ARTICLE IN PRESS

Construyendo en la Fuerza: Approaches to learning and school readiness gains in Latino children served by head start

Andres S. Bustamante [b,*], Annemarie H. Hindman [a]

[a] Temple University, 1301 Cecil B. Moore Ave, Philadelphia, PA 19122, United States
[b] University of California Irvine, 3200 Education Bldg, Irvine, CA 92697, United States

ARTICLE INFO

ABSTRACT

Latino children are the fastest growing minority group in the United States and in order to best serve this population we need research to inform educators on specific cultural strengths that can be fostered and developed. Despite the known academic achievement gap between Latino children and their non-Latino peers, ecocultural strength based research efforts have identified domain general skills like social emotional skills and executive functioning as unique strengths of Latino children. This study used the FACES 2009 dataset to explore approaches to learning as another possible set of domain general skills that may be a strength for Latino children from low-income families. On average, Latino children had higher scores in approaches to learning in the fall and spring of the Head Start year. Additionally, being Latino significantly predicted gains across the Head Start year in approaches to learning ($\beta = 0.153$, $p = 0.024$) (i.e., predicting spring score, controlling for fall), accounting for a constellation of relevant covariates. Conversely, being Latino negatively predicted academic school readiness in the fall ($\beta = -0.175$, $p = 0.021$), yet positively predicted gains in academic school readiness across the year ($\beta = 0.129$, $p = 0.017$), all controlling for the same covariates. However, once approaches to learning is added to the model it became a significant predictor of gains in academic readiness ($\beta = 0.132$, $p < 0.001$), and being Latino no longer was ($\beta = 0.084$, $p = 0.152$). This pattern of results suggests that approaches to learning is a strength that Latino children bring to the early childhood classroom that mediates their gains in academic school readiness. Results lend support for including approaches to learning as an intentional focus in a strength based approach to educating Latino children that leverages their competencies to empower them in the classroom.

© 2018 Elsevier Inc. All rights reserved.

1. Introduction

Latinos are the largest and fastest growing minority group in the United States; in fact, one in four U.S. children is Latino. This group currently makes up nearly 24% of American children in early child care settings, and fully 40% of children served by Head Start (Murphey, Guzman, & Torres, 2014; Passel, Cohn, & Lopez, 2011). In order to best serve this expanding population, research that explores strengths and vulnerabilities of children from Latino families is needed, as they are in many cases culturally and linguistically distinct from their African American, Asian American, and White peers. Indeed, an estimated 73% of families in which at least one parent identifies as Latino speak Spanish at home (Stepler

& Brown, 2015). While some research suggests that Latino children have an advantage in certain non-academic skills (i.e., social emotional competence and executive functioning), they are consistently behind their peers in academic school readiness upon kindergarten entry, a gap that persists throughout the school years (De Feyter & Winsler, 2009; Espinosa, 2011; Gandara, Rumberger, Maxwell-Jolly, & Callahan, 2003). This gap represents a pressing challenge to the aim of the nation's school system: to help children from all backgrounds achieve an equal footing from which to pursue achievement and success.

A vast body of research suggests that social emotional and executive functioning skills positively predict academic school readiness (Bulotsky-shearer, Bell, Carter, & Dietrich, 2014; Galindo & Fuller, 2010; Nayfeld, Fuccillo, & Greenfield, 2013). From a strength-based perspective, early advantages in social emotional competence could be leveraged as valuable assets that support other aspects of children's academic school readiness outcomes (Cabrera, 2013; Lamb-Parker, LeBuffe, Powell, & Halpern,

* Corresponding author.
  E-mail addresses: andres.bustamante5@gmail.com (A.S. Bustamante),
ahindman@temple.edu (A.H. Hindman).

2008). However, such an approach would benefit from identifying specific skills sets in which Latino children may be especially strong. Intriguingly, an emerging body of evidence suggests that approaches to learning may be one such skill set (Bulotsky-Shearer, López, & Mendez, 2015; Galindo & Fuller, 2010). This study aims to extend previous research that demonstrates Latino children's advantage in social emotional and executive functioning skills to explore the nature of children's approaches to learning in a nationally representative sample of children served by Head Start, as well as to estimate unique contributions of approaches to learning to these children's school readiness. In this way, we endeavor to expand and enrich the discussion on strength-based supports for young children from Latino backgrounds in the United States.

2. Latino children in the United States

Of the 74 million children in the United States, 17.5 million are Latino (i.e., descended from residents of Spanish-speaking countries in Central and South America, the Caribbean, and Spain). While some are immigrants from other nations, the overwhelming majority (93%) were born in the U.S., and over 40% of them have roots in the U.S. beyond their parents' generation (Murphey et al., 2014). In total, 73% of families of Latino backgrounds speak Spanish at home, although 59% of parents identify themselves as also proficient in English (Stepler & Brown, 2015). Evidence shows that, although this group is socioeconomically diverse, rates of poverty are higher (30%) among Americans of Latino heritage than among Americans of White backgrounds (10%).

At the same time, however, a large body of research has discovered a variety of powerful, adaptive characteristics of Latino communities. For example, Latino children are more likely to eat dinner with their family six or seven nights per week than children from other racial/ethnic backgrounds, and the majority of Latino children live with both parents (Murphey et al., 2014). Moreover, Latino families, on average, place a high value on children's offering of *respeto*, or respect, to others in the community, as well as admiration for educators as experts (Calzada, 2015). These strong family traditions, structures, and expectations support child development and family functioning and may partially explain why, despite disadvantages in other areas, Latino children enter school with domain-general skills, such as social emotional and executive function skills, on par with or ahead of their non-Latino peers (Murphey et al., 2014). However, research has unequivocally established that there is tremendous variation across Latino families in their home cultures and child-rearing practices (Espinosa, 2013), making this an important population to learn more about, particularly in datasets with large, diverse groups of Latino participants.

3. Academic school readiness deficits in Latino children

Latino children enter kindergarten significantly behind their White peers in academic school readiness, and this gap persists over time (Reardon & Galindo, 2009). For example, Latino kindergarteners are 22% less likely to recognize all the letters of the alphabet, 27% less likely to count to twenty, and 11% less likely to write their first name upon kindergarten entry than their White and African American peers (Murphey et al., 2014). They are also less proficient in English, with English vocabulary scores about one standard deviation below those of native speaking children (Hindman & Wasik, 2015), despite the fact that English is a part of the language profile of most households. Many large-scale studies have replicated this persistent gap across all academic outcomes (Duncan & Magnusun, 2005; Fryer & Levitt, 2004; Gandara et al., 2003), yielding a great deal of conjecture about the nature of this gap.

Studies suggest that this readiness gap upon kindergarten entry is at least partially caused by Latino children's relatively lower English language proficiency at school entry. As evidence is the fact that Latino children make strides in closing the achievement gap with native speaking peers while their English improves during the early elementary years. However, because dual language learner (DLL) status alone does not explain the disparity, a sizable academic achievement gap remains throughout elementary school and persists over time (Espinosa, 2013; Magnuson & Duncan, 2014; Reardon & Galindo, 2009). Certainly, this gap is linked to the disproportionate risks of poverty noted above (Murphey et al., 2014); notably, low-income Latino children score, on average, one full standard deviation below test norms on Spanish vocabulary measures and two full standard deviations below standardization norms on English measures (Hindman & Wasik, 2015). Two implications for research follow from this phenomenon: first, best practices for researching young Latino children who are DLLs include assessing them in English and Spanish to obtain the most accurate and rigorous assessments of their knowledge (Barrueco, Lopez, Ong, & Lozano, 2012). And second, more research focusing on supporting Latino children from low-income backgrounds is sorely needed.

4. Advantage in social emotional skills in Latino children

Fortunately, despite the academic achievement gap that especially plagues those from low-income households, Latino children have many strengths on which educators can build. To reduce the achievement gap, these strengths should be explicit areas of focus for researchers and educators alike. A strength-based approach identifies and builds on areas where children are already competent to foster development in other, less competent domains (Lamb-Parker et al., 2008). This shift from a deficit model to a greater focus on children's positive attributes is particularly important for Latino and other ethnic minority children who are so often viewed from the deficit lens that their strengths are overlooked (Cabrera, 2013).

For example, Quirk and colleagues (2013) examined a group of 781 Latino children at kindergarten entry on academic and social emotional school readiness. They found that Latino children were behind in academic school readiness, with less than one third of the children reaching the moderate range. At the same time, more than half of these children were in the moderate or high range in social emotional readiness, including cooperative play, emotional self-regulation, and ability to follow rules (Quirk, Nylund-Gibson, & Furlong, 2013). Several studies show this same pattern of results, where Latino children have strong social emotional skills (e.g., emotion regulation, attachment/closeness with adults, and low behavior problems) and diminished math and language outcomes (Crosnoe, 2007; De Feyter & Winsler, 2009). Moreover, taking a longitudinal approach, Han (2010) examined social emotional trajectories from kindergarten to fifth grade and found that Latino children had equal or better trajectories in self-regulation, interpersonal skills, and lower frequency of internalizing and externalizing behavior problems than their White peers, despite the fact that the latter were far more advanced in their academic skills (Han, 2010).

