MEMORANDUM November 18, 2016

TO: Lance Menster
Officer, Elementary Curriculum and Development

FROM: Carla Stevens
Assistant Superintendent, Research and Accountability

SUBJECT: **COMPARISONS OF ACADEMIC ACHIEVEMENT AMONG KINDERGARTENERS PREVIOUSLY ENROLLED IN HISD AND HEAD START PREKINDERGARTEN PROGRAMS, 2015–2016**

This report compares the academic achievement of kindergarteners who were previously enrolled in HISD-Head Start (dual), HISD and Head Start Standalone prekindergarten programs on the 2015–2016 Iowa and Logramos English language arts (ELA) and math subtests.

Key findings include:

- Dually-enrolled students achieved mean standard scores on the Logramos ELA and math subtests that were higher than those of their peers who were either enrolled in a standalone program, or had attended neither Pre-K program. Dually-enrolled students also had mean standard scores on the Iowa ELA and math subtests that were higher than those of their peers who attended neither Pre-K program.
- Dually-enrolled students achieved mean standard scores that were higher than those of their standalone peers on the Iowa ELA and math subtests (i.e., AVANCE and NCI) and the Logramos ELA and math subtests (i.e., AVANCE and HCDE).
- Economically-disadvantaged, dually-enrolled students obtained mean standard scores on the Iowa and Logramos ELA and math subtests that were higher than those of their economically-disadvantaged peers who were either enrolled in a standalone program or enrolled in neither Pre-K program.

Further distribution of this report is at your discretion. Should you have any further questions, please contact me at 713-556-6700.

Carla J. Stevens CJS

Attachment

cc: Grenita Lathan
Rachele Vincent
Janice Dingayan

HOUSTON INDEPENDENT SCHOOL DISTRICT

RESEARCH

Educational Program Report

COMPARISONS OF ACADEMIC ACHIEVEMENT AMONG KINDERGARTENERS PREVIOUSLY ENROLLED IN HISD AND HEAD START PREKINDERGARTEN PROGRAMS, 2015–2016

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COMPARISONS OF ACADEMIC ACHIEVEMENT AMONG KINDERGARTENERS PREVIOUSLY ENROLLED IN HISD AND HEADSTART PREKINDERGARTEN PROGRAMS, 2015–2016

Executive Summary

The purpose of the Houston Independent School District (HISD) and Head Start Collaborative programs is to share the responsibility for closing the achievement gap between economically-disadvantaged children and their more affluent peers. Currently, HISD collaborates with the following four federally-funded Head Start agencies that serve regional sectors of Harris County within the district's boundaries: AVANCE-Houston, Inc. (AVANCE), Gulf Coast Community Services Association (GCCSA), Harris County Department of Education (HCDE), and Neighborhood Centers, Inc. (NCI). This report compares the academic achievement of kindergarten students who were enrolled in an HISD-Head Start (dual) program to peers who attended either an HISD prekindergarten program, Head Start Standalone program, or neither one of the three programs during the 2014–2015 school year.

Highlights

- The majority of students who enrolled in either an HISD-Head Start (dual), HISD, or Head Start Standalone prekindergarten program were identified as economically disadvantaged, at risk and Hispanic. The dual program had the highest proportion of Hispanic students (79.3%). The majority of students who were not enrolled in either prekindergarten program were identified as not at risk and White.

- Students who were dually enrolled achieved mean standard scores on the Logramos English language arts (ELA) and mathematics subtests that were higher than those of their peers who were either enrolled in a Head Start Standalone, or had not attended either prekindergarten program. Students who were dually enrolled achieved mean standard scores on the Iowa ELA and mathematics subtests that were lower than those of their peers who did not enroll in either prekindergarten program.

- Regarding Head Start agency-affiliation, students who were dually enrolled achieved mean standard scores that were higher than those of their Head Start Standalone peers on the Iowa ELA and mathematics subtests (i.e., AVANCE and NCI) and the Logramos ELA and mathematics subtests (i.e., AVANCE and HCDE). In contrast, students who were dually enrolled in GCCSA achieved mean standard scores on the Iowa and Logramos ELA and mathematics subtests that were lower than those of their peers who enrolled in the corresponding standalone program.

- The gaps in academic achievement on the Iowa ELA and mathematics subtests between economically-disadvantaged and non-economically-disadvantaged students were smaller for children who were enrolled in either of the three prekindergarten programs compared to students who enrolled in neither of the prekindergarten programs.

- While economically-disadvantaged students who were dually enrolled obtained lower mean standard scores than their non-economically-disadvantaged peers on the Iowa and Logramos ELA and mathematics assessments, they scored on average higher than their economically-disadvantaged

peers who were either enrolled in a Head Start Standalone program or enrolled in neither of the prekindergarten programs.

- Regarding gender, both female and male students who were enrolled in either an HISD-Head Start (dual), HISD, or Head Start Standalone prekindergarten program achieved mean standard scores on the Logramos ELA and mathematics that were higher than those of their peers who had attended neither prekindergarten program. Female students who attended a Head Start Standalone program achieved mean standard scores on the Logramos ELA and mathematics that were higher than those of their male counterparts. This finding was particularly noted among female and male students on the Logramos mathematics assessment in favor of female students who attended either GCCSA or HCDE Head Start agency-affiliated programs.

- Regarding race and ethnicity, the achievement gap was widest between Black and White students who were not enrolled in either prekindergarten program, with the achievement gap in favor of dually-enrolled Black students on the Iowa ELA subtest. Comparisons between Black and Hispanic students revealed the achievement gaps were in favor of Hispanic students who were enrolled previously in AVANCE, GCCSA, and HCDE Head Start agency-affiliated programs.

- Students with disabilities (SWD) that were dually enrolled achieved mean standard scores on the Logramos ELA and mathematics that were higher than those of their peers with disabilities who attended HISD or Head Start Standalone programs.

Recommendations

1. Findings from this report suggests the Early Childhood Department and Head Start agency partners have made noteworthy efforts to prepare Hispanic students who take the Logramos ELA and mathematics subtests to be school ready. Expansion of these efforts tailored to meet the needs of other subpopulations may include: (a) students who take the Iowa ELA and mathematics subtests; (b) improving strategies that target young Black children for enrollment and retention in prekindergarten to improve their school readiness and reduce the achievement gap; and (c) examining pedagogical practices to determine whether instruction is culturally sensitive and responsive to individual student's needs and abilities.

2. To address variability in academic achievement among different subpopulations, the Early Childhood Department, Research & Accountability, and Head Start agency partners may consider collaborating to design and conduct a comprehensive, fidelity of implementation study to determine to what degree the HISD-Head Start collaborative programs are being delivered as intended. Only by understanding and measuring whether an intervention has been implemented with fidelity can education stakeholders gain a better understanding of *how and why* an intervention may or may not work, and the extent to which children's academic achievement can be improved (Carroll, Patterson, Wood, Booth, Rick, & Balain, 2007). This may involve organizing a research team to collect and analyze data for variables of interest. Examining district-, school- and classroom-level variables associated with students' academic success is paramount in order to determine which variables have the strongest relationship for improving (or depreciating) prekindergarten students' learning experiences and school readiness outcomes both across the district and within the context of demographic subpopulations. This will also involve referencing the study to the *Frog Street Pre-K (FSPK)* curriculum, the standards detailed in *Developmentally Appropriate Practice in Early Childhood Programs, Revised Edition* and the revised *Early Childhood Outcomes and Prekindergarten Guidelines, 2015*. Recently awarded funds (~$9.2 million) from Governor Greg Abbott's high-quality prekindergarten initiative may in part support efforts

to implement the study. Conducting a fidelity of implementation study is a positive step towards ensuring that the elements of a high-quality early education–high-quality curriculum, effective assessment, and program evaluation–are truly integrated into the HISD-Head Start programs. Consultation with Student Assessment may also be needed.

3. The Early Childhood Department and Head Start agency partners may consider sharing in-house program evaluations with each other to improve understanding of associations between classroom variables and academic achievement among students matriculating into HISD from Head Start Standalone programs.

4. The Early Childhood Department may consider strategies to support Head Start agencies as they meet the education needs of young children attending standalone programs. These supports may include (a) use of facilities, (b) assistance in the development and implementation of strategic recruitment and retention plans for highly-qualified early childhood teachers and certified professionals, and (c) professional development opportunities for teachers and administrators.

5. The Early Childhood Department and Head Start agency partners may consider expanding students' measures to assess the foundational learning experiences of the 'whole' child. While accountability is important, primary emphasis should be placed on using assessments as a means to determine progress, successes, and needs of the individual child. Consultation with Student Assessment, Research & Accountability, as well as research efforts within HISD may be needed.

Introduction

HISD Prekindergarten Programs

In compliance with the Texas Education Code § 29.153, the Houston Independent School District (HISD) has provided free prekindergarten classes for eligible Houston area four-year old students since the 1985–1986 school year. Children are enrolled into either one of four HISD prekindergarten program models: (1) an early childhood center (ECC), (2) a school-based program, (3) an HISD and Head Start program, or (4) a Montessori program. With the exception of HISD Montessori prekindergarten programs, the district uses the *Frog Street Pre-K (FSPK)* curriculum. *Frog Street Pre-K* focuses on the physical, social, emotional, cognitive, and language development of preschool-age children (Schiller, n.d.). Presently, the HISD operates 155 school-based and ECC campuses that provide instruction for young children (Houston Independent School District [HISD] Prekindergarten Homepage, 2016a).

Head Start

Created in 1965 to combat poverty and inequities experienced by disadvantaged populations, Head Start has evolved into one of the most significant investments in school readiness for low-income young children in the United States (U.S. Dept. of Health and Human Services Administration for Children and Families, Office of Head Start [OHS], 2015b). School readiness refers to children "possessing the skills, knowledge, and attitudes necessary for success in school and for later learning in life" (U.S. Dept. of Health and Human Services Administration for Children and Families, Office of Head Start [OHS], 2015a). To improve school readiness, Head Start programs were designed to meet the mental, social, and emotional development needs of children aged three to five years old. Head Start provides additional services that include medical, dental, nutritional, family engagement, parent education, and psychological resources (National Head Start Association [NHSA], 2016). Overseen by the U.S. Department of Human Services Administration for Children and Families, the Office of Head Start [OHS] has provided comprehensive services to over 30 million children and their families (U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse [WWC], 2015; NHSA, 2016).

