounds. The final section makes recommendations on how to better prepare future educators of young Hispanic children, identifying topics that need to be addressed if the early childhood education of Hispanics is to be markedly improved in the United States.

K-3 ACADEMIC ACHIEVEMENT

The educational achievement patterns of virtually all racial/ethnic groups are established during the early years of school and change little thereafter. Data from the federal government's National Assessment of Educational Progress (NAEP) testing program offer illustrations of this in the several subject

areas in which students are tested. For instance, in the 2003 NAEP math assessment, about 75% of the non-Hispanic Whites and 44% of the Hispanics in the fourth grade scored at or above the Basic level, and 41% and 15% of the Whites and Hispanics, respectively, scored at or above the Proficient level. Among the twelfth-graders that year, 79% of the Whites and 61% of the Hispanics reached the Basic level or higher, while 42% and 22%, respectively, scored at the Proficient level (Braswell, Daane, & Grigg, 2003).

One of the most valuable sources of information on the early years of school is the federal government's Early Childhood Longitudinal Study, Kindergarten Class of 1998–1999 (ECLS-K). The ECLS-K is an ongoing study of a nationally representative sample of children from the start of kindergarten through the fifth grade. It allows researchers to analyze, for example, academic achievement growth patterns and the influence of home, school, and student variables on these scores. However, one very important data constraint of the ECLS-K is that there is relatively limited potential to analyze some cognitive outcomes for Hispanic students. Direct assessments of literacy skills, for example, for ELL children who did not pass the oral English exam are not available in the database (mathematic assessments were conducted in the ELL child's native language). Thus, during the kindergarten year, there are no reading achievement scores available for nearly 30% of the Hispanic sample (West, Denton, & Germino-Hausken, 2000). By the end of third grade, however, no children were excluded from assessments due to language proficiency, so trend analyses will be possible in this area as students move through higher grades.

Presently, over 200 reports, presentations, books, research articles, and other professional publications on early childhood education in the United States have been produced using the ECLS-K as the principal data source. Even given the limitations of the data, these analyses shed considerable light on the status of Hispanics in early education in the United States.

Analyses of these data show, for example, that Hispanic kindergartners in the United States score significantly lower on ECLS-K cognitive measures than their White and Asian peers as they start school (Denton-Flanagan & Reaney, 2004; Lee & Burkam, 2002; West et al., 2000). Lee and Burkam (2002) found that Hispanic kindergartners in the 1998–1999 school year entered kindergarten with significantly less competence in mathematics and reading than their White and Asian peers. Math and reading scores are a half of a standard deviation lower for Hispanics than their White counterparts at the beginning of kindergarten (Lee & Burkam, 2002).

Though much of this initial academic achievement gap is accounted for by the socioeconomic status (SES) of Hispanics (39% of Hispanics and 9% of Whites start kindergarten in the lowest SES quintile), race/ethnicity is still associated with differences in kindergartners' achievement, after controlling for SES. That is to say the ECLS-K data show that Hispanics (along with African Americans) tend to achieve at lower levels than Whites and Asians on the reading and mathematics during the initial years of school in all SES

categories. Moreover, this is neither a new finding nor one confined to the early grades. For example, "within-class" differences of this kind were found in a secondary analysis of the elementary and secondary school test score data from the well-known "Coleman Report" nearly forty years ago (Okada, Cohen, & Mayeske, 1969).

Indeed, analyses of ECLS-K show that racial/ethnic reading and mathematics performance differences persist in the primary grades, that SES differences among the groups continue to predict much of these difference, and that there are still group differences within SES categories. (Denton-Flanagan & Reaney, 2004; Rathbun et al., 2004; Reardon, 2003; Rumberger & Arellano-Anguiano, 2004; West, et al., 2001). For instance, West et al. (2001) found that Hispanic-White and Hispanic-Asian achievement gaps persisted throughout the kindergarten year in all five measured levels of reading (letter recognition, beginning sounds, ending sounds, sight words, and words in context) and of mathematics (number and shape, relative size, ordinality, addition/subtraction, and multiplication/division).

Rathbun, et al. (2004) show that SES and racial/ethnic achievement gaps continue from the start of kindergarten through third grade. Besides Hispanic children scoring significantly lower than Whites and Asians in mathematics and reading throughout the K–3 years, Hispanic third graders also scored significantly below their Asian and White peers in science (Rathbun et al., 2004).

Immigration status also appears to be linked to early educational achievement patterns attainment. Using ECLS-K data, Han (2004) examined the associations between children's immigrant generation status and their academic achievement in kindergarten and first grade. Findings from the study show that, compared to third and later generation non-Hispanic White children, first- and/or second- generation children from regions in Russia/Eastern Europe, Asia, and Africa had significantly higher reading and math scores, while first- and second-generation children from Latin America had significantly lower scores. In contrast, Han (2004) found that all first- and second-generation children had significantly lower general knowledge test scores than third and later generation non-Hispanic White children.