An eco-cultural perspective recognizes the important and potentially very positive role that family, community and culture play in a child's development and helps to explain these social emotional advantages (Reese, Garnier, Gallimore, & Goldenberg, 2000). In an eco-cultural approach, educators capitalize on children's social and cultural capital to promote positive development (Rueda, Monzó, & Arzubiaga, 2003). Indeed, recent work using this approach has identified several assets with which Latino culture equips young children, which may help to explain social emotional advantages. One is the aforementioned value of "respeto," which

emphasizes respect for adults particularly through compliance and obedience, and sets children up for success in regards to classroom prosocial behavior (Calzada, 2015). Additionally, there is an emphasis in Latino culture that children be "bien educado," meaning they have good manners, strong moral character, and again prosocial behavior (Bridges et al., 2012). Third, parent/caregiver-child attachment, a consistent predictor of positive social development, may be particularly strong in Latino families. For example, Howes and Wishard Guerra (2009) revealed strong child-mother and child-alternative caregiver (other relatives and childcare providers) attachment in the birth-to-three age range in a sample of Latino children from low-income families. This is meaningful, as low income is a common risk factor for insecure attachment and this study suggests strong family ties and a warm cultural environment may mitigate that risk in Latino families (Howes & Wishard Guerra, 2009). An essential feature of the eco-cultural perspective is that these strengths may support areas of challenge. Empirical work among Latino families aligns with this idea; for example, Oades-Sese, Esquivel, Kaliski, and Maniatis (2011) demonstrated that Latino children had advanced social emotional skills, and – critically – those skills predicted advantages in language outcomes at the end of first grade (Oades-Sese et al., 2011).

5. Advantage in executive functioning in Latino children

Executive functioning skills, comprised primarily of working memory, cognitive flexibility, and inhibition, represent another area where Latino children have shown an advantage. Executive functioning skills, which are higher order cognitive abilities that involve management of one's own attention (e.g., inhibiting impulses, switching focus) are closely implicated in social emotional skills as well as academic skills, even as they are fundamentally distinct (Elliott, 2003). Latino children's executive functioning advantages are likely attributable, at least in part, to the dual language experiences relevant for the vast majority of Latino children (for review see Barac, Barac, Bialystok, Castro, & Sanchez, 2014). The theory behind this bilingual advantage is that children who have to switch between two languages are practicing their cognitive flexibility and often have to inhibit their initial impulse to speak in their dominant language in out-of-home settings (White & Greenfield, 2017). In turn, because flexibility and inhibition are two core components of executive functioning, children's daily experiences with dual language ultimately strengthen their executive functioning skills (Carlson & Meltzoff, 2008). Specifically, Carlson and Meltzoff (2008) examined executive functioning in three groups of children: Latino bilingual children, non-Latino monolingual children, and non-Latino children in language immersion classrooms (either Spanish or Japanese). They found that, despite Latino children having significantly lower verbal scores and parent education/income levels, they had better executive functioning than both comparison groups (Carlson & Meltzoff, 2008). Further, White and Greenfield (2017) found that both Latino bilingual children and Latino monolingual Spanish-speaking children had higher executive functioning than monolingual English children (White & Greenfield, 2017). Given the advantage in executive functioning and social emotional skills for Latino children, one might expect this advantage to extend to other conceptually related domain-general skills, such as approaches to learning.

6. Advantage in approaches to learning in Latino children

Approaches to learning refers to a set of domain-general skills that help children navigate learning situations such as investigating a new idea, solving a problem that arises in a challenging activity, or working collaboratively with adults or peers to complete an assign-ment. Discrete components of the approaches to learning construct include strategic planning, persistence, open-mindedness, sustained focus, and group learning, which help children learn regardless of the academic content domain (McDermott, Rikoon, & Fantuzzo, 2014). Simply put, approaches to learning skills can be thought of as applications of executive functioning and social emotional skills to independent and collaborative learning situations across a wide range of domains (e.g., mathematics, literacy, science). Although a relatively recent addition to the discourse in early learning, this skill set is widely recognized as important; indeed, Head Start has designated approaches to learning as one of its five core school readiness domains (Health and Human Services, Administration for Children and Families, & Office of Headstart, 2015).

While the body of research on approaches to learning in Latino children is small (e.g., Bulotsky-Shearer et al., 2015; Bustamante et al., 2017; Galindo & Fuller, 2010), several studies suggest approaches to learning may be another area of strength for this important subgroup. First, Bulotsky-Shearer et al. (2015) demonstrated that social emotional competence in Latino children (a known strength) predicted more positive attitudes towards learning, competence motivation, attention, and persistence, all of which are key elements of approaches to learning (Bulotsky-Shearer et al., 2015). However, it was beyond the scope of this work to explore the links between approaches to learning and academic outcomes among these children.

Addressing this gap, Galindo and Fuller (2010) examined the nationally representative ECLS-K dataset and found that, controlling for socioeconomic status, Latino kindergarteners had higher approaches to learning than their African American peers and were no different from White children. This advantage mattered, as approaches to learning was the strongest predictor of growth in Latino kindergarteners' math scores among all of the domain-general competencies examined (e.g., self-regulation, interpersonal skills, externalizing and internalizing behavior problems; Galindo & Fuller, 2010). However, this study did not examine a wide array of academic outcomes or extend into the preschool years before the start of formal schooling, an essential time for early intervention. Moreover, within the preschool landscape, exploring young Latino children in Head Start might be particularly powerful, because this program represents the nation's largest intervention for children in poverty and includes a rapidly growing population of Latino children, topping more than one-third of all enrollees in 2016 (6).

Similar cultural strengths that contribute to Latino children's social emotional advantage may also benefit approaches to learning. Strong adult-child attachment discussed above (e.g., Howes & Wishard Guerra, 2009) may result in Latino children being more willing to take risks and attempt challenging tasks, because they are confident they will still be loved and accepted regardless of the outcomes—therefore, their self-worth is not contingent on success of a given task. Further, a culture of strong family ties and close connections with extended family (e.g., cousins, aunts, uncles, grandparents) may result in Latino children receiving early exposure to learning in groups and communicating effectively with adults and peers. Identifying this potential strength in Latino children could have important implications for classroom practices. Teachers in classrooms with a high representation of Latino children may opt to engage in more small-group activities in order to leverage potential strengths in collaborative learning situations.

Further, high-quality teacher practices may also represent a mechanism for fostering approaches to learning and taking a strength-based approach. One widely used measure of classroom quality is the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008) which breaks quality into three domains—*Emotional Support, Classroom Organization,* and *Instruc-*

tional Support. Classrooms with high *Emotional Support* may encourage children to take risks, embrace challenges, and persist after setbacks because teachers are warm and positive regardless of the outcome. High *Classroom Organization* may facilitate more collaboration because less misbehavior and quick resolutions to conflicts result in improved peer dynamics. Further, children may improve their ability to sustain attention when activities are appropriately paced and not stymied by constant disruptions. Finally, high *Instructional Support* captures children's attention with "why?" and "how?" questions, probing deeper understanding and facilitating effective communication with teachers and peers. In this study, we explore potential mechanisms for fostering approaches to learning in Latino children from low-income families.

7. Aims of the current study

Given the more established advantage for Latino children in social emotional and executive functioning skills, and the emerging evidence that approaches to learning is another source of strength, additional evidence identifying approaches to learning as a strength for Latino children would support an ecocultural, strength-based approach that builds on these domain-general competencies. This approach becomes even more powerful when considering that all three of these domain-general skills are demonstrated levers for academic success among Latino children from low-income families (Bulotsky-Shearer et al., 2015; Bustamante et al., 2017; Galindo & Fuller, 2010; Nayfeld et al., 2013). This study utilized the nationally representative Family and Child Experiences Survey (FACES) 2009 dataset to examine approaches to learning and academic school readiness in Latino preschoolers served by Head Start. Specifically, we addressed the following research questions, tapping both strategic comparison of Latino and Non-Latino children and rich exploration within a diverse Latino population:

1) What is the nature and variability of approaches to learning in Latino children at the beginning and end of the Head Start school year, and how do these skills compare to those of Non-Latino children?
2) Does being Latino uniquely predict children's academic school readiness at the beginning of the year, and gains across the year, net of the effects of a variety of other factors, including family demographics, executive functioning, and social emotional skills?
3) Are Latino children's gains in academic school readiness mediated by approaches to learning skills, net of the effects of the same family demographics, executive functioning, and social emotional skills?
4) What factors predict approaches to learning skills in Latino children at the beginning of the year, as well as gains in approaches to learning across the year?

8. Method

8.1. Procedures

Data were drawn from the FACES 2009 dataset, a large-scale, nationally representative study of children and families in their first year of Head Start (Malone et al., 2013). Participants in this cohort of the FACES study were selected from the total population of Head Start programs in the United States and stratified into groups with approximately equal enrollments using key demographic variables (e.g., geographic region, metropolitan status, percent minority, auspice type, and percent of English language learners). Using probability-proportional-to-size methods, particular pro-

grams were identified, individual centers within each program were selected, and classrooms in each center were randomly chosen. Thereafter, a fixed number of children were randomly selected and recruited. Approximately 90% of eligible children, families, and educators consented to participate. All direct child assessments and teacher rating scales used in this study were collected in the fall and spring of the 2009–2010 Head Start school year. Children were assessed one-on-one in a quiet area by a trained assessor.

8.2. Participants

The FACES research team created a series of weights with which analysts can adjust parameters to reflect the actual population of Head Start children enrolled in fall 2009 in terms of ethnicity, geographic region, percent English language learners, and other demographic factors. A number of weights are provided to map on to different kinds of subsamples within the larger dataset; put another way, because the number of individuals missing data increases over time and as more measures are considered, weights need to be adjusted for each subsample to ensure that each is representative of the national landscape in 2009. In the current study, we use PRA12OCW, which adjusts the sample of children who have both parent and teacher data and classroom observations to be representative of the population in fall 2009.