HISD and Head Start Prekindergarten Collaborative Programs

In order to meet the needs of eligible young children and parents, state and local Head Start agencies collaborate and coordinate with other entities such as public schools to provide early childhood education (U.S. Department of Health and Human Services, Administration for Children and Families, Office of Head Start [OHS], 2007; National Association for the Education of Young Children [NAEYC], 2009; Del Grosso, Akers, Esposito, & Paulsell, 2014). Currently, the HISD collaborates with the following four federally-funded Head Start agencies that serve regional sectors of Harris County within the district's boundaries: AVANCE-Houston, Inc. (AVANCE); Gulf Coast Community Services Association (GCCSA); Harris County Department of Education (HCDE); and Neighborhood Centers, Inc. (NCI). **Appendix A-Tables 1-4** (p. 32–43) provide the program descriptions for each partnering agency as of the 2014–2015 school year.

The purpose of the Houston Independent School District (HISD) and Head Start Prekindergarten Collaborative programs is to share the responsibility for closing the achievement gap between economically-disadvantaged children and their more affluent peers. Provisions agreed upon by stakeholders for the 2014–2015 school year included HISD and Head Start teachers collaborating to deliver instruction and services to dually-enrolled students in HISD prekindergarten classrooms. These classrooms were within either an HISD early childhood center (ECC) or school-based prekindergarten program.

Appendix B-Figure 1 (p. 44) shows both the HISD-Head Start (dual) program and Head Start Standalone sites for the 2014–2015 school year. This collaborative, while adhering to Head Start performance standards, provided a program that was both supported by the HISD district curriculum, *Frog Street Pre-K (FSPK)*; and aligned with standards detailed in *Developmentally Appropriate Practice in Early Childhood Programs* (NAEYC, 2009), and the *Early Childhood Outcomes and Prekindergarten Guidelines* established by the Education Service Center (ESC) Region 13 and the Texas Education Agency (TEA) in 2011.

According to terms agreed upon by collaborative partners, HISD teachers were required to work 7.75 hours each day, with a 30 minute duty-free lunch and a 45 minute planning period. HISD teachers were funded through state revenues on the basis of average daily attendance generated by eligible students and district Title 1 full-day funds.

In order to support their respective HISD partner schools, Head Start agencies provided classrooms with appropriate furniture; materials; supplies; and playground equipment, as needed. Additional resources the agencies provided include teachers or teacher aides for dual classrooms, coverage of indirect costs with in-kind funds, and comprehensive services to eligible children at the designated schools.

Regarding enrollment, preschoolers with disabilities were enrolled according to HISD guidelines for special education and prekindergarten eligibility requirements. Home language surveys were administered to either a parent or guardian for completion and approval to place their child in a linguistically-appropriate HISD prekindergarten classroom (i.e., Transitional Bilingual, English as a Second Language, English, or Dual Language). This integrated partnership between HISD and Head Start agencies provides a shared responsibility for preparing students to be "school ready". It is the relationship of this partnership and young children's short-term academic achievement that is the primary focus for this report.

Literature Review

Researchers suggest inequities in children's school readiness and academic success increase rather than diminish over time (Aber, Burnley, Cohen, Featherman, Phillips, Raudenbush, & Rowan as cited in the NAEYC, 2009). This evidence substantiates findings in the *Houston Independent School District State of Texas Assessments of Academic Readiness (STAAR) Performance, Grades 3-8 Spring 2016* report that indicated the achievement gap typically widened among Black, Hispanic, and White students in reading and mathematics across grade levels (Houston Independent School District [HISD], 2016b, p. 7). While school readiness is important for all children, it is especially important for vulnerable and disadvantaged populations, including "girls, children with disabilities, ethnic minorities, and those living in rural areas" (United Nations Children's Fund [UNICEF], 2012, p. 9). Researchers also suggest inequities in school readiness and academic achievement are more prevalent among children of color with disadvantaged backgrounds (National Research Council [NRC], 2009). For instance, Magnuson and Waldfogel found evidence that suggested achievement disparities in mathematics were related to "differences in mathematics learning experiences before school entry, and fewer meaningful pedagogical experiences once children of color entered school" (cited in NRC, 2009, p. 100). Public preschools that serve economically-disadvantaged children tend "to provide fewer learning opportunities and supports for [literacy and] mathematical development than ones serving their more affluent peers" (Clements and Sarama as cited in NRC, 2009, p. 98).

The negative indicators associated with young children with disadvantaged backgrounds (e.g., at risk, poor access to resources, low income, limited parent education, single-parent household) can adversely alter their cognitive, socio-emotional, and physical developmental trajectories (Evans & Kim, 2013). Without

high-quality comprehensive interventions, associations among these variables may affect children with disadvantaged backgrounds throughout their lifetime, thus perpetuating the impacts of negative indicators across generations.

Head Start was designed to improve disadvantaged populations' outcomes by providing preschool-age children of low-income families with a comprehensive program to meet their emotional, social, cognitive, health, nutritional, and psychological needs (OHS, 2015b). Early childhood education researchers have found that young children who are at greater risk for school failure are more likely to succeed in school if they attend well-planned, high-quality early childhood programs (National Association of the Education of Young Children & National Association of Early Childhood Specialists in State Departments of Education [NAEYC & NAECS/SDE], 2003; National Research Council [NRC], 2001). High quality prekindergarten programs enhance children's cognitive development and improve their academic achievement, particularly for students from disadvantaged backgrounds (Brooks-Gunn, 2003; Currie, 2000; Gormley, Gayer, Phillips, & Dawson, 2005; Magnuson, Rhum, & Waldfogel, 2007; Shager, Schindler, Magnuson, Duncan, Yoshikawa, & Hart, 2013). Review of the literature concurs that the beneficial effects of early childhood interventions are typically much larger for more disadvantaged youth (Currie, 2000; Magnuson et al., 2007).

However, findings from previous research regarding the effectiveness of early childhood programs have varied considerably from negative or no effects, to substantial short- and long-term effects on young children's school readiness and achievement outcomes (Del Grosso, Akers, Esposito, & Paulsell, 2014; Houston Independent School District [HISD], 2015a; U.S. Advisory Committee on Head Start Research and Evaluation, 2012; Zhai, Brooks-Gunn, & Waldfogel, 2011). Reasons contributing to the divergence in findings regarding early childhood programs' true impact on young children's school readiness include (a) selection bias (Advisory Committee on Head Start Research and Evaluation, 2012; Gormley et al., 2005); (b) differences in research methodologies and scope (Del Grosso et al., 2014); and (c) variations in reliability and validity of psychometric measures. Additionally, a literature review conducted by the Office of Planning, Research and Evaluation (OPRE) that assessed the current knowledge base for early care and education (ECE) partnerships revealed deficiencies in evidence to determine if partnerships between entities such as Head Start and public schools were "on track" to meet both short- and long-term outcomes of young children (Del Grosso et al., 2014).

Scope of the Evaluation

The purpose of this report was to inform both HISD and Head Start stakeholders about kindergarten students' achievement levels in English language arts and mathematics after enrollment in a prekindergarten program the previous school year. Specifically, the academic achievement of students was measured several months after they exited either an HISD, HISD-Head Start (dual), or Head Start (HS) Standalone prekindergarten program. This report uses a quasi-experimental research design to answer the following research questions:

1. What were the enrollment trends of HISD kindergarten students based on program enrollment status and Head Start agency affiliation in 2014–2015?

2. What were the demographic characteristics of HISD kindergarten students based on program enrollment status and Head Start agency affiliation in 2014–2015?

3. What differences in academic achievement existed between HISD kindergarten students who were dually enrolled compared to students who were enrolled in either an HISD or Head Start Standalone prekindergarten program during the 2014–2015 school year?

4. What differences in kindergarten students' academic achievement existed among prekindergarten programs when economic status was taken into account?

5. What differences in academic achievement existed between HISD kindergarten students who were dually enrolled compared to students who were enrolled in a Head Start Standalone program during the 2014–2015 school year?

6. What differences in kindergarten students' academic achievement existed among Head Start agencies when economic status was taken into account?

Methods

Data Collection

- Data collection for HISD kindergarteners who were enrolled previously in either an HISD, HISD-Head Start (dual) or Head Start Standalone prekindergarten program during the 2014–2015 school year consisted of three phases. The first phase of data collection consisted of identifying all prekindergarten and kindergarten students who attended HISD during the 2014–2015 and 2015–2016 school years, respectively. Prekindergarten students included in this report were coded as 'PK' (prekindergarten) or 'EE' (early childhood) in the Public Education Information Management System (PEIMS) 2014–2015 database. Students identified in both PEIMS 2014–2015 and 2015–2016 databases as a kindergartener (i.e., repeater) were excluded from further analyses in this report. The PEIMS Prekindergarten 2014–2015 database was then merged to the PEIMS 2015–2016 1st Time Kindergartener database in order to identify kindergarteners who were enrolled in an HISD prekindergarten program the previous year.

- The second phase of data collection consisted of identifying all students who attended one of the four Head Start agency-affiliated prekindergarten programs during the 2014–2015 school year. The Head Start agencies provided a list of children who were either dually enrolled or attended a Head Start Standalone program. Unique codes were created for students on the Head Start lists and for prekindergarten students identified in the PEIMS Prekindergarten 2014–2015 database. The PEIMS Prekindergarten 2014–2015 database was merged to the Head Start student lists provided by the agencies. Triangulation of data from the Head Start agencies and PEIMS records revealed that there were students who were identified as attending both prekindergarten programs in the 2014–2015 school years. As such, students within this subset were not considered for further analyses in this report. The only exception were students who attended Young Learners Academy; an HISD charter school. These students were identified as attending a Head Start Standalone program.

- The last phase of the data collection process consisted of merging the PEIMS 2015–2016 1st Time Kindergartener database with the Riverside Iowa and Logramos 2015–2016 databases, followed by the Head Start 2014–2015 lists to identify students who took the assessments. The latter merge consisted of assigning unique identifiers to kindergarten students in the Iowa and Logramos 2015–2016 databases. A comparison of the 2014–2015 grade level and prekindergarten program type were conducted to determine whether or not a student attended an HISD, HISD-Head Start (dual), or Head Start (HS) Standalone prekindergarten program.

Measures

- The academic achievement of HISD kindergarten students was measured using the Iowa Assessments and Logramos 3rd Edition Norm Reference Tests (NRT). The Iowa is designed to provide a thorough assessment of a student's progress in skills and standards that are essential to successful learning (Houston Independent School District [HISD], 2015b). The Logramos 3 parallels the scope and sequence of the Iowa as it measures academic achievement of Spanish speaking students (Aparicio & Nikolov, n.d.). During the 2015–2016 school year, all HISD kindergarten students were administered either the Iowa or Logramos in the month of December. The primary academic outcome measures of interest for this report included English language arts (ELA), and mathematics subtests mean standard scores from the Iowa and Logramos assessments. The Iowa ELA (Total) is a composite score computed from students' achievement on the reading, language and vocabulary subtests (Iowa Testing Programs [ITP], 2012). The Logramos ELA is a composite score computed for student's achievement on the reading and language subtests.