When analyzing the impact of immigration status on academic outcomes, it is also valuable to consider the role of the child's nationality. For example, Galindo (2005) found that Hispanic mathematic achievement trajectories differed by the child's nation of origin, even after controlling for SES. Holding SES constant, the largest difference at the end of first and third grade was between the Central American (lowest) and the Cuban (highest) scores.

Besides looking at the predictive value of SES and race/ethnicity on cognitive outcomes, it is critical to examine factors that are sensitive to intervention via improved policy and practice so as to diminish pervasive gaps. This is because, while many SES factors, per se, are difficult to modify directly, it is possible to modify many educational and other social policy practices and institutional arrangements. Consistent with that reality, Reardon (2003) explored the

extent to which out-of-school, between-school, and within-school processes contributed to racial/ethnic and SES achievement differences from kindergarten to first grade. Analyzing gap variations, he found that out-of-school processes (i.e., summer time lapse) play an important role in SES gaps; between-school processes (e.g., systematic differences among schools in teacher quality, resources, and curricula) play an important role in race/ethnicity gaps in first grade; and, within-school processes (i.e., students achieving at differential rates within the same school—possibly due to differential treatment) play an important role in both race/ethnicity and SES gaps in kindergarten.

Turner and Ritter (2004) probed parent questionnaire data from the ECLS-K to determine the influence of pre-kindergarten child-care programs on the cognitive outcomes of children from kindergarten to first grade. They found that students enrolled in center-based childcare in preschool years exhibited higher cognitive functioning in math and reading than their peers, although this effect was reduced by first grade. Gormley et al. (2004) also found that students enrolled in state-sponsored pre-kindergarten (in Oklahoma) made substantial cognitive gains that were attributable to the program. Hispanic children especially benefited from participation.

An elaborate effort has been made to evaluate the effect of full-day kindergarten programs on academic achievement and the probabilities of different groups to be enrolled therein (Levitt et al., 2004; Watson & West, 2004). Watson and West (2004) found that children in full-day programs, on average, make greater gains in their reading and mathematic achievement scores from fall to spring of kindergarten than do their half-day peers. About 56% of the nation's kindergarten class of 1998–1999 was enrolled in full-day kindergarten programs; however, while 80% of the blacks were enrolled in full-day programs, that was the case for only 49% of the Hispanics (Watson & West 2004). While both groups need extensive access to full-day programs, ECLS-K data suggest that access for African Americans is much greater than that of Hispanics.

It remains unclear why the disparity between Black and Hispanic participation in full-day programs is so large. It is worth noting, however, that governments are charged with the responsibility of structuring policies that clearly define, provide universal access to, fund, and maintain quality of full-day kindergarten programs (Kauerz, 2005).

Moreover, additional sources appear to account for achievement gaps by SES and race/ethnicity. Among the broad categories are parental/family resources and circumstances (Barton & Coley, 1992), health and nutrition (Behrman, 1996), school attributes, and pre-kindergarten (3- and 4-year-olds) access and quality (Gormley et al., 2004). It is essential that researchers continue to investigate the extent to which—as well as how—these and other broad constructs and more particular processes influence the academic achievement of young school children, including Hispanic children. A primary purpose of such work should be to inform the design, testing,

and assessment of strategies across the 0–8 years that are focused on improving educational outcomes for Hispanic and other children.

As the previous review of studies using the ECLS-K database have suggested, it is proving to be an immensely valuable source of information on factors that influence student achievement in the early years, including from the perspective of strategy development. Moreover, it is valuable not only for its help in generating new insights into factors that influence differences in achievement patterns, but also for its capacity to illuminate or confirm findings from other studies and research. For instance, the within- and between-school academic achievement variations documented by Reardon (2003) in his analysis of ECLS-K data suggest that racial/ethnic and SES achievement gaps are due partly to differing treatments and experiences within and between schools. This has been a longstanding concern among educational researchers. Some potentially important types of between- and within-school differences found in other research include teacher assignment practices (Hanushek et al., 1998; Ferguson, 2003; Oakes, 1985), access to and the quality of preschool programs (Gormley, et al., 2004; Bogard & Takanishi, 2005), instructional practices and/or curricula form and content, teacher expectations and perceptions (Hauser, Sirin, & Stipek, 2003; Good, 1987; Stipek, 2004), ability of teachers and administrators to communicate effectively with parents (Lareau, 1989), and cultural and linguistic mismatches between children/parents and teachers and administrators (Fuligni, 1997). In the following sections we discuss critical issues associated with preschool programs and the preparation of educators who teach in them. Indeed, both of these broad issues bear and will continue to bear on the academic well-being of young Hispanics in the U.S.