A total of 1661 preschoolers served by Head Start (n = 2320 unweighted) were included in this study, with relatively few demographic differences between Latino and Non-Latino children and families. Overall, children ranged from 32 to 59 months of age (M = 45.66, SD = 6.39), and the age of Latino children (M = 46.41, SD = 6.41) was comparable to that of Non-Latino children (M = 45.64, SD = 6.50). Approximately 17% of Latino children were between the ages of 32 and 39 months, whereas 20% of Non-Latino children were in that age range. Approximately 50% of Latino children were between the ages of 40 and 49 months, whereas 51% of Non-Latino children were in that age range. Finally, 33% of Latino children were between the ages of 50 and 59 months, whereas 29% of Non-Latino children were in that age range. The sample was ethnically diverse: 40% of children were Hispanic/Latino, 33% were African American (non-Hispanic), 20% were White (non-Hispanic), and 7% were of other or multiple backgrounds. Additionally, 30% of children spoke a language other than English at home, and 70% of Latino children spoke Spanish at home. Half of children (50%) were female.

In accord with Head Start eligibility requirements, all families were at or near the poverty line, with the average family income between 50 and 100% of the poverty line, which was set at $22,050 for a family of four in 2009. Between Latino and Non-Latino families, the distribution within each level of the income-to-poverty ratio (i.e., an indicator that uses household size and family income to reflect how far below or above the household income falls) was comparable, with Latino families experiencing slightly higher rates of poverty than Non-Latino families. Approximately 25% of Latino families earned less than 50% of the poverty threshold, whereas 20% of Non-Latino families fell into that category. Approximately 44% of Latino families earned between 50 and 100% of the poverty threshold, whereas 38% of Non-Latino families fell in that category. Finally, 25% of Latino families earned between 101 and 185% of the poverty threshold, whereas 32% of Non-Latino families fell in that category. A chi-square test of these comparisons demonstrated a significant difference (χ^2 (5) = 30.82, p < .001) with Latino families experiencing higher rates of poverty. About a third of mothers in this sample did not complete high school (36%), more than half graduated from high school or vocational school (58%), and a small minority held a bachelor's degree (6%).

8.3. Measures

8.3.1. Approaches to learning

Approaches to learning was rated by teachers in fall and spring of Head Start using the six items that comprise the approaches to learning scale from the ECLS-K study (Rock & Pollack, 2002). For each item, teachers rated children on a scale of 0 (never) to 3 (very often) on their learning skills. Items tapped a range of constructs, including whether or not the child "pays attention well," "persists in completing tasks," or "shows eagerness to learning new things." The composite score is a unit-weighted mean of the items. This scale has been used with diverse populations, has established internal reliability (Cronbach α = .89), and has demonstrated predictive validity with academic achievement (Duncan et al., 2007). The reliability statistics for this measure and all of following measures reported in this study were conducted in other samples, not the FACES 2009 dataset.

8.3.2. Academic school readiness

Three standardized measures of academic skills were collected along with their Spanish language equivalent measures for children who spoke Spanish at home to ensure children's school readiness was captured irrespective of English proficiency. All children whose home language was Spanish were administered the bilingual Expressive One Word Picture Vocabulary task (see below), and the Pre-LAS language screener (Simon Says and Art Show subtests). Children who made 5 consecutive errors on both subtests of the Pre-LAS were administered the Woodcock Muñoz vocabulary assessment.

8.3.3. Mathematics

The applied problems subtest of the Woodcock Johnson III (Woodcock et al., 2001) was used to directly assess mathematics skills in fall and spring, and particularly problem solving including simple counting, addition, and subtraction. Items relied heavily on experimenters verbally explaining situations or scenarios, after which children computed a response. This norm-referenced assessment has strong published internal reliabilities (Cronbach α = 0.79–0.90; West et al., 2010).

8.3.4. Literacy

The letter-word identification and spelling subtests from the Woodcock Johnson III (Woodcock et al., 2001) were used to directly assess literacy in fall and spring. In the letter-word identification subscale, children identified letters and then decoded increasingly complex words. In the spelling subtest, children performed prewriting and spelling skills such as drawing lines and tracing letters. Children also produced upper- and lowercase letters and spelled words. As above, published internal reliabilities are strong (α = .79–.90: West et al., 2010).

For all three sub-tests of the Woodcock Johnson used in this study (applied problems, letter word identification, and spelling), the Spanish-language equivalent Woodcock Muñoz was collected for children who spoke Spanish at home and did not pass the language screener as described above (Woodcock & Muñoz-Sandoval, 1993). Rigorous IRT analyses were used to equate an earlier version of the Woodcock Johnson tool and the Woodcock-Muñoz-Sandoval measure, drawing on an international sample of approximately 2,000 children (Woodcock & Sandoval, 1996; Woodcock & Muñoz-Sandoval, 1993). Therefore, the English and Spanish scores were combined into a single variable for all three sub-tests (i.e., one applied problems score, one letter-word score, and one spelling score).

8.3.5. Vocabulary

The Expressive One Word Picture Vocabulary Test-English (EOWPVT; Bronwell, 2000) and Spanish-Bilingual Edition (EOWPVT-SBE; Bronwell, 2001) measure expressive vocabulary in English-speaking and in bilingual Spanish-English-speaking children, respectively. The EOWPVT has been sensitive to interventions in Head Start classrooms (Wasik, Bond, & Hindman, 2006) and shows strong evidence of reliability and validity (Malone et al., 2013). The publisher reports internal consistency coefficients ranging from 0.95 to 0.96 on the EOWPVT and from 0.92 to 0.93 on the EOWPVT-SBE. Test-retest reliability ranged from 0.85 to 0.92 for the English sample and was 0.88 for the bilingual sample. The EOWPVT-SBE allows for conceptual scoring, meaning that assessors provide prompts and accept responses in both English and Spanish. Thus, the English and bilingual scores were combined to make a single score of expressive vocabulary.

8.3.6. Classroom quality

In spring, classroom quality was measured using the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008). Classroom observations were conducted live and lasted approximately 4 h. The CLASS measures teacher-child interactions and global quality across three domains: Emotional Support (including the subscales of positive climate, negative climate, teacher sensitivity, and regard for student perspective); Classroom Organization (including the subscales of behavior management, productivity, and instructional learning format); and Instructional Support (including the subscales of concept development, quality of feedback, and language modeling). Items are scored on a 7-point scale, with higher scores reflecting stronger quality. Internal consistency ranged from 0.79 (Instructional Support) to 0.91 (Emotional Support). Inter-rater reliability (coding within one point of master raters) averaged 87 percent. For this study, we averaged the scores from each of the three domains to create one total classroom quality score, as suggested by Hamre, Hatfield, Pianta, and Jamil (2014).

8.3.7. Domain general covariates

In order to account for executive functioning and social emotional skills in this study we utilized measures of attention, impulse control, and behavior problems as covariates. This increases the likelihood that unique factors of approaches to learning are driving relationships in this study as opposed to overlap between approaches to learning, executive functioning, and social emotional skills.

8.3.8. Executive functioning

Assessor ratings of children's attention and impulse control were used as proxies for executive functioning. The Leiter R Examiner Rating Scales (Malone et al., 2013) were filled out by assessor after completing direct assessments and include subscales for attention and impulse control. In the attention subscale, the assessor is asked to indicate the extent to which 10 items (including "pays attention during instructions and demonstrations,""focuses on task,"and "directed to task despite external noises and sights") are characteristic of the child from 0 ("rarely/never") to 3 ("usually/always"). Scores on the composite can range from 0 to 30. Cronbach's alpha was .97 in the fall and spring (Malone et al., 2013). In the impulse control subscale, the assessor is asked to indicate the extent to which 8 items (including "thinks and plans before beginning,"and "inhibits verbalizations appropriately") are characteristic of the child from 0 ("rarely/never") to 3 ("usually/always"). Scores can range from 0 to 24. Cronbach's alpha was .94 in the fall and .93 in the spring (Malone et al., 2013). Recent research using the Leiter R demonstrated a moderation effect between classroom quality and academic outcomes in the FACES 2009 dataset, offering evidence for

the validity of this measure in the current sample (Rudasill et al., 2017).

8.3.9. Social emotional skills: behavior problems

Internalizing and externalizing behavior problems are a common indicator of social emotional adjustment, and one that is conceptually relatively distinct from approaches to learning. In this study, we accounted for these skills by having parents fill out the Behavior Problem Index (BPI; Peterson & Zill, 1986). The BPI captures children's problem behaviors, including under-control (such as aggression, hyperactivity, and destructiveness) and over-control (such as social withdrawal, depression, and somatic problems). The internal consistency of the BPI ranged from 0.88 to 0.89 in the National Health Interview Survey and the National Longitudinal Survey of Youth (NLSY; Berry, Bridges, & Zaslow, 2004).

8.3.10. Demographics

Teacher and parent surveys were used to collect demographic information such as children's age, gender, race/ethnicity, household dependence ratio (number of children in the household relative to the number of adults), income-to-poverty ratio, disability status, times per week the child is read to, and mother's highest level of education.

8.4. Missing data

The final, weighted sample of 1661 participants included children who had complete data on demographic variables in fall or spring, as well as on classroom quality in spring. The approaches to learning measure had no missing data in the fall and 2% missing data in the spring, while missing data on academic school readiness ranged from 6 to 22% in the fall and 5 to 21% in the spring. Examination of missing data suggested that data were missing at random (i.e., missingness was not completely random, but rather was correlated with some variables in the dataset). For example, younger children and children whose mothers did not graduate from high school were more likely to have missing data on at least one of these key variables variable ($p < .05$ for all). Parameter estimates were adjusted for missing data using Full Information Maximum Likelihood (FIML) estimation in Mplus 7.0 (Enders, 2006). FIML uses all available data for each case when estimating parameters.