Statistical Analyses

- Summary statistics (i.e., counts, percentages, mean standard scores, standard deviations) were computed to determine kindergartener's academic achievement in English language arts (ELA) and mathematics. Results emerging from this report describe comparisons of academic achievement of children who enrolled in an HISD, HISD-Head Start (dual), and Head Start Standalone prekindergarten program the previous year to (a) each other and (b) children who did not attend one of the three programs during the 2014–2015 school year. The information presented in this report was primarily described by mean standard scores. Because standard deviations were not taken into account for results interpretations, caution should be exercised when examining relationships between study variables.

  Additional examination of the relationships among measures within the context of student demographic characteristics provided information regarding who from their respective programs had higher or lower academic achievement in kindergarten. The demographic characteristics of HISD kindergarten students used for this report were collected from the Iowa Assessments and Logramos 3 2015–2016 databases. Characteristics included gender, race and ethnicity, economic status, student with disabilities (SWD), limited English proficient (LEP), and at risk. Because Black, Hispanic, and White students accounted for at least 94.0% of the student populations for each comparisons groups, statistical analyses with respect to race and ethnicity focused on these three predominant subgroups. Students classified as SWD met the requirements to receive special education services according to district, state and national guidelines. **Appendix C- Tables 1-5** (p. 45-49), **Appendix D- Tables 1-5** (p. 50-54), and **Appendix E- Tables 1-4** (p. 55-58) show counts, percentages, mean standard scores, and standard deviations for students based on demographic characteristics and academic achievement at the prekindergarten program and Head Start agency levels, respectively.

Limitations

- The lack of knowledge and variability in students' enrollment in other early childhood programs during the 2014–2015 school year that did not include HISD, dual HISD-Head Start (dual), and Head Start Standalone programs presented a limitation. This report also did not take into account the number of years a child may have attended an HISD, dual, or Head Start Standalone program prior to entry into kindergarten in 2015–2016. One reason the number years was not taken into account was because while HISD prekindergarten and dual programs typically enroll students one year prior to kindergarten

(age four), Head Start usually targets enrollment of children at age three. Not including students who had attended Head Start when they were age three would have reduced agencies' sample populations. As such, findings should be interpreted as the average impact of prekindergarten programs on students' academic achievement (Zhai et al., 2011).

- Academic measures were retrieved after students attended a prekindergarten program. Controlling for academic achievement level prior to prekindergarten would have helped explain some of the variance in academic outcomes among students by program enrollment status. To reduce the impact of this limitation, the researcher (a) used descriptive statistics to analyze trends and relationships among variables, (b) refrained from making causal claims regarding variable associations, and (c) refrained from generalizing results generated in this report beyond the target populations.

- Data provided by the Head Start agencies did not contain a unique identifier for their students, which made it difficult to link students from Head Start to their HISD kindergarten enrollment data the following year. Some students who attended Head Start during 2014–2015 were noted to also have an HISD local ID. Because there was uncertainty about which program provided instruction and education supports, these students where dropped from further analyses.

- Data retrieved from PEIMS represents a 'snapshot' of students who were enrolled by the last Friday in October of each school year in HISD (Texas Education Agency [TEA], 2016). Students present for the 'snapshot' may not have been actively enrolled in an HISD prekindergarten program the entire year. In contrast, students who were not present during the 'snapshot' may have actually enrolled later into a program, but were not identified as having attended HISD Pre-K the 2014–2015 school year.

- Differences in sample size at the program and agency levels presented limitations to associations observed during data analyses. As such, results should be interpreted with caution given the high variability in sample size across programs, student's affiliation with a Head Start agency, and demographic characteristics.

- The information in this report was primarily examined in the context of assessment outcomes, students' demographic characteristics, and prekindergarten program type. Because no components of the prekindergarten programs were included in this report, causal inferences in reference to program attributes and impact could not made.

Results

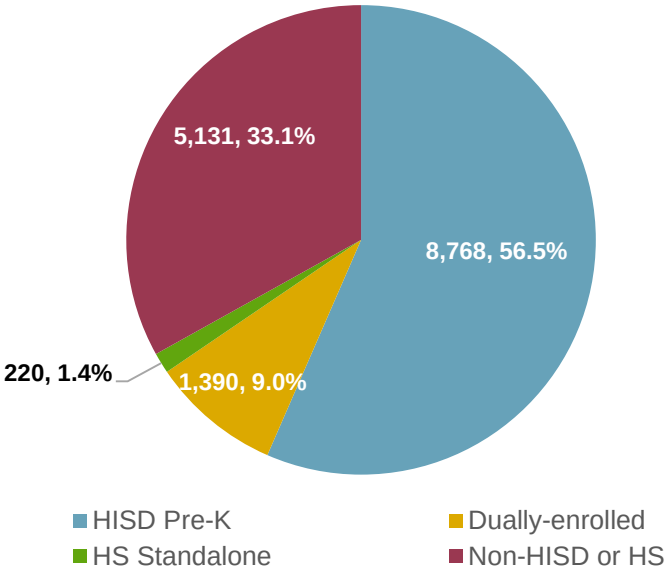
What were the enrollment trends of HISD kindergarten students based on program enrollment status and Head Start agency affiliation in 2014–2015?

Figures 1 and **2** show the number and percent of kindergarteners who were enrolled previously in one of the three prekindergarten programs during the 2014–2015 school year.

- A total of 15,509 students were identified in the final databases created for this report. Figure 1 shows the majority of students were either enrolled in HISD Pre-K (56.5%), or not enrolled in either prekindergarten program (33.1%).

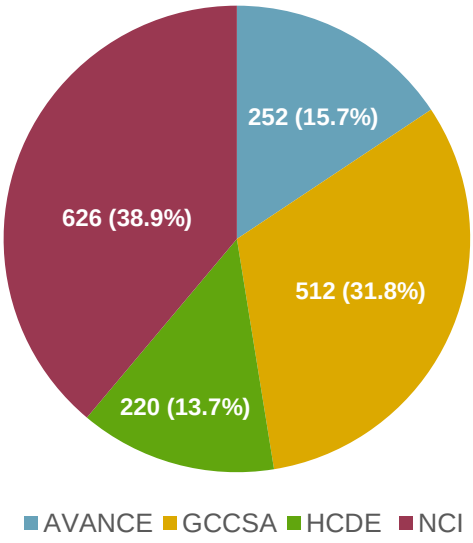
- A total of 1,610 students were identified as affiliated with the four Head Start agencies. Figure 2 shows the majority of students were either enrolled in an NCI- (38.9%) or GCCSA- (31.8%) affiliated program.

Figure 1. Enrollment of kindergarten students by prekindergarten program enrollment status the previous year, 2015–2016



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Figure 2. Enrollment of kindergarten students by Head Start agency affiliation the previous year, 2015–2016



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

What were the demographic characteristics of HISD kindergarten students based on program enrollment status and Head Start agency affiliation in 2014–2015?

- Appendix C- Table 1 (p. 45) shows the demographic characteristics of HISD kindergarten students based on program enrollment status. The percentage of students who enrolled in one of the three prekindergarten programs and those who had not attended either program were comparable with respect to gender. Slightly higher percentages of male students (53.2%) were enrolled in a Head Start standalone program compared to female students (46.8%).

- Most students (53.6% to 79.3%) were identified as Hispanic, with the dually-enrolled program having the highest percentage. White students were disproportionately represented in higher rates among students who did not attend either prekindergarten program during the 2014–2015 school year. Low percentages of students ($\leq$ 6.8%) were identified as students with a disability (SWD) for all comparison groups.

- Students who enrolled in one of the three prekindergarten programs were more likely to be identified as economically disadvantaged, at risk, and limited English proficient (LEP), in contrast to students who had not attended either prekindergarten program.

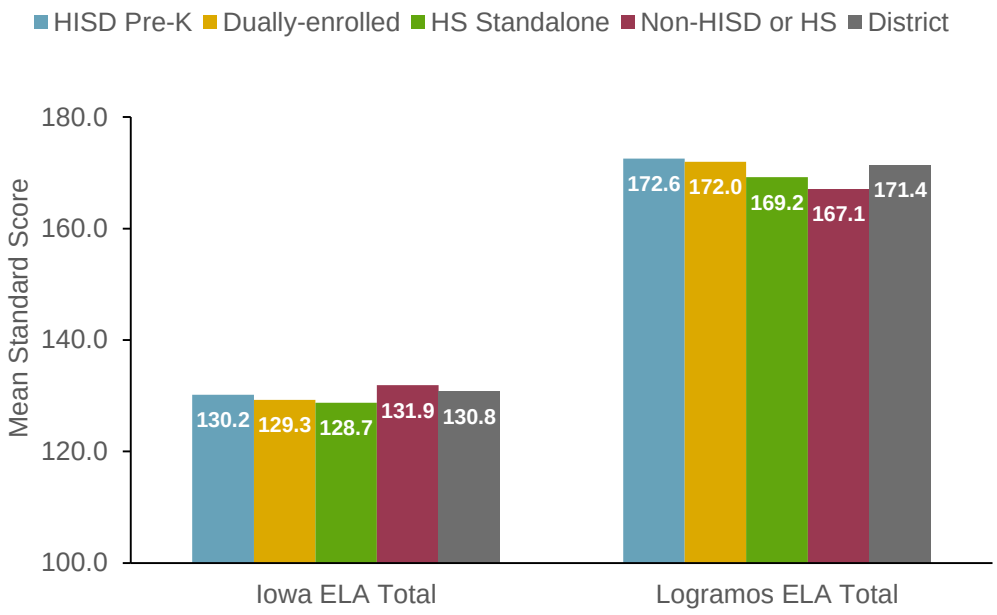
- Appendix D- Table 1 (p. 50) shows the demographic characteristics of HISD kindergarten students based on Head Start agency affiliation. The percentages of students who were enrolled in one of the four Head Start agency-affiliated programs were comparable with respect to gender and economic status. Most students (63.2% to 84.9%) were identified as Hispanic, with AVANCE having the highest percentages. GCCSA and HCDE served larger proportions of Black students (27.3% and 31.4%, respectively).

- Students who enrolled in NCI programs were more likely to be identified as at risk (72.4%) and LEP (72.5%), in contrast to students who enrolled in the three other Head Start agency programs.

What differences in academic achievement existed between HISD kindergarten students who were dually enrolled compared to students who were enrolled in either an HISD or Head Start Standalone prekindergarten program during the 2014–2015 school year?