PRESCHOOL PROGRAMS

Over the past four decades, our society has gradually increased its educational investment in very young children. Most of this investment has been in three- and four-year-olds via pre-kindergarten programs for that age group. In 1964, approximately one-half million children were enrolled in some form of pre-kindergarten education in the United States. Today, about five million children attend some form of preschool (Jamieson et al. 2001).

This growth has been fueled not only by growing evidence of educational and other benefits of high quality preschool for children (e.g., Barnett et al., 2004; Bowman, et al., 2001; Shonkoff & Phillips, 2000), but other societal changes, including the large increase in mothers working outside the home. In 2002, about 56% of mothers with children less than one year old were employed outside of the home (Wilen, 2003). Thus, for many families, pre-kindergarten provides both educational opportunity and de facto childcare for their young children.

There is now an extensive and diverse infrastructure of pre-kindergarten programs and institutions serving young children, which mainly fall into three broad categories: private preschool programs, Head Start, and state pre-kindergarten programs. It is important to note that, while these three broad categories share certain programmatic and funding characteristics, empirical data suggest that educational quality varies within the categories. Early et al. (2005) explain, for example, that state pre-kindergarten programs "vary dramatically in such areas as: which children in their state are eligible to participate; where the programs are housed (in schools, private and public community centers); how many hours per week the classes meet; teacher education and training requirements; amount of funding provided by the state; the ways in which providers blend funds from state and non-state sources; and, the ages of children who can receive services".

Private preschools. Both for-profit and nonprofit groups, including religious organizations, operate these programs. They are typically called nursery schools, preschools, and child day care programs. These programs vary in the age ranges they serve. For example, nursery schools may serve infants and toddlers (newborns to 3-year-olds), while preschools generally serve only 3- and 4-year-old children (but some serve infants to 4-year-olds). Compared to center-based programs, home-based or family child care programs often serve a broader age range, including some that serve newborns to 11- or 12-years-olds. The programs also vary in terms of the amount of time they care for children, from half-day to all day care, i.e., from 15 to 50+ hours per week (Barnett et al., 2003, 2004; Wilen, 2003).

Head Start. This federally funded program, founded in 1965, provides comprehensive education, health, nutrition, and social services to low-income families across the nation, including pregnant women and their families. It enrolls children from birth to age 5. Under the umbrella of Head Start are the traditional Head Start programs, which serve 3- to 5-year-olds; Early Head Start, which serves pregnant women and children from birth to age 3; and, Migrant and Seasonal Head Start, which serves migrant and seasonal workers' children from 6 weeks old to age 5 (Kloosterman et al., 2003). Data analyses conducted to determine the cognitive gains of Hispanic Head Start participants show that large and significant benefits accrue to Head Start children when compared to Hispanic children who do not participate in the program (Currie & Thomas, 1999; U.S. Dept. of Health & Human Services, 2005). Positive impacts are noted in pre-reading, vocabulary, and pre-writing (U.S. Dept. of Health & Human Services 2005). However, these benefits are not evenly distributed across subgroups of Hispanic children. In a study comparing cognitive outcomes of participant and non-participant Hispanic siblings, Currie and Thomas (1999) found that gains from Head Start are greatest among children of Mexican origin and children of native-born mothers.

State-sponsored pre-kindergartens. States have become increasingly involved in providing educational services for families and children prior to starting elementary school. According to a report by the National Institute for Early Education Research (NIEER), pre-kindergarten programs began in the 1970s and followed Head Start's approach of targeting children with the greatest needs: children with disabilities and those from in low-income families (Barnett et al., 2003). However, states currently vary a great deal in the composition of the population that they serve with their pre-kindergarten programs.

In the 2002–2003 school year, 38 states funded one or more state pre-kindergarten initiatives that were serving nearly 740,000 children, which was about 45,000 more than were served the previous year (Barnett, et al., 2004). States offering multiple pre-kindergarten options might provide state-subsidized Head Starts, pre-kindergartens, and early education for children with disabilities. Several states still do not provide any state monies for the education of children between the ages of 3 and 5, other than for children with disabilities. Recently, a few states, including Georgia and Oklahoma, began to offer universal access to pre-kindergarten, meaning gratis pre-kindergarten services for all children.

In general, most states offer a set of educational programs serving 3- and 4-year-olds that are part of a formal, state-funded educational initiative. The programs may be administered by a variety of government agencies, such as state education or human service departments. The programs may be housed in various locations, including public schools, Head Start centers, and community-based child care centers (Barnett et al., 2003, 2004).