8.5. Analytic plan

Inferential analyses were conducted in a structural equation modeling (SEM) framework to allow for the construction of latent variables and the modeling of a number of paths among variables of interest and covariates. Children were nested within classrooms, with approximately four study-enrolled children per classroom. Thus, the standard errors were clustered by classroom. To determine model fit, the Bentler Comparative Fit Index (CFI) was examined, based on the criterion that values > 0.95 were considered acceptable fit (Bentler, 1990). The Standardized Root Mean Square Residual (SRMR) was examined, with values below 0.08 considered acceptable model fit (Hu & Bentler, 1999). Finally, the Root Mean Square Error of Approximation (RMSEA) was also examined, with values below 0.06 considered adequate model fit (Browne & Cudeck, 1992). We reported chi-square in Table 3, but did not focus on chi-square as a metric of fit, given its sensitivity to sample size (Kline, 2011).

Table 1
Descriptive statistics.

Dimension	Min	Max	Mean	Std. dev
Fall letter-word	66	171	93.14	18.26
Fall spelling	49	137	93.46	13.11
Fall math	31	130	87.76	14.72
Fall expressive vocabulary	45	155	81.76	16.86
Spring letter-word	52	194	99.65	17.61
Spring spelling	41	145	96.08	14.45
Spring math	41	140	88.79	15.27
Spring expressive vocabulary	45	155	87.32	16.25
Fall approaches to learning	0	3	1.62	0.69
Spring approaches to learning	0	3	1.87	0.73
Classroom quality	2.05	5.49	4.08	0.51
Child age (months)	32	59	45.66	6.48
Gender	0	1	.50	.50
Maternal education	1	4	2.03	.92
Household dependence ratio	.20	10	1.61	1.06
Child read to 3+ times/week	0	1	.77	.43
Child disability status	0	1	.04	.19
Income to poverty ratio	1	6	2.60	1.37
Classroom quality	2.05	5.49	4.07	.51
Fall behavior problems	0	24	5.43	3.61
Spring behavior problems	0	20	5.17	3.52
Fall attention	0	30	18.22	7.58
Spring attention	0	30	20.14	7.27
Fall impulse control	0	24	14.48	5.99
Spring impulse control	0	24	15.96	5.65

9. Results

9.1. Research aim 1

We first explored the descriptive statistics of the weighted data, presented in Table 1. In fall, overall, children scored an average of 1.64 (SD = 0.69) out of a possible 3.00 in approaches to learning, while in spring scores averaged 1.87 (SD = 0.73). Thus, no floor or ceiling effects emerged, and the data suggest that children used most of these strategies at least some of the time. A paired sample t-test demonstrated that, on average, children made significant gains in approaches to learning from fall to spring (t (1585) = 17.11, $p < .001$).

Latino children scored higher on approaches to learning in the fall (M = 1.75, SD = 0.71) than African American children (M = 1.53, SD = .67; t (1222) = 6.85, $p < .001$), $d = .32$, and White children (M = 1.66, SD = 0.67; t (1004) = 2.44, $p = .015$), $d = 0.13$. Latino children also had higher approaches to learning scores in the spring (M = 2.00, SD = 0.70) than their African American peers (M = 1.74, SD = .76; t (1163) = 6.85, $p < .001$, $d = 0.36$), and their White peers (M = 1.85, SD = 0.72; t (1001) = 3.60, $p < .001$, $d = 0.21$).

9.2. Research aims 2–3

We next examined children's academic learning over time and the contributions of approaches to learning to these gains, again using weighted data.

9.2.1. Preliminary correlations

Zero-order Pearson correlations between all study variables are presented in Table 2. Overall, correlations show that approaches to learning had small correlations with academic school readiness ($r = 0.16$–.26, $p < .001$), and that academic school readiness outcomes were moderately correlated with one another ($r = 0.25$–0.57, $p < .001$). Approaches to learning had small negative correlations with behavior problems ($r = -0.08$ to -0.17, $p < .001$) and small positive correlations with indicators of executive functioning ($r = 0.23$–0.31, $p < .001$). Correlations between other covariates and approaches to learning/academic school readiness ranged from -0.22 to 0.38 and were generally significant.

Table 2
Correlation matrix of fall and spring academic readiness, fall and spring approaches to learning, and all covariates.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Fall approaches to learning	1																								
2. Spring approaches to learning	.59*	1																							
3. Fall letter-word knowledge	.16*	.19*	1																						
4. Fall spelling	.23*	.20*	.37*	1																					
5. Fall math	.22*	.21*	.38*	.36*	1																				
6. Fall vocabulary	.26*	.21*	.32*	.32*	.44*	1																			
7. Spring letter-word knowledge	.17*	.23*	.58*	.34*	.36*	.28*	1																		
8. Spring spelling	.25*	.24*	.36*	.48*	.38*	.31*	.46*	1																	
9. Spring math	.26*	.25*	.36*	.35*	.60*	.41*	.35*	.70*	1																
10. Spring vocabulary	.23*	.24*	.26*	.32*	.35*	.40*	.35*	.30*	.31*	1															
11. Child age	.18*	.14*	-.09*	-.07*	-.09*	.16*	-.09*	-.13*	-.10*	.06	1														
12. Child gender	-.18*	-.21*	-.10*	-.16*	-.11*	.01	-.16*	-.09*	-.08*	.01	-.07*	1													
13. Mother education	.06*	.03	.28*	.10*	.18*	.16*	.18*	.19*	.09*	.09*	.01	.03	1												
14. Household dependence ratio	-.01	.01	-.02	.02	.03	-.05*	.03	-.02	-.10*	-.15*	.19*	-.05*	-.07*	1											
15. Reads to Child 3 times per week	.06*	.09*	.09*	.04*	-.07*	.06*	.10*	.16*	.10*	.14*	.03	-.04	.02	.01	1										
16. Child disability status	-.07*	-.08*	-.02	-.07*	-.12*	.01	-.05*	-.09*	-.12*	.03	-.10*	.02	.08*	-.05*	-.01	1									
17. Latino	.09*	.11*	-.22*	-.01	-.05*	-.19*	-.19*	-.15*	-.12*	-.12*	.14*	.08*	.02	.11*	-.13*	-.12*	1								
18. Income to poverty ratio	.07*	.03*	.14*	.08*	.16*	.16*	.16*	.13*	.16*	.05*	-.02	.05*	.08*	-.22*	.06*	-.30*	.31*	1							
19. Classroom quality	.04*	.11*	-.01	.01	.06*	.05*	.05*	.10*	.12	.05*	.02	-.02	.03	-.04	.01	.31*	-.03	.04	1						
20. Fall behavior problems	-.10*	-.08*	-.10*	-.15*	-.11*	-.13*	-.11*	-.13*	-.01	-.19*	-.14*	.02	.05	-.09*	.06*	-.18*	.07*	-.11*	.29*	1					
21. Spring behavior problems	-.13*	-.17*	-.10*	-.17*	-.14*	-.15*	-.14*	-.15*	-.15*	-.18*	-.05	-.02	.07*	-.12*	.06*	-.20*	-.12*	-.16*	.26*	.57*	1				
22. Fall attention	.28*	.20*	.28*	.31*	.41*	.20*	.35*	.30*	.23*	.18*	-.14*	.04	-.12*	.04	.04	-.01	-.11*	-.11*	.01	-.06*	-.12*	1			
23. Spring attention	.27*	.29*	.25*	.34*	.35*	.29*	.36*	.35*	.30*	.18*	-.11*	.11*	-.11*	-.01	.03	.11*	.02	.06*	-.14*	-.14*	.06*	.47*	1		
24. Fall impulse control	.27*	.29*	.27*	.28*	.38*	.17*	.31*	.27*	.26*	.17*	-.15*	.03	-.11*	.05	.04	.03	-.05	.01	-.05	-.12*	-.14*	.91*	.44*	1	
25. Spring impulse control	.23*	.29*	.24*	.31*	.31*	.23*	.31*	.33*	.34*	.18*	-.12*	.10*	-.12*	-.01	.02	.05	-.01	.06*	.06*	-.13*	-.12*	.44*	.91*	.42*	1

Note. *p < .05.

9.2.2. Measurement model

The next step was to construct one latent *academic outcomes* variable for the fall and another for the spring. Confirmatory factor analyses were used to create both latent variables. For inclusion in the latent variable, indicators (i.e., the four academic measures) had to load on their respective latent construct with a loading of at least 0.40 (Comrey & Lee, 2013). Confirmatory factor analyses yielded a single latent variable for academic school readiness in the fall, and another single latent factor for academic school readiness in spring. At both time points, indicator loadings ranged from 0.547 to 0.693 and were statistically significant ($p < .001$ for all). The measurement model met criteria for all three indices of excellent model fit (RMSEA = .043; SRMR = .027; CFI = .982).

9.2.3. Structural models

We expanded upon the measurement model to build several structural models. We note that home language was excluded as a covariate in the subsequent analyses due to its collinearity with Latino ethnicity ($r = .75$). The first model examined how Latino children performed on a latent variable of academic school readiness in the fall of the Head Start school year controlling for age, gender, income-to-poverty ratio, maternal education, household dependence ratio, whether children are read to 3 times or more per week, disability status, attention, impulse control, and behavior problems (see Fig. 1). The model demonstrated that Latino children entered the Head Start school year significantly behind their non-Latino peers in academic school readiness ($\beta = -0.175$, $p = 0.021$) (see Table 3). Model fit met criteria for excellence on two of three indices, and for adequate fit on the third (RMSEA = 0.059; CFI = 0.847; SRMR = 0.037).