Figures 3 and **4** show the academic achievement on the Iowa and Logramos English language arts (ELA) and mathematics subtests among kindergarten students who were enrolled in different prekindergarten programs during the 2014–2015 school year. Appendix C-Tables 2-5 (p. 51-54) present the descriptive statistics by program type and demographic characteristics for students who were administered the Iowa and Logramos ELA and mathematics subtests during December 2015. Notable observations among subpopulation academic achievement are noted in the Discussion section of this report. The district's mean standard score serves as a reference point for program type comparisons.

Figure 3. Mean standard scores on the 2015–2016 Iowa and Logramos English language arts subtests for HISD kindergarten students by prekindergarten program enrollment status the previous year



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Iowa ELA Results

- Students who were dually enrolled (M = 129.3) achieved a mean standard score on the Iowa ELA subtest that was higher than that of their peers who were enrolled in a Head Start Standalone (M = 128.7) prekindergarten program.

- Students who were dually enrolled achieved a mean standard score on the Iowa ELA subtest that was lower than those of their peers who either enrolled in HISD Pre-K (M = 130.2) or had not attended either prekindergarten program (M = 131.9).

- With respect to race and ethnicity, the achievement gap was the widest between Black (M = 129.4) and White (M = 138.0) students who had not attended either prekindergarten program (see Appendix C-Table 2).

Logramos ELA Results

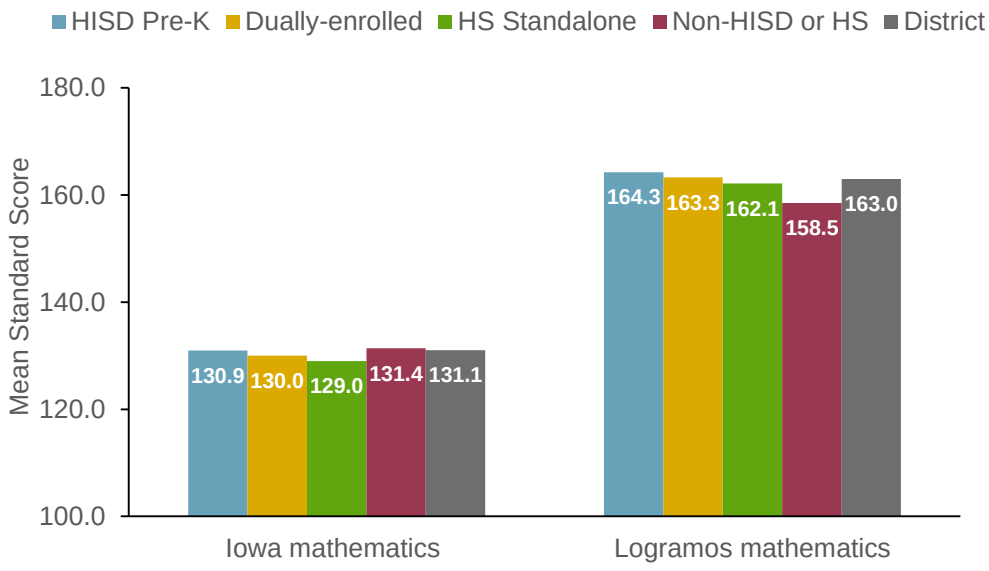
- Students who were dually enrolled (M = 172.0) achieved a mean standard score on the Logramos ELA subtest that was slightly lower than that of their peers who were enrolled in an HISD prekindergarten program (M = 172.6).

- Students who were dually enrolled achieved a mean standard score on the Logramos ELA subtest that was higher than those of their peers who were either enrolled in a Head Start Standalone program (M = 169.2) or did not attend either prekindergarten program (M = 167.1).

- With respect to gender, achievement gaps in favor of female students were observed to occur in the contexts of Head Start Standalone programs, and for students who had not attended either prekindergarten program (see Appendix C-Table 4).

- Students with disabilities that were dually enrolled (M = 165.0) achieved a mean standard score on the Logramos ELA that was higher than those of their peers with disabilities who had either attended HISD Pre-K (M = 163.0) or Head Start Standalone programs (M = 159.0), or had not enrolled in either prekindergarten program during the 2014–2015 school year (M = 161.3; see Appendix C-Table 4).

Figure 4. Mean standard scores on the 2015–2016 Iowa and Logramos mathematics subtests for HISD kindergarten students by prekindergarten program enrollment status the previous year



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Iowa Mathematics Results

- Students who were dually enrolled (M = 130.0) achieved a mean standard score on the Iowa mathematics subtest that was higher than that of their peers who attended a Head Start Standalone prekindergarten program (M = 129.0).

- Students who were dually enrolled achieved a mean standard score on the Iowa mathematics subtest that was lower than those of their peers who had either enrolled in HISD Pre-K (M = 130.9) or had not attended either prekindergarten program (M = 131.4).

- With respect to race and ethnicity, the achievement gap was the widest between Black (M = 128.6) and White (M = 136.9) students who had not attended either prekindergarten program (see Appendix C-Table 3).

Logramos Mathematics Results

- Students who were dually enrolled achieved a mean standard score on the Iowa mathematics subtest that was higher than those of their peers who had either enrolled in a Head Start Standalone (M = 162.1), or not attended either prekindergarten program (M = 158.5).

- Students who were dually enrolled (M = 163.3) achieved a mean standard score on the Logramos mathematics subtest that was lower than that of their peers who were enrolled in an HISD prekindergarten program (M = 164.3).

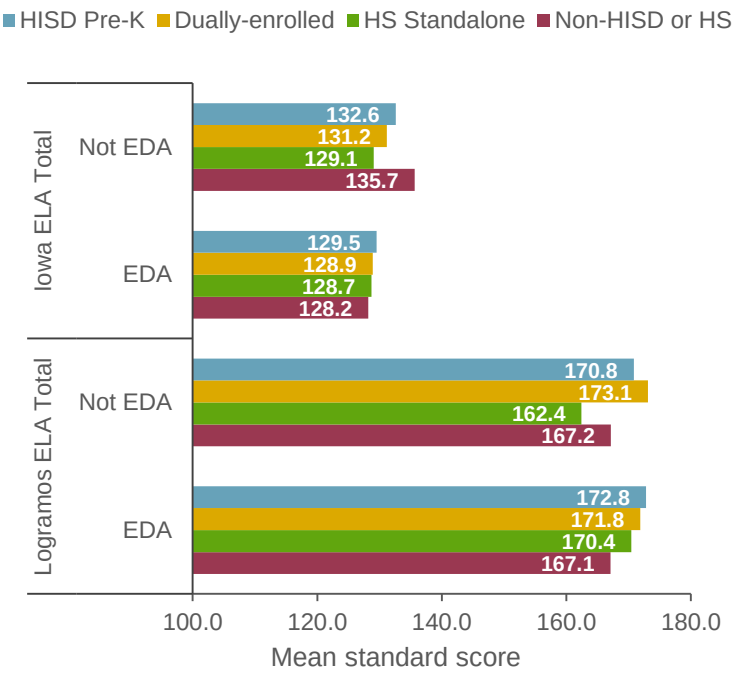
- With respect to gender, achievement gaps in favor of female students were observed to occur in the contexts of Head Start Standalone programs, and for students who had not attended either prekindergarten program (see Appendix C-Table 5).

- Students with disabilities that were dually enrolled (M = 159.2) achieved a mean standard score on the Logramos mathematics subtest that was higher than those of their peers with disabilities who had attended either HISD Pre-K or Head Start Standalone programs (M = 157.0 and 155.1, respectively) during the 2014–2015 school year (see Appendix C-Table 5).

What differences in kindergarten students' academic achievement existed among prekindergarten programs when economic status was taken into account?

Figures 5 and **6** show the differences in academic achievement on the Iowa and Logramos English language arts (ELA) subtests among kindergarten students who were enrolled in one of the three prekindergarten programs during the 2014–2015 school year based on economic status.

Figure 5. Mean standard scores on the 2015–2016 Iowa and Logramos English language arts subtests for HISD kindergarten students by prekindergarten program enrollment status the previous year and economic status



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.
Note. "EDA" refers to economically disadvantaged.

Iowa ELA Results

- Economically-disadvantaged students who were dually enrolled (M = 128.9) achieved a mean standard score on the Iowa ELA subtest that was slightly higher than those of their economically-disadvantaged peers who attended either a Head Start Standalone (M = 128.7), or had not attended either prekindergarten program (M = 128.2).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Iowa ELA that was lower than that of their economically-disadvantaged peers who enrolled in HISD Pre-K (M = 129.5).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Iowa ELA subtest that was lower than that of their non-economically-disadvantaged peers (M = 131.2).

- Results indicated the achievement gap, regardless of prekindergarten enrollment status, favored non-economically-disadvantaged students. However, the widest achievement gap occurred among children who attended neither Pre-K program, in favor of non-economically-disadvantaged students by 7.5 percentage points.

Logramos ELA Results

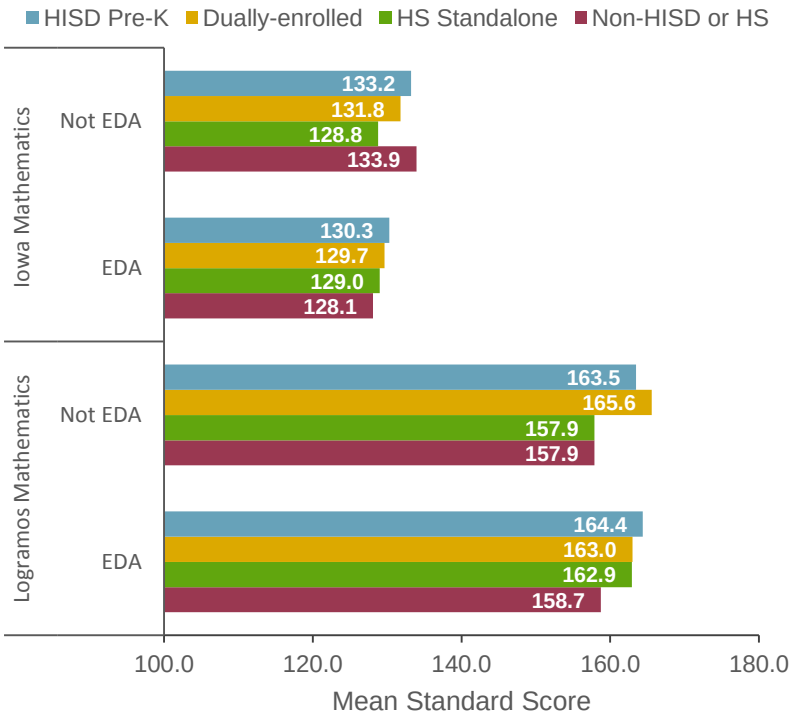
- Economically-disadvantaged students who were dually enrolled (M = 171.8) achieved a mean standard score on the Logramos ELA subtest that was higher than those of their economically-disadvantaged peers who either enrolled in a Head Start Standalone program (M = 170.4) or did not attend either of the three prekindergarten programs (M = 167.1).