Early educational programs—private preschools, Head Start, pre-kindergarten, and kindergarten programs—have experienced major enrollment growth over the past three decades. However, the U.S. Census Bureau data show that enrollment in these programs varies a great deal by race/ethnicity (Jamieson et al., 2001). Of particular importance for this analysis, although Hispanics represent a large, rapidly growing share of the nation's young children, they are the least likely to be enrolled in a preschool program. The enrollment rate for Hispanics in preschool programs is about 32%, while the rates for non-Hispanic Whites and African Americans are, respectively, 55% and 50% (Jamieson et al., 2001).

Some believe that the relatively low enrollment rate of Hispanics in early childhood programs may be partly linked to a preference for providing child care directly at home by the mother or close relative, and reluctance to turn over the care of their child to a non-relative (Schwartz, 1996). However, others point out that (low) family income is associated with the lower preschool enrollment rate of Hispanics (Hernandez, Denton, & Macartney, 2004). According to Jamieson et al. (2001), because pre-k programs are not part of the regular public school system in most areas and are predominantly private, the cost may prevent many Hispanic families from enrolling

their children. Indeed, of the children enrolled in early childhood education programs, African Americans (77%) and Hispanics (76%) were more likely than non-Hispanic Whites (36%) to be enrolled in public rather than private programs. And, 81% of low-income pre-kindergarten students attended public programs, compared to about 29% percent of the high-income students (Jamieson et al., 2001).

Recently, Hernandez et al. (2004) reported on variables that may account for why Hispanic and immigrant families are less prone to enroll their children in preschool programs. They found that both immigrant and native-born Hispanic parents are less likely than non-Hispanic Whites to enroll their children in preschool programs. For instance, among children in immigrant families from Mexico, Central America, and the Dominican Republic, as well as those in Mexican-American and Puerto Rican families, preschool enrollment rates at age 3 are from 4% to 20% lower than the rate for non-Hispanic Whites, and these gaps increase for four-year-olds. Through multivariate analyses, Hernandez, et al. (2004) found that financial, linguistic, and educational barriers are associated with these Hispanic pre-kindergarten enrollment gaps. Given the potential cognitive and other school readiness benefits of preschool for Hispanic children, their lower enrollment rates are costly to children, their families, and the general society (Gormley et al., 2004). Indeed, Gormley et al. (2004) found that the Tulsa pre-kindergarten program increased cognitive/knowledge scores by approximately 0.39 standard deviation, motor skills scores by approximately 0.24 standard deviation, and language scores by approximately 0.38 standard deviation. Impacts were found to be the largest for Hispanic children.

In an analysis of data from the National Household Education Survey (NHES), Fuller et al. (1996) highlighted that a number of family characteristics that uniquely contributed to low enrollment of Hispanic children in pre-k programs. In addition to the effects of maternal employment and household income, they found that children were less likely to enter a pre-k program when they were younger (age three, not four-five years), when a father or another adult resided in the household, when mother had a low educational attainment, and when children's books were less evident in the household (Fuller, et. al., 1996). Hispanic families, of course, are particularly distinguished by these characteristics. They also found that the Hispanic pre-k enrollment gap persisted even after controlling for the aforementioned factors, and hypothesized that cultural differences may account for further differences in enrollment rates.

Such research findings suggest that low Hispanic preschool enrollment is due to a number of interacting family characteristics, not only poverty and low maternal education. Furthermore, it is argued that in order to increase Hispanic enrollment in quality pre-k programs, the policy and research discourse ought to transition from the "at-risk" metaphor to a discussion of ways to consider adding to the already present strengths of Hispanic families.

Another factor that may be limiting the participation of Hispanic children in early childhood education programs is that many recent Hispanic immigrants have been settling in areas where there have historically been few Hispanics. This is illustrated by U.S. Census data showing that several states in the South had very large percentage increases in their Hispanic populations between 1990 and 2000, rates that that were considerably higher than those of "traditional" Hispanic states, such as California, New York and Texas. For example, Hispanic population growth rates in this period were 394% in North Carolina, 300% in Georgia; 211% in South Carolina; and 208% in Alabama (Guzmán, 2001).

Few states, including high Hispanic-growth states in the South, currently provide preschool programs to more than 20% of the 4-year-olds in their populations (Bryant et al., 2004). And other providers of preschool may have enrollment capacity limits in many communities (Barnett et al., 2003, 2004). Consequently, many parts of the South may not be equipped to provide newcomers with adequate child care and preschool services.