The second model examined being Latino as a predictor of gains across the Head Start year in academic school readiness controlling for age, gender, income-to-poverty ratio, maternal education, household dependence ratio, whether children are read to 3 times or more per week, classroom quality, disability status, attention, impulse control, and behavior problems (see Fig. 2). This model demonstrated that, despite entering the school year behind on academic readiness, Latino children made greater gains than their non-Latino peers in academic school readiness ($\beta = 0.129$, $p = .017$) (see Table 4). Again, model fit met criteria for excellence on two of three indices, and for good fit on the third (RMSEA = 0.048; SRMR = 0.045; CFI = 0.886).

The third and final structural model tested whether Latino children's gains in academic school readiness (demonstrated in model 2) were mediated by gains in approaches to learning, controlling for the same constellation of covariates (see Fig. 3). This model demonstrated that Latino children made greater gains over the Head Start school year than their non-Latino peers in approaches to learning ($\beta = 0.153$, $p = .024$), and those gains predicted gains in academic school readiness ($\beta = 0.132$, $p < .001$). Finally, unlike model 2, being Latino no longer predicted gains in academic school readiness ($\beta = 0.084$, $p = .152$) suggesting that approaches to learning mediated the gains in academic school readiness for Latino children (see Table 5). Model fit met criteria for excellence on two of three indices, and for good fit on the third (RMSEA = 0.048; SRMR = 0.050; CFI = 0.880).
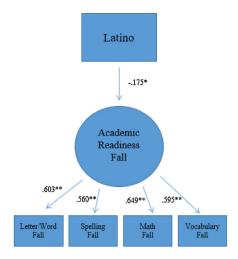
9.3. Research aim 4

To examine what factors predict approaches to learning among just Latino children at the beginning of the school year, as well as their gains in approaches to learning across the year, we employed two path models in a subset of the sample only including Latino children ($n = 861$). In the first model, using weighted data, we included age, gender, maternal education, income-to-poverty ratio, whether children are read to 3 times or more per week, whether the

Structural equation model of school readiness of Latino children in the fall of the Head Start year. Maternal education, family income to poverty ratio, household dependence ratio, disability status, child age, gender, attention, impulse control, and behavior problems were used as covariates. All reported path coefficients are standardized.

Fig. 1.

Structural equation model of Latino children's gains in school readiness across the Head Start school year. Maternal education, family income to poverty ratio, household dependence ratio, whether children are read to 3 times or more per week, classroom quality, child age, gender, disability status, attention, impulse control, and behavior problems were used as covariates. All reported path coefficients are standardized.

Fig 2.

child's mother was born in the United States, and whether the child was born in the United States to predict approaches to learning at the beginning of the Head Start year. The model demonstrated that age ($\beta = 0.044$, $p < .001$), gender ($\beta = -0.429$, $p < .001$), and maternal education ($\beta = 0.093$, $p = .021$) predicted approaches to learning among Latino children, such that older children, girls, and children of more educated mothers entered school with higher approaches to learning skills (see Table 6).
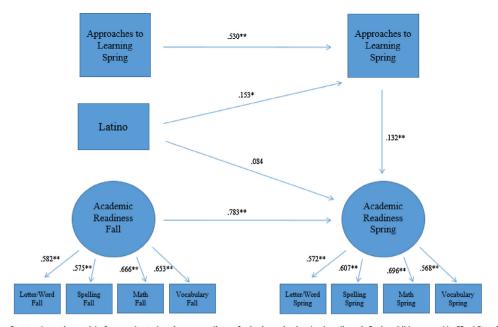
The second model examined these same covariates (i.e., age, gender, maternal education, income-to-poverty ratio, whether children are read to 3 times or more per week, whether the child's mother was born in the United States, and whether the child was born in the United States) as well as two instructional variables: whether the child's teacher spoke Spanish and quality of the classroom on the three domains of the CLASS (instructional support, emotional support, and classroom organization), as predictors of gains in approaches to learning across the school year. Of these predictors, only two significantly predicted gains in approaches to learning from fall to spring: the child's gender ($\beta = -0.336$, $p < .001$) and classroom organization ($\beta = 0.272$, $p = .045$), as girls and chil-

dren in more organized classrooms made larger gains across the year in approaches to learning (see Table 7).

10. Discussion

In this study, we used the nationally representative FACES 2009 data set to examine approaches to learning as a potential asset for Latino children in part of a strength-based approach. Results indicated that Latino children begin the Head Start school year with more advanced approaches to learning and made greater gains in approaches to learning across the year compared to their Non-Latino peers. Relationships were small in magnitude but statistically significant, accounting for a wide array of related covariates. Further, while Latino children started the year significantly behind their peers in their academic school readiness, they made greater gains across the year than their non-Latino peers. However, once approaches to learning were accounted for, being Latino was no longer predictive of gains academic school readiness. Rather, being Latino predicted gains in approaches to learning, which in turn, predicted gains in academic school readiness, suggesting that approaches to learning mediated gains in academic

Structural equation model of approaches to learning as a mediator of gains in academic school readiness in Latino children served by Head Start. Maternal education, family income to poverty ratio, household dependence ratio, whether children are read to 3 times or more per week, classroom quality, child age, gender, disability status, attention, impulse control, and behavior problems were used as covariates. All reported path coefficients are standardized.

Fig. 3.

Table 3
Unstandardized and standardized coefficients and significance levels for Model in Fig. 1.

Parameter estimates	Unstandardized	Standard error	Standardized	p-Value
Measurement model estimates				
Fall academic → readiness letter-word	1.00	<.001	.603	<.001
Fall Academic → readiness spelling	.636	.061	.560	<.001
Fall academic readiness → math	.861	.082	.649	<.001
Fall academic readiness → vocabulary	.893	.116	.595	<.001
Structural model estimates				
Latino → fall academic readiness	−1.993	.931	−.175	.021
Gender → fall academic readiness	−1.126	.840	−.099	.166
Maternal education → fall academic readiness	2.340	.473	.205	<.001
Income to poverty ratio → fall academic readiness	.876	.299	.077	.002
Household dependance ratio → fall academic readiness	−.568	.377	−.050	.133
Disability status → fall academic readiness	−3.909	2.117	−.343	.073
Age → fall academic readiness	−.213	.074	−.019	.001
Fall behavior problems fall academic readiness	−.382	.103	−.034	<.001
Fall attention → fall academic readiness	.649	.115	.057	<.001
Fall impulse control → fall academic readiness	.137	.140	.012	.329

readiness for Latino children from low-income families. Our results make several important contributions to the literature.

First, this study adds additional evidence to support the small body of research that approaches to learning is a unique strength that Latino children, on average, bring to the early childhood classroom (Galindo & Fuller, 2010). While social emotional skills and executive functioning are more established strengths in Latino children, our results suggest that approaches to learning is another set of powerful domain-general skills, which mediate academic school readiness in Latino children from low-income families. Consequently, approaches to learning should be leveraged in a strength-based approach to educating our country's growing Latino population.

Findings from this study also extended the results from Galindo and Fuller (2010), who showed an advantage for Latino children over African American children but no difference between Latino children and their White peers. Our results demonstrated an advantage in approaches to learning for Latino children in the fall and

spring, as well as gains across the year, in comparison to non-Latino children. One unique aspect of this study that may contribute to this disparity is that all children in this study come from low-income families, whereas the ECLS-K dataset (used in Galindo and Fuller) had children from all different income levels. As a result, given relatively high rates of poverty among Latino households, Galindo and Fuller's models may not have been fully able to account for these differences, leaving advantages for Latino children undiscovered.

It is also important to note that not all Latino children excelled in approaches to learning. In fact, a considerable percentage of Latino children scored a one or lower (out of three) on the measure in the fall (21.8%) and spring (12.5%). This subset of children should be identified and targeted for intervention to help foster their individual and cultural strengths and maximize their chances for later school success.

Our analyses examined what factors predict Latino children's approaches to learning, and after demographic characteristics like age and gender, the best predictor of gains across the school year

Table 4
Unstandardized and standardized coefficients and significance levels for Model in Fig. 2.

Parameter estimates	Unstandardized	Standard error	Standardized	p-Value
Measurement model estimates				
Fall academic readiness → letter-word	1.00	<.001	.583	<.001
Fall academic readiness → spelling	.672	.060	.574	<.001
Fall academic readiness → math	.910	.072	.666	<.001
Fall academic readiness → vocabulary	1.018	.091	.651	<.001
Spring academic readiness → letter-word	1.00	<.001	.573	<.001
Spring academic readiness → spelling	.849	.057	.612	<.001
Spring academic readiness → math	1.057	.077	.700	<.001
Spring academic readiness → vocabulary	.927	.087	.576	<.001
Structural model estimates				
Fall academic readiness spring academic readiness	.741	.053	.806	<.001
Latino spring academic readiness	1.309	.545	.129	.017
Gender spring academic readiness	.089	.491	.009	.856
Maternal education spring academic readiness	.440	.316	.043	.160
Household dependance ratio spring academic readiness	−.117	.220	−.011	.594
Disability status spring academic readiness	−.418	1.666	−.041	.802
Income to poverty ratio spring academic readiness	.004	.162	.001	.983
Age spring academic readiness	−.195	.045	−.019	<.001
Reads to Child 3 times/week spring academic readiness	.597	.552	.059	.282
Classroom quality spring academic readiness	−.523	.664	−.051	.432
Spring behavior problems spring academic readiness	−.037	.072	−.004	.600
Spring attention spring academic readiness	.200	.074	.020	.007
Spring impulse control spring academic readiness	.130	.094	.013	.165
Gender fall academic readiness	−1.129	.705	−.102	.102
Maternal education fall academic readiness	2.167	.437	.196	<.001
Disability status fall academic readiness	−4.077	2.119	−.368	.057
Household dependance ratio fall academic readiness	−.426	.336	−.038	.200
Age fall academic readiness	−.162	.055	−.015	.002
Income to poverty ratio fall academic readiness	1.037	.245	.094	<.001
Reads to Child 3 times/week fall academic readiness	1.764	.807	.159	.025
Fall behavior problems fall academic readiness	−.444	.091	−.040	<.001
Fall attention fall academic readiness	.641	.102	.058	<.001
Fall impulse control fall academic readiness	.068	.125	.006	.587

in approaches to learning was classroom organization. Classroom organization is the teacher's ability to effectively manage behavior, maintain appropriate pacing, and provide engaging activities for children to partake in. Educators who want to foster development of approaches to learning in Latino children from low-income families should strive to provide clear behavioral expectations, maximize learning time by providing rich and engaging activities, and remain engaged in those activities by asking effective and involving questions, reflecting indicators of high classroom organization (Pianta et al., 2008).