- Economically-disadvantaged students who were dually enrolled (M = 171.8) achieved a mean standard score on the Logramos ELA subtest that was slightly lower than that of their economically-disadvantaged peers who attended HISD Pre-K (M = 172.8).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Logramos ELA subtest that was lower than that of their non-economically-disadvantaged peers (M = 173.1).

- Results indicated variability in the achievement gap based on students' economic status and prekindergarten enrollment status. The widest achievement gap occurred among children who attended a Head Start Standalone, in favor of economically-disadvantaged students by 8.0 percentage points. However, due to sample sizes among Head Start Standalone students who were identified as economically disadvantaged (n = 79) and non-economically-disadvantaged (n = 14), caution should be exercised regarding the interpretation of relationships among variables.

Figure 6. Mean standard scores on the 2015–2016 Iowa and Logramos mathematics subtests for HISD kindergarten students by prekindergarten program enrollment status the previous year and economic status



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.
Note. "EDA" refers to economically disadvantaged.

Iowa Mathematics Results

- Economically-disadvantaged students who were dually enrolled (M = 129.7) achieved a mean standard score on the Iowa mathematics subtest that was higher than those of their economically-disadvantaged peers who enrolled in a Head Start Standalone program (M = 129.0) or did not attend either prekindergarten program (M = 128.1).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Iowa mathematics subtest that was either slightly lower than that of their economically-disadvantaged peers who attended HISD Pre-K (M = 130.3).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Iowa mathematics subtest that was lower than that of their non-economically-disadvantaged peers (M = 131.8).

- Results indicated the achievement gap, regardless of prekindergarten enrollment status, favored non-economically-disadvantaged students. The only exception occurred among students who were enrolled in a Head Start Standalone program as they achieved comparable mean standard scores on the Iowa

mathematics subtest regardless of economic status. However, due to sample sizes among Head Start Standalone students who were identified as economically disadvantaged (n = 109) and non-economically-disadvantaged (n = 15), caution should be exercised regarding the interpretation of relationships among variables. The widest achievement gap occurred among children who attended neither Pre-K program, in favor of non-economically-disadvantaged students by 5.8 percentage points.

Logramos Mathematics Results

- Economically-disadvantaged students who were dually enrolled (M = 163.0) achieved a mean standard score on the Logramos mathematics subtest that was either comparable to their economically-disadvantaged peers who attended a Head Start Standalone (M = 162.9) or lower than their economically-disadvantaged peers who enrolled in HISD Pre-K (M = 164.4).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Logramos mathematics subtest that was higher than their economically-disadvantaged peers who did not attend either prekindergarten program (M = 158.7).

- Economically-disadvantaged students who were dually enrolled achieved a mean standard score on the Logramos mathematics subtest that was lower than that of their non-economically-disadvantaged peers (M = 165.6).

- Results indicated variability in the achievement gap based on students' economic status and prekindergarten enrollment status. The widest achievement gap occurred among children who attended a Head Start Standalone, in favor of economically-disadvantaged students by 5.0 percentage points. However, due to sample sizes among Head Start Standalone students who were identified as economically disadvantaged (n = 79) and non-economically-disadvantaged (n = 14), caution should be exercised regarding the interpretation of relationships among variables.

What differences in academic achievement existed between HISD kindergarten students who were dually enrolled compared to students who were enrolled in a Head Start Standalone program during the 2014–2015 school year?

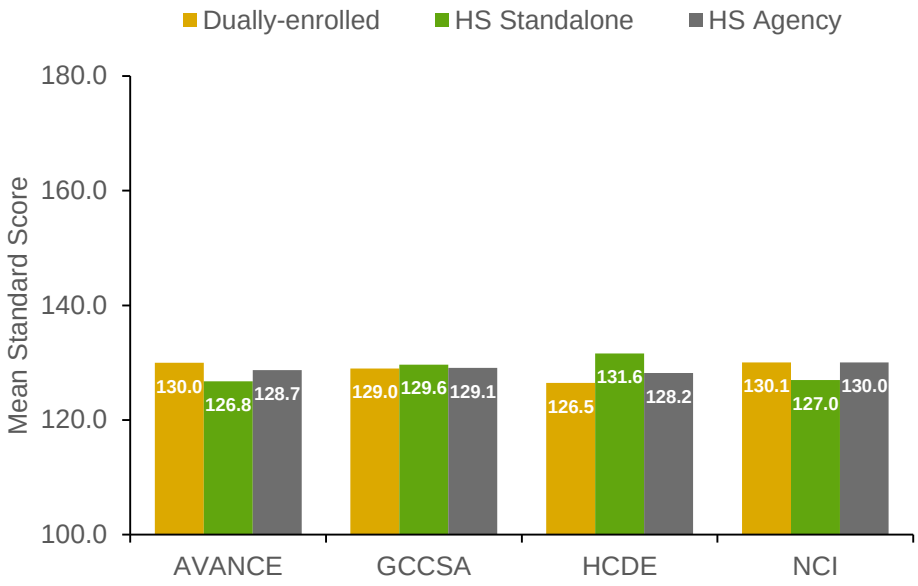
Figures 7 to **Figure 10** show comparisons of academic achievement on the Iowa and Logramos ELA and mathematics subtests between kindergarten students who were enrolled previously in either an HISD-Head Start (dual) or Head Start Standalone prekindergarten program during the 2014–2015 school year. The Head Start agency average serves as a reference point for program type comparisons.

Iowa ELA Results

- Students who were dually enrolled in either an NCI (M = 130.1) or AVANCE (M = 130.0) program achieved mean standard scores that were higher than those of their peers who attended the corresponding Head Start Standalone programs (M = 127.0 and M = 126.8, respectively).

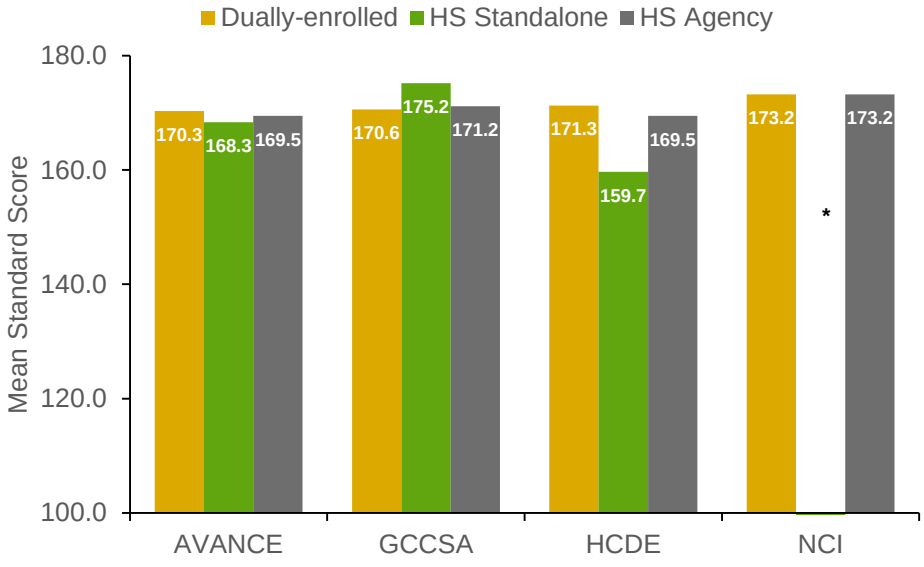
- Students who were dually enrolled in a GCCSA (M = 129.0) or HCDE program (M = 126.5) achieved a mean standard score that was lower than those of their peers who attended the corresponding Head Start Standalone program (M = 129.6 and M = 131.6, respectively).

Figure 7. Mean standard scores on the 2015–2016 Iowa English language arts subtest for HISD kindergarten students by Head Start agency affiliation the previous year



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Figure 8. Mean standard scores on the 2015–2016 Logramos English language arts subtest for HISD kindergarten students by Head Start agency affiliation the previous year



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Note. * indicates less than five students' scores were measured for subgroup.

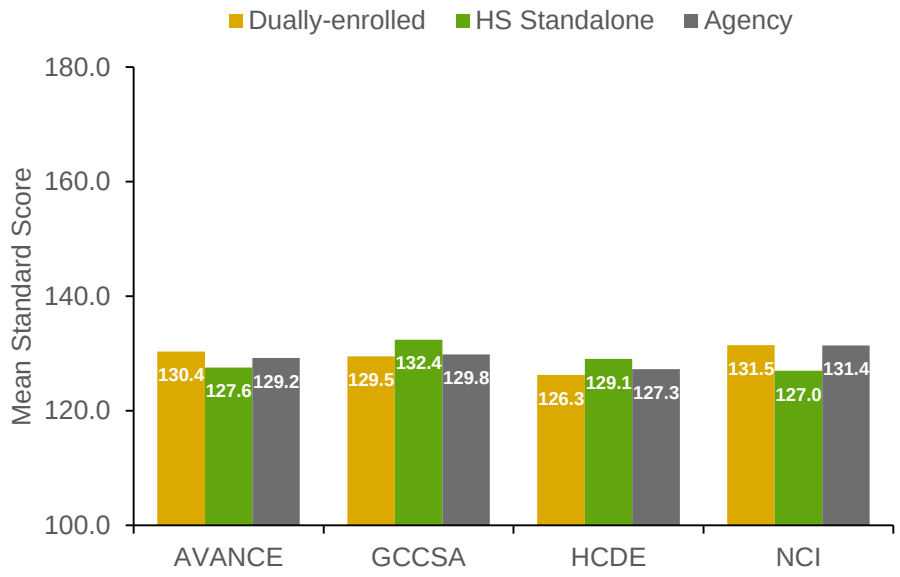
Logramos ELA Results

- Students who were dually enrolled in either an HCDE (M = 171.3) or AVANCE (M = 170.3) program achieved mean standard scores on the Logramos ELA subtest that were higher than those of their peers who attended the corresponding Head Start Standalone programs (M = 159.7 and M = 168.3, respectively).

- Students who were dually enrolled in a GCCSA program (M = 170.6) achieved a mean standard score that was lower than that of their peers who attended the corresponding Head Start Standalone program (M = 175.2).

- Due to a sample size of less than five students, a comparison was not made between programs affiliated with the NCI Head Start agency. However, the mean standard score achieved by students who were dually enrolled in NCI (M = 173.2) was higher than those of their dually-enrolled peers attending HCDE, AVANCE, and GCCSA programs.