Lack of access of migrant children to preschool programs is evidently another source of the relatively low preschool enrollment rate of Hispanics. As of 2003, the Migrant Seasonal Head Start (MSHS) programs were assisting 30,568 migrant children and 3,052 seasonal children in 450 MSHS centers across the nation (Kloosterman et al., 2003). Nonetheless, according to the National Council of La Raza (2004), more than 80% of farm worker families do not have access to MSHS programs due to a lack of federal funding.

Beyond the preschool level, most 5-year-old children attend kindergarten. However, differences exist in student enrollment by race/ethnicity and family income in full-day kindergarten versus half-day programs. In 2001, about 76% of African American kindergartners were enrolled in full-day programs, compared to 56% of non-Hispanic Whites, 60% of Hispanics, and 57% of Asians/Pacific Islanders (National Center for Education Statistics [NCES], 2004). In addition, children in families with incomes of less than $50,000 were also more likely to attend full-day kindergarten than those from higher-income families.

According to Watson and West (2004), the high enrollments rates of African American children and other economically disadvantaged children in full-day kindergarten may be partly related to a greater need for child-care services. However, Hispanic children are not attending full-day kindergarten at the same rate as African Americans, even though Hispanic enrollment generally in kindergarten is slightly higher (Jamieson et al., 2001). For example, in the 1998–1999 school year, 46% of Hispanics attending public kindergarten attended full-day programs, compared to 79% of African Americans.

Disparities also have been found recently for English language learners (ELL) attending public kindergartens. In the ECLS-K sample of children, only 45% of ELL attended full-day programs (Watson & West, 2004). For the

Hispanic population, it is important to identify reasons that account for lower participation rates in full-day kindergarten programs, because they constitute 72% of the ELL student-age population in the United States (NCES, 2003).

Although federal and state education spending has grown, government funding of early childhood programs remains generally low relative to demand. Currently, many states do not invest enough money to pay for high-quality preschools that research has found provide the most educational benefits for disadvantaged children (Barnett et al., 2003, 2004). In fact, while total state spending for state-funded pre-kindergarten totaled $2.54 billion in 2002–2003, over three-fifths of this funding was from five states—California, Georgia, New Jersey, New York, and Texas (Barnett et al., 2004). This helps explain why state spending per child in state-funded pre-kindergarten programs ranges from less than $1,000 in Maryland to more than $8,700 in New Jersey. Average state spending was just $3,500 per child—less than half of the total funding provided per child in federal Head Start or public K-12 education (Barnett et al., 2004).

In addition, Head Start programs, which are federally funded, serve only 60% of children below the poverty line (Trust for Early Education [TEE], 2004). This is partly a function of the size of Washington's investment in this area. While the federal government spends over $10 billion per year on childcare programs and Head Start, it is far too little to serve all or most disadvantaged children (TEE, 2004).

These figures help explain why an estimated 60% of funding for childcare and pre-kindergarten programs comes from fees/tuition that parents and families pay. It also helps explain why many of the most needy children—a large and growing percentage of which is Hispanic—do not have access to quality pre-kindergarten programs. Insufficient funding can, therefore, translate into lack of access for many children, particularly Hispanic children, who are already underrepresented in preschool programs, including Head Start and state preschool programs. Inadequate funding can also contribute to high teacher turnover and low teacher quality (i.e., educational attainment) in pre-k programs.

PRESCHOOL PROGRAMS AND TEACHER EDUCATION

The correlation between teacher education level and educational quality is finally being acknowledged at the federal level—the U.S. Department of Education considers "teacher expertise" to be "the crucial ingredient" for high quality early childhood education (Dwyer et al., 2000). However, while a bachelor's degree is required for all kindergarten and elementary school teachers, and in some states an early childhood certificate or endorsement is also needed (Kaye, 2005; U.S. Bureau of Labor Statistics, 2004), Congress

has only acted to ensure that 50% of Head Start teachers have at least an associate's degree since 2003. On the other hand, there are no required credentials for teachers in Early Head Start (Hart & Schumacher, 2005).

Requirements also vary greatly between states. The extremes in the state-to-state spectrum of pre-service requirements are represented by New Mexico, which has no requirements, and Rhode Island, the only state requiring both a bachelor's degree and an early education teacher certification for all teachers, including those employed in licensed child-care centers (Edwards, 2002). Overall, about half of the 38 states that sponsor public early childhood programs require teachers to have a bachelor's degree in early childhood or some other subject (Early & Winton, 2001; National Center for Early Development & Learning, 2001; Phillips, Howes, & Whitebook, 1991).

Barnett, Hustedt, Robin, and Schulman, (2004) show the variation in quality of pre-kindergarten programs across the United States by juxtaposing ten quality standards to state-funded pre-kindergarten initiatives for preschool-aged children. The benchmarks used by the National Institute for Early Education Research (NIEER) that relate to teacher education and training are: teacher has a B.A. degree, teacher has specialized training in pre-k, and assistant teacher has a Child Development Associate (CDA) certificate or equivalent.