By extension, another way in which practitioners and policymakers can build on Latino children's strength in approaches to learning is through advocating for a greater emphasis on science education in the early childhood classroom. Bustamante, White, and Greenfield (2017) demonstrated that approaches to learning predicted science school readiness more strongly than math or language readiness in a sample of children served by Head Start. Further, Bustamante et al. (2018) evidenced a bi-directional relationship between approaches to learning and science school readiness in children served by Head Start, suggesting that approaches to learning skills help children engage in science learning, and that science activities allow children to exercise their approaches to learning skills. The iterative trial-and-error process of scientific experimentation allows children to exercise *persistence* and *motivation,* use *strategic planning* to devise and test hypotheses, and work collaboratively in *small groups.* Given *persistence, motivation, strategic planning,* and *group learning* are all key approaches to learning skills—early science provides an engaging and hands-on context to elicit children's approaches to learning. However, further research is required to support this idea with experimental evidence. Last, curricula that explicitly target approaches to learning skills like Fantuzzo et al. (2011) EPIC curriculum, should be

given strong consideration, particularly in programs that serve a high percentage of children and families from Latino backgrounds.

Another important contribution of this study is its replication of the finding that approaches to learning are a significant predictor of gains across the school year in academic school readiness (Bustamante et al., 2017; Li-Grining, Votruba-Drzal, Maldonado-Carreño, & Haas, 2010; McDermott et al., 2014; McWayne, Fantuzzo, & McDermott, 2004). Domain-general skills like approaches to learning are critical for children's development. Moreover, our study highlights approaches to learning as a mediator to gains in academic school readiness, providing important evidence for policy makers and educators who are advocating for an increased focus on domain-general skills. This is particularly essential for Latino children who lag behind in academic readiness but, as demonstrated in this study, have a strength in approaches to learning that facilitates math and language learning.

It is also important to note an additional strength of this study is the assessment of academic school readiness in children's dominant language. While many studies have documented an academic achievement gap upon kindergarten entry for Latino children (Duncan & Magnusun, 2005; Espinosa, 2013; Fryer & Levitt, 2004; Reardon & Galindo, 2009), few have assessed their target outcomes in English and Spanish. Therefore, this study provides a clearer representation of Latino children's academic skills that goes above and beyond English language proficiency and more closely complies with best practices in assessing dual language learners (Barrueco et al., 2012).

In a related finding, while Latino children in this study began the year significantly behind in academic school readiness compared to their non-Latino counterparts, they made greater gains across the year, controlling for a host of relevant covariates. This provides further justification for assessing children in their dominant language as often as possible, as this finding may not have

Table 5
Unstandardized and standardized coefficients and significance levels for Model in Fig. 3.

Parameter estimates	Unstandardized	Standard error	Standardized	p-g-Value
Measurement model estimates				
Fall academic readiness → letter-word	1.00	<.001	.582	<.001
Fall academic readiness → spelling	.673	.060	.575	<.001
Fall academic readiness → math	.910	.072	.666	<.001
Fall academic readiness → vocabulary	1.019	.092	.653	<.001
Spring academic readiness → letter-word	1.00	<.001	.572	<.001
Spring academic readiness → spelling	.845	.056	.607	<.001
Spring academic readiness → math	1.053	.076	.696	<.001
Spring academic readiness → vocabulary	.916	.087	.568	<.001
Structural model estimates				
Fall academic readiness → spring academic readiness	.713	.053	.783	<.001
Spring approaches to learning → spring academic readiness	1.862	.404	.132	<.001
Latino → spring academic readiness	.845	.548	.084	.152
Gender → spring academic readiness	.474	.485	.047	.326
Maternal education → spring academic readiness	.469	.310	.046	.128
Household dependence ratio → spring academic readiness	−.113	.216	−.011	.598
Child disability status → spring academic readiness	−.429	1.575	−.042	.786
Income to poverty ratio → spring academic readiness	.024	.163	.002	.884
Child age → spring academic readiness	−.220	.048	−.022	<.001
Reads to Child 3 times/week → spring academic readiness	.540	.540	.053	.320
Classroom quality → spring academic readiness	−.702	.676	−.069	.300
Spring behavior problems → spring academic readiness	.008	.074	.001	.918
Spring attention → spring academic readiness	.175	.074	.017	.018
Spring impulse control → spring academic readiness	.127	.093	.013	.168
Gender → fall academic readiness	−1.113	.704	−.100	.106
Maternal education → fall academic readiness	2.158	.436	.195	<.001
Child disability status → fall academic readiness	−4.072	2.130	−.367	.059
Household dependence ratio → fall academic readiness	−.430	.335	−.039	.195
Child age → fall academic readiness	−.160	.055	−.014	.003
Income to poverty ratio → fall academic readiness	1.029	.245	.093	<.001
Reads to Child 3 times/week → fall academic readiness	1.768	.808	.160	.025
Fall behavior problems → fall academic readiness	−.445	.092	−.040	<.001
Fall attention → fall academic readiness	.641	.102	.058	<.001
Fall impulse control → fall academic readiness	.066	.125	.006	.601
Fall approaches to learning → spring approaches to learning	.541	.031	.530	<.001
Latino → spring approaches to learning	.109	.048	.153	.024
Gender → spring approaches to learning	−.127	.036	−.178	<.001
Maternal education → spring approaches to learning	.005	.018	.007	.775
Household dependence ratio → spring approaches to learning	−.006	.015	−.009	.664
Child disability status → spring approaches to learning	−.045	.081	−.064	.572
Age → spring approaches to learning	.003	.004	.004	.418
Income to poverty ratio → spring approaches to learning	−.004	.013	−.006	.737
Read to 3 times/week → spring approaches to learning	.046	.042	.065	.266
Classroom quality → spring approaches to learning	.091	.055	.127	.097
Spring behavior problems → spring approaches to learning	−.019	.005	−.026	<.001
Spring attention → spring approaches to learning	.005	.005	.007	.358
Spring impulse control → spring approaches to learning	.011	.007	.009	.089
Gender → fall approaches to learning	−.197	.040	−.282	<.001
Maternal education → fall approaches to learning	.019	.026	.027	.474
Child disability status fall approaches to learning	−.089	.128	−.128	.484
Household dependence ratio → fall approaches to learning	−.013	.020	−.018	.526
Age → fall approaches to learning	.014	.004	.021	<.001
Income to poverty ratio → fall approaches to learning	.030	.016	.043	.054
Read to 3 times/week → fall approaches to learning	.034	.045	.049	.447
Fall behavior problems → fall approaches to learning	−.014	.006	−.021	.008
Fall attention → fall approaches to learning	.017	.005	.025	.001
Fall impulse control → fall approaches to learning	.004	.007	.006	.545

Note: N = 1661; RMSEA = .048; CFI = .880; SRMR = .050; (df) Chi-Square = (195) 4519.399., p < .01.

Table 6
Unstandardized and standardized coefficients of path model predicting fall approaches to learning in sub-sample of Latino children.

Parameter estimates	Unstandardized	Standard error	Standardized	p-Value
Gender → fall approaches to learning	−.301	.055	−.429	<.001
Maternal education → fall approaches to learning	.065	.029	.093	.021
Age → fall approaches to learning	.031	.006	.044	<.001
Income to poverty ratio → fall approaches to learning	.028	.023	.040	.211
Read to 3 times/week → fall approaches to learning	.070	.055	.100	.204
Mother born in USA → fall approaches to learning	−.027	.063	−.039	.665
Child born in USA → fall approaches to learning	.239	.150	.341	.107

emerged if children were only assessed in English. Further, given that approaches to learning mediated Latino children's gains in academic school readiness, it may be that approaches to learning are at least partly driving this increased development of academic

Table 7
Unstandardized and standardized coefficients of path model predicting gains in approaches to learning across the school year in sub-sample of Latino children.

Parameter estimates	Unstandardized	Standard error	Standardized	p-Value
Fall approaches to learning → spring approaches to learning	.519	.038	.745	<.001
Gender → spring approaches to learning	−.234	.056	−.336	<.001
Maternal education → spring approaches to learning	.017	.033	.025	.603
Age → spring approaches to learning	.008	.007	.011	.238
Income to poverty ratio → spring approaches to learning	−.001	.019	−.001	.978
Read to 3 times/week → spring approaches to learning	−.028	.064	−.040	.664
Mother born in USA → spring approaches to learning	−.050	.122	−.072	.684
Child born in USA → spring approaches to learning	−.052	.126	−.075	.678
Teacher speaks spanish → spring approaches to learning	−.082	.069	−.118	.236
Instructional support → spring approaches to learning	−.025	.066	−.035	.707
Emotional support → spring approaches to learning	−.073	.111	−.105	.509
Classroom organization → spring approaches to learning	.189	.095	.272	.045

readiness across the year. Since the correlational nature of this analysis precludes making causal claims, future intervention research should explore approaches to learning as a causal facilitator of gains in academic school readiness in Latino children. This kind of strength-based intervention work could have profound implications for Latino children's academic school readiness, given their evident strengths across a variety of domain general competencies.