Figure 9. Mean standard scores on the 2015–2016 Iowa mathematics subtest for HISD kindergarten students by Head Start agency affiliation the previous year



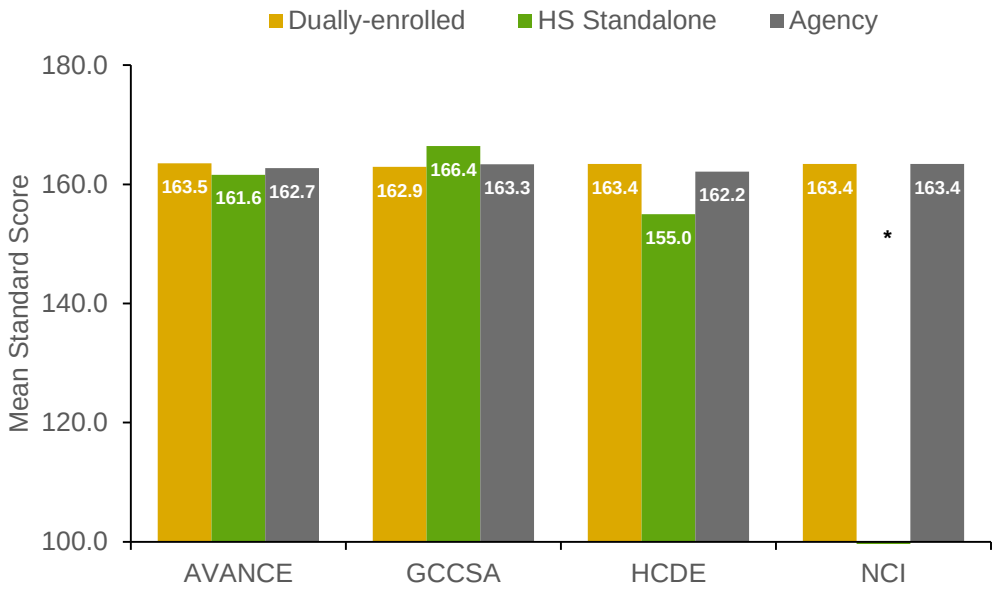
Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Iowa Mathematics Results

- Students who were dually enrolled in either an NCI (M = 131.5) or AVANCE (M = 130.4) program achieved mean standard scores that were higher than those of their peers who attended the corresponding Head Start Standalone programs (M = 127.0 and M = 127.6, respectively).

- Students who were dually enrolled in either a GCCSA (M= 129.5) or HCDE (M = 126.3) achieved mean standard scores that were lower than those of their peers who attended the corresponding Head Start Standalone programs (M = 132.4 and M = 129.1, respectively).

Figure 10. Mean standard scores on the 2015–2016 Logramos mathematics subtests for HISD kindergarten students by Head Start agency affiliation the previous year



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.
Note. * indicates less than five students' scores were measured for subgroup.

Logramos Mathematics Results

- Students who were dually enrolled in either an AVANCE (M = 163.5) or HCDE (M = 163.4) program achieved mean standard scores that were higher than those of their peers who attended the corresponding Head Start Standalone programs (M = 161.6 and M = 155.0, respectively).

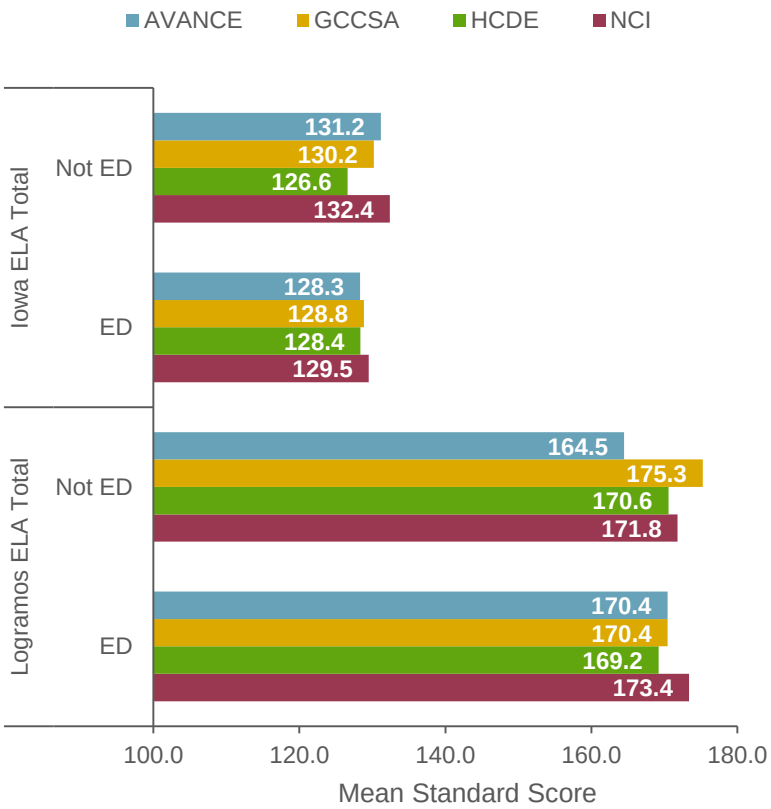
- Students who were dually enrolled in a GCCSA program (M = 162.9) achieved a mean standard score that was lower than those of their peers who attended the corresponding Head Start Standalone program (M = 166.4).

- Due to a sample size of less than five students, a comparison was not made between programs affiliated with the NCI Head Start agency. However, the mean standard score achieved by students who were dually enrolled in NCI (M = 163.4), was comparable to dually-enrolled peers attending AVANCE and HCDE agency programs.

What differences in kindergarten students' academic achievement existed among Head Start agencies when economic status was taken into account?

Figures 11 and **12** show the differences in academic achievement on the Iowa and Logramos English language arts (ELA) subtests among kindergarten students who were enrolled in an HISD-Head Start (dual) or Head Start Standalone prekindergarten program during the 2014–2015 school year based on economic status. Due to disproportions present in sample size, analyses were not conducted to factor in dual-enrollment status. Because over 80 percent of the students who enrolled in each Head Start agency were economically disadvantaged (see Appendix D-Table 1), caution was exercised when interpreting relationships among academic achievement, Head Start agency, and economic status variables. Appendix E-Table 1 to 4 show the academic results of students who attended Head Start Standalone programs by Head Start agency site (p. 55-58).

Figure 11. Mean standard score differences on the 2015–2016 Iowa and Logramos English language arts subtests by Head Start agency affiliation the previous year and economic status



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Iowa ELA Results

- Economically-disadvantaged students who were enrolled in an NCI-affiliated program (M = 129.5) achieved a mean standard score on the Iowa ELA that was higher than those of their economically-disadvantaged peers who attended the three other Head Start agency programs.

- Economically-disadvantaged students who were enrolled in either Head Start agency affiliated program achieved mean standard scores on the Iowa ELA subtest that were lower than those of their non-economically-disadvantaged peers. The only exception was regarding economically-disadvantaged, HCDE students who achieved a higher mean standard score than their non-economically-disadvantaged peers.

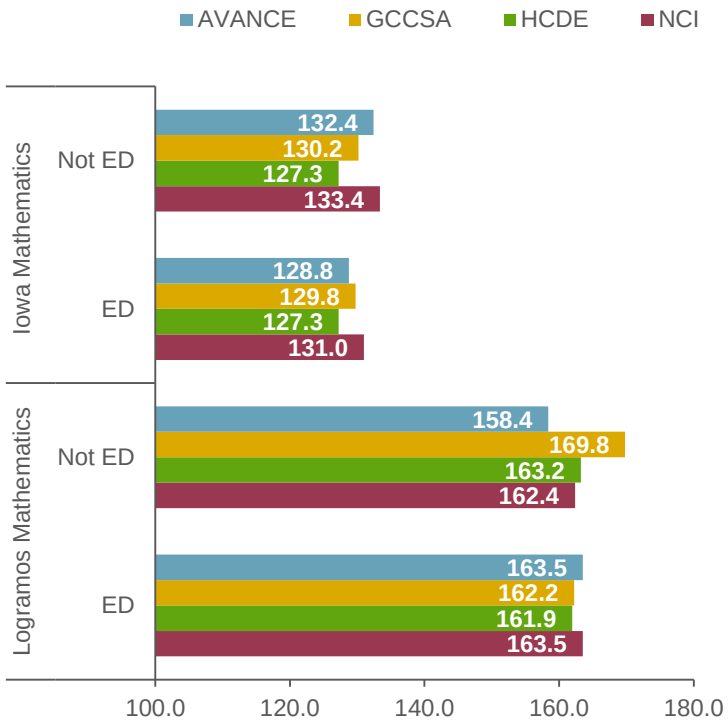
Logramos ELA Results

- Economically-disadvantaged students who were enrolled in an NCI-affiliated program (M = 173.4) achieved a mean standard score on the Logramos ELA that was higher than those of their economically-disadvantaged peers who attended the three other Head Start agency programs.

- Economically-disadvantaged students who were enrolled in either an AVANCE- (M = 170.4) or NCI- (M = 173.4) affiliated program achieved mean standard scores on the Logramos ELA that were higher than those of their non-economically-disadvantaged peers (M = 164.5 and 171.8, respectively).

- Economically-disadvantaged students who were enrolled in a GCCSA- (M = 170.4) affiliated program achieved a mean standard score on the Logramos ELA that was lower than that of their non-economically-disadvantaged peers (M = 175.3).

Figure 12. Mean standard score differences on the 2015–2016 Iowa and Logramos mathematics subtests by Head Start agency affiliation the previous year and economic status



Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Iowa Mathematics Results

- Economically-disadvantaged students who were enrolled in an NCI-affiliated program (M = 131.0) achieved a mean standard score on the Iowa mathematics subtest that was higher than those of their economically-disadvantaged peers who attended the other three Head Start agency programs.

- Students who were enrolled in an HCDE-affiliated program achieved mean standard scores that were comparable regardless of economic status. Conversely, economically-disadvantaged students who attended the other three Head Start agency programs obtained lower mean standard scores than those of their non-economically disadvantaged peers.

Logramos Mathematics Results

- Economically-disadvantaged students who were enrolled in either an AVANCE- or NCI-affiliated program (each an M = 163.5) achieved mean standard scores on the Logramos mathematics subtest that were higher than those of their economically-disadvantaged peers who attended GCCSA (M = 162.2) and HCDE (M = 161.9) programs. Additionally, both AVANCE and NCI economically disadvantaged students also obtained mean standard scores that were higher than those of their non-economically-disadvantaged peers (M = 158.4 and 162.4, respectively).