NIEER's *The State of Preschool: 2004 State of Preschool Yearbook* shows that Alabama, Arkansas, Illinois, Kansas, Louisiana, Maine, Maryland, Nebraska, Nevada, New Jersey, New York, North Carolina, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, and West Virginia all require their state funded preschool teachers to have a bachelor's degree. On the other hand, Alaska, Florida, Idaho, Indiana, Mississippi, Montana, New Hampshire, North Dakota, Rhode Island, South Dakota, Utah, and Wyoming do not fund any state pre-kindergarten initiatives that meet the NIEER criteria, though Rhode Island requires that the teachers that serve in its public pre-k programs possess a baccalaureate degree and undergo specialized training in early childhood.

Training standards are generally highest within state-funded prekindergarten programs—known as universal Pre-K (UPK) in states where access is provided to all 4-year-olds. This fact is important not just for the direct educational benefits to the students and society, but because they highlight the need to expand our capacity to train highly educated new early childhood educators. Currently, less than 30% of the institutions of higher learning that offer associate's and bachelor's degrees in the United States have early childhood programs. It is estimated that if all early childhood teachers were required to attain at least a bachelor's degree, there would be a need of 76% more early childhood faculty (Early & Winton, 2001).

As previously mentioned the educational requirements of state-funded UPK programs are generally higher than those for other state-funded programs. For example, in Oklahoma's UPK programs all lead teachers have a

four-year degree and a certificate in early-childhood education. They are also required to fulfill a 15 clock-hour, in-service assignment (Gormley & Phillips, 2005). However, not all early childhood care providers in the state of Oklahoma are educated to the same degree. For example, the requirements for licensing for a lead teacher in a private child care center is that they be at least 19 years of age, have a high school diploma or equivalent, and have a minimum of 12 credit hours in early childhood education or a related field (Gormley & Phillips, 2005).

In New York, all UPK teachers are required to possess a Birth–Grade 2 certification (Lekies & Cochran, 2002). The professional teaching certificate has more rigorous requirements. The teachers are required to have a master's degree (Barnett et al., 2004) from an approved teacher education program or field related to their area of teaching, have one year of mentored teaching and have two additional years of successful teaching experience (Lekies et al., 2001). All teachers with professional certification must complete 175 hours of continuing education every 5 years to maintain their teaching certificates. In addition, teacher education programs are required to meet higher standards and to obtain and maintain accreditation, especially because if any education program has less than 80% of their graduates pass the state certification exams it will lose state funding.

In the District of Columbia teachers in UPK are required to have a B.A. degree with specialized training in Pre-K–3rd grade. Assistant teachers in state pre-kindergarten programs are required to have a high school diploma and at least 15 hours of in service development (Henry et al., 2002).

Lead teachers in the Georgia UPK program must have at least a high school diploma and a child development associate (CDA) or a college degree in a field related to child development or education (Ackerman, 2004; Edwards, 2002). Although Georgia allows its lead UPK teachers to have less than a four-year degree in early-childhood education, most teachers are highly educated.

The situation is generally much worse in the private sector—most states do not require teachers in early childhood education (ECE) centers to have any type of training beyond a high school diploma (Barnett, 2003; LeMoine, 2002). Some pre-service training is required of private-sector early educators in eighteen states (Ackerman, 2004), but only four of these (California, Massachusetts, Rhode Island, and Vermont) require that this training be provided by a college or university (Barnett et al., 2004). On average, privately employed ECE teachers are required to undergo just over 13 hours of ongoing training annually, but this number varies nationally from zero to thirty (Saluja et al., 2002). In addition, only 7% of private ECE centers nationwide have received accreditation through the National Association for the Education of Young Children, which is considered to be a benchmark of quality (Surr, 2004). Nowhere is the public sector-private sector dichotomy more apparent than in New York, which has no requirement for early educators

in the private sector, but requires its publicly employed educators to obtain a master's degree (Head Start Act-Community Opportunities, Accountability, and Training and Education Services Act of 1998, 1998).

In general, the academic attainment of our nation's educators is commensurate with the requirements placed upon them. Preschool programs based in public schools have the largest proportion of preschool teachers with a bachelor's or graduate degree at 88%. In response to the 1998 law requiring 50% of Head Start teachers to obtain at least associate's degrees by 2002 (Hart & Schumacher, 2005), the credentials of these teachers improved so that by 2003, 27% of Head Start teachers had an associate's degree, 27% had a bachelor's degree, 4% had a graduate degree in early education or a related field, 27% had a child development associate (CDA), and 16% had none of the degrees mentioned above (Hart & Schumacher, 2005). By contrast, only 41% of Early Head Start teachers, on whom no such requirement had been placed, had an associate's degree or higher in the same year (Barnett, 2003; Saluja et al., 2002). Overall, just over 50% of early childhood educators hold a four-year degree (Saluja et al., 2002), with many never having attended college (Barnett, 2003).