10.1. Limitations and future directions

While this study provides a large-scale, nationally representative view into approaches to learning in Latino children from low-income families, a few limitations must be addressed. First, although assessing children in their dominant language is ideal for gaining a more comprehensive estimate of their school readiness above English language proficiency, the approach taken in this study has its own limitations. While the outcomes measured in the FACES 2009 data were collected in Spanish and English and the measures are vastly similar and developed by the same researchers, and (in the case of the Woodcock Muñoz) equated using IRT analyses, the conceptual scoring of the expressive vocabulary measure is less than ideal. Allowing children to answer and hear prompts in two languages and affording them a second chance in another language if they do not know the answer could provide an unfair advantage for bilingual children through extra time to think about and process a question and can introduce bias into the estimates (Barrueco et al., 2012). Future research on this topic should utilize vocabulary measures that have equated versions in English and Spanish like the Quick Interactive Language Screener (QUILS; Golinkoff, Hirsh-Pasek, & De Villers, 2011).

Another limitation stems from the teacher questionnaire of approaches to learning used in the FACES 2009 study. Teachers reflected on children's approaches to learning using only six items, which could limit variability. Indeed, in this study, a small subset of children were rated at the highest possible score on approaches to learning in fall (5.81%) and spring (12.49%). Thus, the measure used in this dataset was not able to capture all of the growth in this subset of children. Although the short measure of approaches to learning is a practical approach, providing reliable and individualized information about children while not overburdening teachers, the relatively few items on the scale may constrict variation and mask additional relationships that would appear with a more in-depth measure of approaches to learning. A more comprehensive measure of approaches to learning that is valid and reliable in children served by Head Start is the Learning-to-Learn Scale (LTLS; McDermott et al., 2011). Future research should investigate approaches to learning in Latino children and how it relates to school readiness outcomes using the LTLS or another comprehensive measure of approaches to learning.

In this study, we used data from several sources, such as teacher report, parent report, direct assessment, and observations. While a multi-rater, multi-source approach is in line with best practices in measurement, there is always potential bias introduced with each type of measurement. Further, we were not able to explore the potential effects of the racial or ethnic match between teachers and students and how that maybe influence teachers' ratings of children's approaches to learning. Future research should explore these relationships and to what extent they influence the relationship between approaches to learning and school readiness.

Latinos are a highly heterogeneous group in regards to income, culture, status of citizenship, and country/region of origin. However, because this sample was made up entirely of children served by Head Start (indicating a low-income sample), we were not able to examine if approaches to learning is a mediator of gains in academic school readiness in middle and high income Latino children. Future studies could investigate to what extent this relationship is stable across income levels. Further, analyses by country of origin demonstrated no differences between the subgroups (Mexican, South American, Central American, and Caribbean) in their approaches to learning skills. This could be due to the strong majority of children being of Mexican decent (approx. 60%). Future research should examine these relationships in regards to region or country of origin in samples where other regions and countries are more represented.

Additional research should also compare 3- vs. 4-year-old children over time, perhaps taking advantage of the additional data points available to children who began Head Start at age 3. Last, as discussed above, the analyses performed in this study are correlational and do not support causal claims. These data offer insight into approaches to learning skills in Latino children served by Head Start across the country, which is a valuable perspective. However, future intervention research that takes a strength-based approach through an intentional focus on approaches to learning will allow for the evaluation of approaches to learning as a causal lever for boosting academic school readiness in Latino children from low-income families. Such research should also target other known strengths of this population for a more comprehensive approach, mainly social emotional skills, executive functioning, and Spanish language proficiency.

11. Conclusion

This study highlights approaches to learning as a unique strength of Latino children from low-income families. Research that takes an ecocultural strength based approach by identifying distinct areas of competence has important implications for narrowing the academic achievement gap for our countries fastest growing population of children. By focusing on the strengths of Latino children, educators can move away from the common deficit perspective and utilize the rich cultural assets that these children bring to the early childhood classroom. While domain-general skills such as approaches to learning, social emotional skills, and executive func-

tioning are critical for all children, Latino children's solid foundation in these skills prime them to benefit from an increased value and focus on domain-general skills in early childhood.

In the same way that developing Latino children's Spanish language skills increases their English language ability (Espinosa, 2013), fostering their strength in approaches to learning should also boost their academic outcomes as approaches to learning mediate their gains in academic school readiness. Valuing children's strengths increases confidence and allows them to flourish in all walks of life. This is particularly true for adaptive domain-general learning skills that allow children to engage in learning across any content domain. Strategic planning, persistence, open-mindedness, sustained focus, communication, and cooperation are the skills children need to succeed in the classroom and beyond it. We must foster children's cultural competencies in order to put them in the best position to succeed, and if we can do this, we would capitalize on one of our country's greatest assets – tremendous diversity and astoundingly rich cultural heritage.

Acknowledgments

References

Barac, R., Barac, R., Bialystok, E., Castro, D. C., & Sanchez, M. (2014). The cognitive development of young dual language learners: A critical review. *Early Childhood Research Quarterly*, 29(4), 699–714, doi:10.1016/j.ecresq.2014.02.003.

Barrueco, S., Lopez, M., Ong, C., & Lozano, P. (2012). *Assessing Spanish-English bilingual preschoolers: A guide to best approaches and measures.*. Retrieved from:. https://eric.ed.gov/?id=ED531689

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246. http://dx.doi.org/10.1037/0033-2909.107.2.238

Berry, D., Bridges, L., & Zaslow, M. (2004). *Early childhood measures profiles.*. Retrieved from:. http://tapartnership.org/enterprise/docs/RESOURCE BANK/RB-GENERATING SUPPORT, ADVOCACY BASE/Tools/Early_Childhood_Measures_-_Compendium.pdf

Bridges, M., Cohen, S. R., McGuire, L. W., Yamada, H., Fuller, B., Mireles, L., et al. (2012). Bien Educado: Measuring the social behaviors of Mexican American children. *Early Childhood Research Quarterly*, 27(3), 555–567. http://dx.doi.org/10.1016/j.ecresq.2012.01.005

Bronwell, R. (2000). *Expressive One-Word Picture Vocabulary Test (EOWPVT)*. Retrieved from: https://scholar.google.com/scholar?q=Expressive+One-Word+Picture+Vocabulary+Test+%28EOWPVT%29.+Copyright+(+2000%2C+Academic+Therapy+Publications%2C+20+Commercial+Boulevard%2C+Novato%2C+CA%2C+94949-6191.+All+rights+reserved.+Reproduced+by+permission+of+Aca.

Bronwell, R. (2001). *Expressive One-Word Picture Vocabulary Test – Spanish-bilingual edition*.

Browne, M. W., & Cudeck, R. (1992). Alternative ways of assessing model fit. *Sociological Methods & Research*, 21(2), 230–258. http://dx.doi.org/10.1177/0049124192021002005

Bulotsky-Shearer, R. J., López, L. M., & Mendez, J. L. (2015). The validity of interactive peer play competencies for Latino preschool children from low-income households. *Early Childhood Research Quarterly*, 34(January 2016), 78–91. http://dx.doi.org/10.1016/j.ecresq.2015.09.002

Bulotsky-shearer, R. J., Bell, E. R., Carter, T. M., & Dietrich, S. L. R. (2014). *Early Education and Development Peer Play Interactions and Learning for Low-Income Preschool Children: The Moderating Role of Classroom Quality Peer Play Interactions and Learning for Low-Income Preschool Children: The Moderating Role of Classroom Quali, 9289 (October 2014)*. pp. 37–41. http://dx.doi.org/10.1080/10409289.2014.864214

Bustamante, A. S., White, L. J., & Greenfield, D. B. (2017). Approaches to learning and school readiness in Head Start: Applications to preschool science. *Learning and Individual Differences*, http://dx.doi.org/10.1016/j.lindif.2016.10.012

Bustamante, A. S., White, L. J., & Greenfield, D. B. (2018). Science and approaches to learning in head start: Examining bi-directionality. *Early Childhood Research Quarterly*, 44, 34–42. http://dx.doi.org/10.1016/j.ecresq.2018.02.013

Cabrera, N. J. (2013). Positive development of minority children. *Social Policy Report*, 27(2), 22.

Calzada, E. J. (2015). HHS Public Access, 16(1), 77–86. http://dx.doi.org/10.1037/a0016071.Incorporating

Carlson, Stephanie M., & Meltzoff, A. N. (2008). Bilingual experience and executive functioning in young children. *Developmental Science*, 11(2), 282–298. http://dx.doi.org/10.1111/j.1467-7687.2008.00675. x.Bilingual

Comrey, A. L., & Lee, H. B. (2013). *A first course in factor analysis. 2nd ed. A first course in factor analysis.* http://dx.doi.org/10.1037/0011756

Crosnoe, R. (2007). Early child care and the school readiness of children from Mexican immigrant families. *International Migration Review*, 41(1), 152–181. http://dx.doi.org/10.1111/j.1747-7379.2007.00060.x

De Feyter, J. J., & Winsler, A. (2009). The early developmental competencies and school readiness of low-income, immigrant children: Influences of generation, race/ethnicity, and national origins. *Early Childhood Research Quarterly*, 24(4), 411–431. http://dx.doi.org/10.1016/j.ecresq.2009.07.004

Duncan, G. J., & Magnusun, K. A. (2005). Can family socio-economic resources account for test score gain? *The Future of Children*, 15(1), 15–34. http://dx.doi.org/10.1353/foc.2005.0004

Duncan, G. J., Dowsett, C., Claessens, A., Magnuson, K., Huston, A., Pamela, K., et al. (2007). School readiness and later achievement November 14, 2006. *Network*, 43(6), 1–36. http://dx.doi.org/10.1037/0012-1649.43.6.1428

Elliott, R. (2003). Executive functions and their disorders. *British Medical Bulletin*, http://dx.doi.org/10.1093/bmb/65.1.49

Enders, C. K. (2006). Analyzing structural equation models with missing data, Structural Equation Modeling. *A Second Course, 2004*, 313–342.