Discussion

"An effective system of early childhood education [supports the] reciprocal relationship among curriculum, child assessment, and program evaluation" (NAEYC/NAECS/SDE, 2003, p. 1). The prekindergarten program is a complex subsystem of early childhood education that is situated within the walls of an elementary school, charged with making and implementing decisions to promote the equitable development, learning, and school readiness of all children. Each child-whatever her or his abilities and differences- should be respected and taken into careful consideration in order for her or him to be included in prekindergarten to the fullest extent with the highest expectations (NAEYC, NAECS/SDE, 2003). For this report, descriptive statistical analyses were used to examine relationships among students' academic achievement and prekindergarten program model. Specifically, variables were analyzed to determine the mean academic achievement of kindergarten students who had attended either an HISD, HISD-Head Start (dual), or Head Start Standalone prekindergarten program the during the 2014–2015 school year. Investigating similarities and variations in variable relationships with respect to students' program affiliation revealed which student groups had either higher, comparable, or lower mean standard scores in English Language arts (ELA) and mathematics on the Iowa and Logramos assessments.

Findings from this study revealed that students who were dually enrolled were usually identified as economically disadvantaged and at risk. These findings were substantiated by prior evidence presented in the *District and School Profiles 2014–2015* report that the majority of students enrolled in the district qualified for free or reduced lunch (71.6 %) and were at risk (71.6%; Houston Independent School District Department [HISD], p. 17, 2016b). Additionally, these students also qualified for Head Start services; a federal program that primarily serves young children and their families who live below the poverty line. While dual-enrollment programs were also observed to have the highest percentages of Hispanic (also substantiated in the *District and School Profiles 2014–2015* report; HISD, 2016b at risk, and LEP students among other programs evaluated in this report, dual programs also were observed to have the lowest percent of Black students when compared to HISD and Head Start Standalone programs.

With respect to academic achievement, students who were dually enrolled achieved higher mean standard scores on both the Iowa and Logramos ELA and mathematics subtests than their peers who were enrolled in Head Start Standalone prekindergarten programs. Students who were dually enrolled were also noted to achieve mean standard scores on the Logramos ELA and mathematics subtests that were higher than their peers who had not attended any of the three prekindergarten programs.

Notable findings were also observed when mean standard score comparisons were made among students based on Head Start agency-affiliation. Students who were dually enrolled in AVANCE and NCI programs achieved higher mean standard scores on the Iowa ELA and mathematics subtests than those of their peers who were enrolled in corresponding Head Start Standalone programs. Students who were dually enrolled in AVANCE and HCDE programs achieved mean standard scores on the Logramos ELA and mathematics subtests that were higher than those of their standalone peers. Conversely, students who were dually enrolled in GCCSA achieved lower mean standard scores on the Iowa and Logramos ELA and mathematics subtests than those of their peers who attended the corresponding Head Start Standalone program.

Descriptive statistical analyses was also used to examine the presence and extent of achievement gaps within and across prekindergarten programs based on students' economic status. Results shown in Tables 5 and 6 indicate the achievement gaps on the Iowa ELA and mathematics subtests were smaller for kindergarten students who were previously enrolled any of the prekindergarten programs, in contrast to their peers who did not attend either Pre-K program. Economically-disadvantaged students who were dually enrolled consistently obtained lower mean standard scores than their non-economically-disadvantaged

peers on the Iowa and Logramos ELA and mathematics assessments (see Figures 5 and 6). Some gaps in academic achievement that were observed for the Logramos ELA and mathematics subtests were in favor of economically-disadvantaged students who enrolled in a Head Start Standalone program. However, due to sample sizes among Head Start Standalone students caution should be exercised regarding the interpretation of relationships among variables. Academic achievement comparisons among economically-disadvantaged students indicated that students who were dually enrolled achieved mean standard scores on both the Iowa and Logramos ELA and mathematics subtests that were higher than those of their economically-disadvantaged peers who were either enrolled in a Head Start Standalone program or enrolled in neither of the prekindergarten programs.

Examination of kindergarten students' academic achievement within the context of gender and prekindergarten program model revealed few achievement gaps among female and male students. Female students who attended either a Head Start Standalone program or had not attended either prekindergarten program achieved mean standard scores on the Logramos ELA and mathematics subtests that were higher than those of their male counterparts (see Appendix C Tables 4 and 5). Notable findings with respect to gender and Head Start agency-affiliation also revealed an achievement gap on the Logramos mathematics subtest in favor of female students who attended either a GCCSA or HCDE agency-affiliated programs (see Appendix D Table 5). Interestingly, both female and male students who attended neither prekindergarten program achieved lower mean standard scores on the Logramos ELA and mathematics subtests than those of their peers who attended one of the three prekindergarten programs (see Appendix C Tables 4 and 5).

Regarding race and ethnicity, findings revealed the achievement gaps on the Iowa ELA and mathematics subtests were the widest between Black and White students who were not enrolled in either prekindergarten program (Appendix C, Tables 2 and 3). Comparisons of mean standard scores among students based on Head Start agency-affiliation also revealed Black students typically achieved lower mean standard scores on the Iowa ELA and mathematics subtests than those of their Hispanic peers attending AVANCE, GCCSA and HCDE (Appendix D, Tables 2 and 3).

Other vulnerable populations, such as students with disabilities (SWD) consistently achieved lower mean standard scores than students without disabilities, regardless of prekindergarten program type or Head Start agency affiliation. However, dually-enrolled SWD achieved mean standard scores on the Logramos ELA and mathematics that were higher than those of their peers who enrolled in either HISD Pre-K or Head Start Standalone programs (Appendix C, Tables 2 and 3).

Primary Implications

The first implication from this report is that the Early Childhood Department and Head Start agency partners have made noteworthy efforts to prepare students who take the Logramos ELA and mathematics to be school ready. The majority of students who took the Logramos ELA and mathematics subtests were identified as Hispanic (95.9% of kindergarten population for each Logramos subject matter subtest; see Appendix C Tables 4 and 5). An explanation for this phenomenon may be due in part to (a) HISD recruitment efforts to provide this target student population with free, full-day prekindergarten programming, and (b) the structure and district's support of diverse linguistic programs. Students who are placed in the 'best fit' program that supports their English language and literacy development and provides responsive, individualized accommodations are more likely to succeed in school (NRC, 2007). As such, expansion of the Early Childhood Department and Head Start agency partners' efforts may include creating sustainable, high-quality programs to meet the needs of dually-enrolled populations who endemically have lower achievement outcomes (i.e., students who take the Iowa ELA and mathematics subtests; economically-disadvantaged students, young Black students; and students with disabilities). These efforts may include: (a) improving strategies that target Black children for enrollment and retention in prekindergarten to improve

their school readiness, and reduce the achievement gap; and (b) examining current pedagogical practices to determine whether they are culturally sensitive and responsive to individual student's needs and abilities, making improvements where needed.

Empirical evidence serves as the cornerstone for reform efforts in education. "[Education stakeholders] cannot expect reform efforts in education to have significant effects without research-based knowledge to guide them" (NRC, 2002, p.1). A second implication emerging from report findings is that the Early Childhood Department, Research & Accountability, and Head Start agency partners should collaborate to conduct an implementation fidelity study grounded in best practices in early education to determine to what degree the HISD-Head Start collaborative programs are being delivered as intended to improve school readiness and to close the achievement gap among young children subpopulations (NAEYC & NAECS/SDE, 2003). Evidence in this study indicated that not all dually-enrolled students benefited from the collaborative programs intervention (e.g., GCCSA students), suggesting these students may be more responsive to instructional practices provided at Head Start Standalone sites. As such, it is only by understanding and measuring whether an intervention has been implemented with fidelity can education stakeholders gain a better understanding of *how and why* an intervention may or may not work, and the extent to which children's school readiness can be improved (Carroll et al., 2007). Variables selected for examination in this study may include policies and practices related to the organization, curriculum, instructional priorities, and the vision for the HISD-Head Start Collaborative programs. Teacher quality is also an important variable that warrants thorough investigation, as "improvements in students' achievement are solidly linked to teacher excellence, the hallmarks of which are thorough knowledge of content, solid pedagogical skills, motivational abilities, career-long opportunities for continuing education" (NAS/NAE/IOM, 2007, p. 113), and understanding the process of students' learning itself (NRC, 2007). Examining district-, school-, and classroom-level variables associated with students' academic success is paramount in order to determine which variables have the strongest relationship for improving (or depreciating) prekindergarten students' learning experiences and school readiness outcomes both across the district and within the context of demographic subpopulations

As such, the implementation of fidelity study may also involve organizing a research team to collect information from school administrators and teachers to triangulate with student-level data to determine strengths and areas of improvement for the HISD-Head Start Collaborative programs. Design of the fidelity of implementation study should be informed by (a) best practices in early childhood literature, (b) the *Frog Street Pre-K (FSPK)* curriculum, (c) the standards detailed in *Developmentally Appropriate Practice in Early Childhood Programs, Revised Edition* and (d) the revised *Early Childhood Outcomes and Prekindergarten Guidelines*, 2015. Partners should strive to ensure the HISD-Head Start programs use equitable best practices in pedagogy that incorporate differential instruction to provide learning opportunities that are both meaningful and beneficial to all students. Execution of a fidelity of implementation study is a positive step towards ensuring that the elements of a high-quality early education–high-quality curriculum, effective assessment, and program evaluation–are truly integrated into the HISD-Head Start programs.

A fourth implication from this report is that the Early Childhood Department, Research & Accountability, Student Assessment, and Head Start agencies may consider working together to expand student measures they use to assess foundational learning experiences that are crucial to the school readiness of children. Head Start currently uses assessments that extend beyond language, literacy, and mathematics to include perceptual motor and physical development; scientific reasoning; approaches to learning; and social and emotional development (OHS, 2016). The Early Childhood Department is in the process of expanding efforts to assess students' progress and needs to include social and emotional development, supported by funds from the House Bill 4 High Quality Prekindergarten grant. All partners should collaborate by using best practices in early childhood education; validated, appropriate psychometric instruments; and

consulting early childhood teachers to determine how best to adequately assess the 'whole' child. Regarding students, primary emphasis should be placed on using assessments as a means to determine progress, successes, and needs of the individual child; thus moving away from the accountability objective to ensure s/he can successfully obtain essential developmental and educational goals (NAEYC & NAECS/SDE, 2003).

A fifth implication from this report is that while Head Starts provide a wide spectrum of services to low-income children, the agencies may need additional support to meet the education needs of their target population. These supports may include (a) use of facilities, (b) assistance in the development and implementation of strategic recruitment and retention plans for highly qualified early childhood teachers and certified professionals, and (c) professional development opportunities for teachers and administrators. The Early Childhood Department may have the capacity to support the Head Start agencies in some of these efforts.

A sixth implication from this report also recommends that the Head Start agency partners may consider sharing in-house program evaluations with the Early Childhood Department to improve understanding of associations between classroom variables and academic achievement among students matriculating into HISD classrooms from Head Start Standalone programs.