These trends are duplicated at the state level; teachers in UPK, on average, have more education than teachers in Head Start and teachers in private preschools. In 2002, Henry et al. (2002) found that 26% of early childhood teachers in Georgia's UPK program had advanced degrees, 54% had bachelor's degrees, 7% had associate's degrees, 13% had less education than an associate's degree. By comparison, only 13% of Georgia's Head Start teachers have a bachelor's degree, 17% had an associate's degree, while 70% had an education that is less than college. In Georgia's private early childhood education sector, 5% of teachers had obtained advanced degrees, 20% had bachelor's degrees, and 75% have less than college with 0% having an associate's degree..

Findings concerning the low education of ECE teachers are not surprising when one considers the low wages typically earned by early childhood educators, which some researchers found to be as low as $6.25 per hour (Whitebook, 2003). According to some researchers, the ECE field has a "higher concentration of poverty-level jobs than almost any other occupation in the United States" (Hart & Schumacher, 2005). Such low wages are certainly a contributing factor in the 30% overall turnover rates for ECE teachers nationwide (Whitebook, 2003). Wages and turnover are linked to education level: highly educated early childhood teachers obtain higher wages (Laverty, Burton, Whitebook, & Bellm, 2001) and experience lower turnover rates, (Saluja et al., 2002) while turnover at private ECE centers, with their less educated workforce, is between 20% and 60% (Colorado Student Obligation Bond Authority, 2003).

There are significant barriers for teachers who wish to improve their academic credentials. The average age of an early childhood educator is 39

years (Saluja et al., 2002). As a result, parenting and other family demands may play a role in limiting teachers' ability to update their credentials. Low wages might also present a financial barrier to improving credentials for many teachers. And, as has already been mentioned, the capacity of the nation's institutions of higher learning for training new early childhood educators is low so that students may need travel long distances in order to attend classes.

IMPLICATIONS FOR NEW EDUCATORS

One of the most important educational challenges for the United States is to markedly increase the percentage of Hispanic children who enter kindergarten "ready" for school and who, subsequently, get off to a good start academically in the primary grades. This has become a pressing need for several reasons. First, Hispanics are now the nation's largest minority group and their share of the population is expected to continue to grow rapidly for several decades. Second, Hispanics, on average, continue to achieve at much lower levels from kindergarten forward than the non-Hispanic White majority as well as Asian Americans. Moreover, this relatively low academic achievement is not limited to Hispanic youngsters from economically and educationally disadvantaged circumstances. Third, available evidence suggests that the early childhood years provide possibly the best window of opportunity for improving the academic trajectories of Hispanic youngsters. This conclusion reflects evidence that high quality preschools can improve the school readiness of many children, especially those from disadvantaged backgrounds. The preparation of teachers who serve the young Hispanic population continue to play an important role in this regard.

Evidence shows that current preschool programs are capable of closing only part of the "achievement gap" between Hispanics and Whites and Asians. Thus, there is a need both to expand Hispanics' access to high quality versions of the most effective current approaches to early education and to find ways to improve the effectiveness of infant and toddler programs, preschools, and K-3 schooling for Hispanic youngsters; including the preparation of early educators.

To improve the educational experiences for young Hispanics, credentialing requirements placed upon their teachers (degrees, coursework, and in-service training) must be mindful of the shifting demographics in the country and of the particular needs of Hispanic students. In a study conducted by NCES (1998), only one of every five educators who taught students from multicultural backgrounds felt prepared to meet the needs of their students. Because student-teacher relationships are a key determinate of the quality of an early educational environment (Barnett, 2003), linguistic and cultural understanding is critical for teachers to develop trusting

relationships that keep Hispanic students connected to schools (Delpit, 1988; Foster, 1989; Lucas, 1997; McDermott, 1977). Indeed, teachers must be trained to frame educational materials to young Hispanics in linguistically and culturally appropriate ways (Garcia, 2001).