Espinosa, L. (2013). Policy to action brief. *Seven*.

Fantuzzo, J. W., Gadsden, V. L., & McDermott, P. A. (2011). An integrated curriculum to improve mathematics, language, and literacy for head start children. *American Educational Research Journal*, 48(3), 763–793. http://dx.doi.org/10.3102/0002831210385446

Fryer, R. G., & Levitt, S. D. (2004). Understanding the Black-White test score gap in the first two years of school. *Review of Economics and Statistics*, 86(2), 447–464. http://dx.doi.org/10.1162/003465304323031049

Galindo, C., & Fuller, B. (2010). The social competence of Latino kindergartners and growth in mathematical understanding. *Developmental Psychology*, 46(3), 579–592. http://dx.doi.org/10.1037/a0017821

Gandara, P., Rumberger, R., Maxwell-Jolly, J., & Callahan, R. (2003). English learners in California schools: Unequal resources, unequal outcomes. *Education Policy Analysis Archives*, 11(36), 1–54. http://dx.doi.org/10.14507/epaa.v11n36.2003

Golinkoff, R., Hirsh-Pasek, K., & De Villers, J. (2011). *Using Developmental Science to Create a Computerized Preschool Language Assessment*. [IES; Grant # R305A110284].

Hamre, B., Hatfield, B., Pianta, R., & Jamil, F. (2014). Evidence for general and domain-specific elements of teacher–child interactions: Associations with preschool children's development. *Child Development*, 85(3), 1257–1274. http://dx.doi.org/10.1111/cdev.12184

Han, W. J. (2010). Bilingualism and socioemotional well-being. *Children and Youth Services Review*, 32(5), 720–731. http://dx.doi.org/10.1016/j.childyouth.2010.01.009

Health and Human Services, Administration for Children and Families, & Office of Headstart. (2015). *Head Start Early Learning Outcomes Framework: Ages Birth to Five.*. Retrieved from:. https://eclkc.ohs.acf.hhs.gov/hslc/hs/sr/approach/pdf/ohs-framework.pdf

Hindman, A. H., & Wasik, B. A. (2015). Building vocabulary in two languages: An examination of Spanish-speaking Dual Language Learners in Head Start. *Early Childhood Research Quarterly*, 31, 19–33. http://dx.doi.org/10.1016/j.ecresq.2014.12.006

Howes, C., & Wishard Guerra, A. G. (2009). Networks of attachment relationships in low-income children of mexican heritage: Infancy through preschool. *Social Development*, 18(4), 896–914. http://dx.doi.org/10.1111/j.1467-9507.2008.00524.x

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55. http://dx.doi.org/10.1080/10705519909540118

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.).

Lamb-Parker, F., LeBuffe, P., Powell, G., & Halpern, E. (2008). A strength-based, systemic mental health approach to support children's social and emotional development. *Infants and Young Children*, 21(1), 45–55. Retrieved from:. http://www.scopus.com/inward/record.url?eid=2-s2.0-37749038751&partnerID=40&md5=0a3aab8b390910d7215070c3aa5f4bd6

Li-Grining, C. P., Votruba-Drzal, E., Maldonado-Carreño, C., & Haas, K. (2010). Childrenñs early approaches to learning and academic trajectories through fifth grade. *Developmental Psychology*, 46(5), 1062–1077. http://dx.doi.org/10.1037/a0020066

Magnuson, K., & Duncan, G. J. (2014). Can early childhood interventions decrease inequality of economic opportunity? In *Federal reserve bank of boston conference, inequality of economic opportunity in the United States*. (October) Retrieved from:. http://www.bostonfed.org/inequality2014/papers/magnusun-duncan.pdf

Malone, L., Carlson, B. L., Aikens, N., Moiduddin, E., Klein, A. K., West, J., et al. (2013). *Head start family and child experiences survey (FACES): 2009 cohort [United States]*. http://dx.doi.org/10.3886/ICPSR34558

McDermott, P. A., Fantuzzo, J. W., Warley, H. P., Waterman, C., Angelo, L. E., Gadsden, V. L., et al. (2011). Multidimensionality of Teachers' graded responses for preschoolers' stylistic learning behavior: the learning-to-learn scales. *Educational and Psychological Measurement*, 71(1), 148–169. http://dx.doi.org/10.1177/0013164410387351

McDermott, P. A., Rikoon, S. H., & Fantuzzo, J. W. (2014). Tracing children's approaches to learning through head start, kindergarten, and first grade: Different pathways to different outcomes. *Journal of Educational Psychology*, 106(1), 200–213. http://dx.doi.org/10.1037/a0033547

McWayne, C. M., Fantuzzo, J. W., & McDermott, P. A. (2004). Preschool competency in context: An investigation of the unique contribution of child competencies to early academic success. *Developmental Psychology*, *40*(4), 633–645. http://dx.doi.org/10.1037/0012-1649.40.4.633

Murphey, D., Guzman, L., & Torres, A. (2014). *America's Hispanic children: gaining ground, looking forward.*. Retrieved from:. http://www.childtrends.org/?publications=americas-hispanic-children-gaining-ground-looking-forward

Nayfeld, I., Fuccillo, J., & Greenfield, D. B. (2013). Executive functions in early learning: Extending the relationship between executive functions and school readiness to science. *Learning and Individual Differences*, *26*, 81–88. http://dx.doi.org/10.1016/j.lindif.2013.04.011

Oades-Sese, G. V., Esquivel, G. B., Kaliski, P. K., & Maniati, L. (2011). A longitudinal study of the social and academic competence of economically disadvantaged bilingual preschool children. *Developmental Psychology*, *47*(3), 747–764. http://dx.doi.org/10.1037/a0021380

Passel, J. S., Cohn, D. P., & Lopez, M. H. (2011). Census 2010: 50 million latinos: hispanics account for more than half of nation's growth in past decade. *Pew Hispanic Center*, *202*, 1–7.

Peterson, J. L., & Zill, N. (1986). Marital disruption, parent–child relationships, and behavior problems in children. *Journal of Marriage and Family*, *48*(2), 295–307. http://dx.doi.org/10.2307/352397

Pianta, R. C., La Paro, K. M., & Hamre, B. K. (2008). *Classroom assessment scoring system (CLASS) manual class.*

Quirk, M., Nylund-gibson, K., & Furlong, M. (2013). *Exploring patterns of Latino/a children's school readiness at kindergarten entry and their relations with Grade 2 achievement, Early Childhood Research Quarterly 28*. pp. 437–449.

Reardon, S. F., & Galindo, C. B. (2009).. *The hispanic-white achievement gap in math and reading in the elementary grades* (64) http://dx.doi.org/10.1598/RT.64.6.2

Reese, L., Garnier, H., Gallimore, R., & Goldenberg, C. (2000). Longitudinal analysis of the antecedents of emergent spanish literacy and middle-school English reading achievement of Spanish-speaking students. *American Educational Research Journal*, *37*(3), 633–662. http://dx.doi.org/10.3102/00028312037003633

Rock, D. A., & Pollack, J. M. (2002). *Early Childhood Longitudinal Study-Kindergarten Class of 1998–99 (ECLS-K): Psychometric Report for Kindergarten through First Grade. Working Paper Series.*. Retrieved from:. http://eric.ed.gov/?id=ED470320%5Cnhttp://files.eric.ed.gov/fulltext/ED470320. pdf

Rudasill, K. M., Hawley, L. R., LoCasale-Crouch, J., & Buhs, E. S. (2017). Child temperamental regulation and classroom quality in Head Start: Considering the role of cumulative economic risk. *Journal of Educational Psychology*, *109*(1), 118.

Rueda, R., Monzó, L. D., & Arzubiaga, A. (2003). Academic instrumental knowledge: Deconstructing cultural capital theory for strategic intervention approaches. *Current Issues in Education*, 6.

Stepler, R., & Brown, A. (2015). *Statistical portrait of hispanics in the United States, 1980–2013*. Retrieved from:. http://www.pewhispanic.org/2015/05/12/statistical-portrait-of-hispanics-in-the-united-states-2013-key-charts/

Wasik, B. A., Bond, M. A., & Hindman, A. H. (2006). The effects of a language and literacy intervention on Head Start children and teachers. *Journal of Educational Psychology*, *98*(1), 243–250. http://dx.doi.org/10.1037/0022-0663.98.1.63

White, L. J., & Greenfield, D. B. (2017). Executive functioning in Spanish- and English-speaking Head Start preschoolers. *Developmental Science*, http://dx.doi.org/10.1111/desc.12502

Woodcock, R. W., & Muñoz-Sandoval, A. F. (1993). An IRT approach to cross-language equating and interpretation. *European Journal of Psychological Assessment*, *9*, 233–241.

Woodcock, R., & Sandoval, A. (1996). *Batería Woodcock-Muñoz: Pruebas de habilidad 1996 cognitiva–revisada.*