In addition, these educators will need to find culturally appropriate ways to integrate and involve Hispanic parents. According to Garcia and Levin (2001), parental educational involvement has positive effects on the educational outcomes of children including gains in academic achievement, more positive attitudes toward school, and better homework habits. Unfortunately, the development of strong relationships with Hispanic parents is a rarity among today's teachers, a fact acknowledged by many preschool teachers and program administrators in a recent study (Buysse, Castro, West, & Skinner, 2004). In another study, Hispanic parents reported feeling unwelcome in their children's schools, some reporting that teachers make them feel like little children, and that they feel disrespected when they go to school meetings (Ramirez, 2003). Moreover, Ramirez found that many parents felt that parental involvement in schools would be improved greatly if the schools offered interpreters who spoke Spanish. When the parents were asked what they would want pre-service teachers to learn from teacher preparation programs their answers centered on themes of care and respect.

Espinosa (1995) makes the following suggestions on how teachers can assist in involving Hispanic parents in their children's academics: 1) communicate with the student's parents in their primary language when first making contact, 2) always be nonjudgmental with the parents, 3) written communications to students' home should be written in Spanish as well as English, 4) have a clear idea and share with the parents how being part of their involvement in the classroom at the school will help them in their role as parents. The teacher should learn as much about the children and their culture and background as possible, as this will help make an environment where parents will feel comfortable. A solid understanding of the parents' culture and expectations will also help teachers and schools avoid alienating their student's families.

As noted, a major concern of early education programs that serve the Hispanic population is the lack of Spanish speaking professionals. Ray, Bowman, and Robbins (2005) examined course requirements for 167 teacher programs for early childhood (EC) educators (pre-k through 3rd grade) at four-year universities around the country. They concluded that only 20% of universities require ECE students to study a foreign language. This is startling in light of the evidence to suggest that incorporating Spanish in classroom instruction can positively impact early academic achievement of Hispanic ELL (Jensen, 2005). Thus, education programs should require some proficiency in Spanish of teachers who will be working with young Hispanic who are learning English as a second language.

FURTHER RESEARCH[1]

In conclusion, a number of critical items will need to be pursued in order to improve and sustain achievement of young Hispanic children in the U.S. Importantly, much better information will be needed regarding who young Hispanics are and how they are doing developmentally and academically. Hispanics are very diverse in terms of SES, national origin, nativity, generational status, and English language proficiency. Available evidence also indicates that developmental and academic achievement patterns and trajectories vary considerably during the early childhood years. Having more precise information about the sizes of various Hispanic subpopulations and their developmental and achievement patterns could help guide efforts targeted to their needs. For instance, much more needs to be known in these areas about the growing number of Mexican American youngsters from low SES immigrant families who are also English language learners.

In a related vein, if the quality of early education is to be improved for Hispanics, much better information will be needed regarding factors that influence the developmental and achievement patterns of the Hispanic population. These, of course, include characteristics and conditions of the preschools and elementary schools available to Hispanic youngsters, including the education and skills of the educators, what educational and developmental opportunities are actually provided, and so forth. Relevant factors also include such things as the economic resources of their families and communities, the education levels of their parents, the children's health, and the like.

Central to efforts to improve early education opportunities will be initiatives designed to expand understanding of the productivity of existing early childhood programs and strategies for Hispanic youngsters. Few model preschool strategies or large-scale programs have been extensively evaluated with Hispanics youngsters as a whole. Probably more important, there are few that have been tested and evaluated with a number of different subpopulations, e.g., middle class Puerto Ricans or ELL Mexican American children from low SES immigrant families. This is the case for strategies for improving K–3 education as well. Finding ways to expand both quantitative and qualitative assessment of existing strategies for several subpopulations should be regarded as a very important near-and-medium-term priority for those concerned with improving early education of Hispanics.

Even if efforts to assess existing strategies are greatly expanded, there also is a need to engage in a similar expansion of efforts to design and test new or modified early childhood strategies for different segments of Hispanic

[1] This closing section was mostly written by L. Scott Miller, and was taken from a working draft synthesis paper entitled *Early Childhood Education of Hispanics in the United States*, co-authored by E. García, B. Jensen, L. S. Miller, and T. Huerta. This paper can be downloaded at http://www.ecehispanic.org/white_paper_Oct2005.pdf

students. This is because available evidence suggests that, in general, existing preschool and K–3 produce modest improvements in school readiness and academic achievement for children.

Yet another challenge for educators and policymakers in the years ahead will be to develop stronger capacities and systems to support full and consistent implementation of effective approaches to early childhood education. While this is a general need, there also are undoubtedly a number of Hispanic-specific considerations. For example, there is a general continuing need to improve the knowledge and skills of preschool educators, both on a preservice and an inservice basis. In the case of educators who will be working with large numbers ELL Hispanic children from low SES immigrant families, there is a need to help more of these individuals learn to communicate effectively in Spanish with the parents and the children.

Finally, because Hispanic children continue to be underrepresented in preschool programs and full-day kindergartens, more information is needed on why this is the case and what might be done to increase participation, including the preparation of new educators for these children.

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