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Appendix A

Table 1. Program description for AVANCE-Houston, Inc. Head Start agency, 2014–2015		
	Description	
Service region	AVANCE-Houston, Inc. provides Early Head Start and Head Start services in Area II of Harris County. This area includes the northwest region bordered by Interstate 10 West, Highway 290, and West of Highway 59 North. The northwest Area II region extends as far north as Cypress, Tomball, and Spring, Texas.	
Average Annual Enrollment	AVANCE's total funded enrollment for Head Start is 1,913. Over 90 percent of families served by AVANCE's Head Start program fall below the federal poverty guidelines. Additionally, the families served are primarily Hispanic and African American.	
Total number of teachers (Head Start only)	Number of lead teachers	48
	Number of assistant teachers	30
	Number of collaborating teachers	29.5
Teacher's average education level (Head Start only)	Lead teachers	Bachelor's degree
	Assistant teachers	High School
	Collaborating teachers	Bachelor's degree
Total number of centers	AVANCE-Houston, Inc. operates 13 Head Start centers in Northwest Harris County, Texas. Nine of the thirteen Head Start centers are located within the Houston ISD boundaries. The operation models include stand-alone centers and 2 collaborative school based sites (Browning Elementary and Ketelsen Elementary).	
Service Eligibility	All children must reside within the Area II Head Start boundaries. Children who will be 3-years of age on or before September 1st and who meet income eligibility as set by the federal poverty guidelines may apply for Head Start. Children with disabilities identified by a local school district may be eligible for Head Start even if they turn three years old after September 1st. Families are pre-screened and then required to provide documented proof of eligibility.	

Source: AVANCE-Houston, Inc.; http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices

Table 1 cont'd. Program description for AVANCE-Houston, Inc. Head Start agency, 2014–2015	
	Description
Services Provided	AVANCE Houston, Inc. offers a variety of services to the community which includes Head Start/ Early Head Start, Parent and Child (Parenting), Healthy Marriage classes, Fatherhood classes, Adult Education (GED & ESL), and workforce training classes. Head Start is a national federal program that promotes school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social and other services to enrolled children and families. Early Head Start is also a national federal program designed to support pregnant women and the development of infant and toddlers.
Program benefit to kids/parents/community	AVANCE-Houston, Inc. is a non-profit organization that provides child and family education using a holistic approach. Families have the opportunity to engage in programs designed to promote school readiness and help them achieve and maintain self-sufficiency. All of the services provided by AVANCE are free of charge and open to its surrounding communities. Families who participate in AVANCE programs gain awareness about the importance of education and self-sufficiency. They participate in classes designed to support the entire family. The Head Start program is instrumental in supporting families because it offers comprehensive services; however, the primary focus of the program is school readiness. Students develop early reading and math skills, as well as social and physical development skills, that they need to be successful in school. Parents engage in their child's development and learning and make progress towards their own personal goals. Head Start recognizes that parent and guardians are the first and most important teachers of their children. Head Start actively encourages participation by family members in all aspects of the program from volunteering in the classrooms to serving as officers on the governing board. In addition, AVANCE further supports Head Start families by giving them priority in accessing its other services. AVANCE's Head Start program has established strong partnerships within the community with health organizations, school districts, libraries, businesses, colleges and universities, financial institutions, and other non-profit community organizations. Partners volunteer their time, services and resources.

Source: AVANCE-Houston, Inc.; http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices; http://www.avancehouston.org/locations

Table 1 cont'd. Program description for AVANCE-Houston, Inc. Head Start agency, 2014–2015	
	Description
Challenges	Over the past decade, the population in AVANCE's service area has grown rapidly, accounting for 75 percent of the overall growth of Harris County. This growth, though positive, has created a new class of suburban poor in Area II due to the influx of low-income minority groups who could not previously afford to live in this once rural, affluent area. Evidence suggests that people living in poverty are very likely to have lower levels of educational and employment attainment, have high stress levels, low access to health and dental care, lack quality housing, and limited transportation. Although various support systems have been created in AVANCE's service area to address the needs of the families, the accessibility to assistance continues to be limited for several reasons: resources are in short supply, waiting lists are too long, program applications are too complex and lengthy, ineligibility for services, and knowledge about available services is non-existent or limited. AVANCE's services are designed to support parents' attainment of education and employment. Forty seven (47%) of Head Start parents have less than high school education. At least 67percent of parents in Head Start are employed on a part or full-time basis. Many families voice the lack of quality childcare as an obstacle preventing regular employment. AVANCE's own Head Start program cannot meet the demand for services in Area II; therefore it consistently maintains an enrollment waitlist.
Funding Source	AVANCE-Houston, Inc. Head Start is federally funded. AVANCE's other programs are supported through a combination of federal and State funding, and private donations.
Curriculum	is a comprehensive, bilingual program that integrates instruction across developmental domains and early learning disciplines. The program focuses on both academic development as well as social-emotional development, using differentiated and varying approaches to instruction to meet the needs of all Head Start learners. AVANCE-Houston, Inc. also utilizes the Creative Curriculum Study Starters and Conscious Discipline programs as supplements.
Assessment	AVANCE utilizes the Teaching Strategies Gold Assessment System to measure its children's progress in mastering developmental skills and achieving school readiness goals. Parents and teachers communicate regularly about the status of children and their individualized goals. AVANCE's assessment process is aligned to the Head Start Child Development and Early Learning Framework, Texas State Pre-K Guidelines, and local school district's expectations for students transitioning into kindergarten.

Source: AVANCE-Houston, Inc.; http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices; http://www.avancehouston.org/locations

Table 2. Program description for Gulf Coast Community Services Association (GCCSA) Head Start agency, 2014–2015		
	Description	
	Gulf Coast Community Services Association (GCCSA), a private nonprofit organization, is the largest Community Action Agency in Texas since 1964. GCCSA promotes individual and communal well-being through outreach operations, economic empowerment initiatives and support services (GCCSA website, 2013).[1]	
Service region	GCCSA serves 30% of Harris County, particularly the Southeast region designated as Area IV. The agency operates a combination of Early Head Start and Head Start programs/services through 21 centers located in Houston, Pasadena and South Houston.	
Average Annual Enrollment	1864	
Total number of teachers	Number of lead teachers	95
	Number of assistant teachers	45
	Number of collaborating teachers	43
Teacher's average education level	Lead teachers	½ Bachelors; ½ Associates
	Assistant teachers	CDA
	Collaborating teachers	Bachelors
Total number of centers	21	
Service Eligibility	In addition to age and pregnancy status (children birth to 3 years and pregnant women are eligible for Early Head Start and children between the ages of 3-5 years are eligible for Head Start), both groups automatically qualify if the child or family receives public assistance (e.g. TANF, SSI); the participating child is in foster care; and/or if the child and their family is homeless. Families that do not meet these criteria are prioritized by a point system that captures income, age, and family characteristics (GCCSA, Head Start Selection Criteria, 2012).	

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices. Updates on numerical values were unavailable for the 2014–2015 school year.

Table 2 cont'd. Program description for Gulf Coast Community Services Association (GCCSA) Head Start agency, 2014–2015	
	Description
Services Provided	GCCSA Early Head Start (EHS) offers center-based and home-based services to pregnant women and infants and toddlers. Head Start (HS) offers a full day, center-based program five days a week, from August through May. Parents can enroll their children in extended day option or a part day option known as a double session. A double session is offered to parents who are not employed or attending school or job training with 4 hour sessions either am or pm. This option is offered at two Head Start center locations twice a day from August to June (GCCSA, Refunding, 2012).
Program benefit to kids/parents/community	Gulf Coast Community Services Association (GCCSA), a private nonprofit organization, is the largest Community Action Agency in Texas since 1964. GCCSA promotes individual and communal well-being through outreach operations, economic empowerment initiatives and support services (GCCSA website, 2013).[2] GCCSA initiatives include: • Early Head Start and Head Start • Adult Literacy and Education • Economic Development – Financial literacy, Individual Development Account program , Homebuyer Education Assistance, Employment Skills, Housing Services • Human Service Initiative- food pantry, Rental/mortgage assistance, utilities
Challenges	Education and/or Job Training: The service with the highest need was educational programs to help parents learn a trade or profession followed by helping parents with resume, interview skills, professional clothing. And lastly, helping parents finding and getting a good job. This information was strongly demonstrated through the 2013-2014 parent survey and community assessment update.
Funding Source	Administration For Children and Families / HHS
Curriculum	Frog Street Pre-K. Although GCCSA does not offer a bi-lingual or dual language program, the program does support ESL learners as they mature in their native language and develop their English speaking abilities.
Assessment	LAP-3 (Learning Accomplishment Profile – 3rd Revision)

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices. Updates on numerical values were unavailable for the 2014–2015 school year.

Table 3. Program Description of Harris County Department of Education (HCDE) Head Start, 2014–2015		
	Description	
Service region	HCDE Head Start centers are located throughout southwest Harris County. We serve the following zip codes: 77013 77059 77503 77015 77062 77505 77016 77075 77507 77020 77078 77520 77026 77089 77521 77028 77093 77530 77029 77336 77532 77034 77338 77536 77039 77339 77546 77044 77345 77547 77047 77346 77562 77048 77357 77571 77049 77365 77586 77050 77396 77598 77058 The boundaries of Area I are the Harris County line on the north south and east. On the west, the boundary is Highway 59 running south from the Harris County line to Buffalo Bayou to Beltway 8, then south and west on Beltway 8 to Almeda Road and south on Almeda Road to the Harris County line.	
Average Annual Enrollment	1,230	
Total number of teachers	Number of lead teachers	667
	Number of assistant teachers	8
	Number of collaborating teachers	14

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices. Updates on numerical values were unavailable for the 2014–2015 school year.

Table 3 cont'd. Program Description of Harris County Department of Education (HCDE) Head Start, 2014–2015		
	Description	
Teacher's average education level	Lead teachers	Bachelors
	Assistant teachers	High School
	Collaborating teachers	Bachelor's Certified
Total number of centers	16	
Service Eligibility	• Must be 3 years old by September 1 • Live in the HCDE Head Start service delivery area • Meet income guidelines	
Services Provided	Head Start is a national program that promotes school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social and other services to enrolled children and families.	
Program benefit to kids/parents/community	The Head Start Program is a program that provides comprehensive early childhood education, health, nutrition, and parent involvement services to low-income children and their families. The program's services and resources are designed to foster stable family relationships, enhance children's physical and emotional well-being, and establish an environment to develop strong cognitive skills.	
Challenges	The majority of our parents struggle with lack of employment opportunities. Nearly one-quarter of our parents in families served have less than a high school education. This contributes to the barriers of finding a job. Access to public transportation is also a challenge for many families are without vehicles. Families who are unable to obtain services without access to public transportation face an added burden. This is particularly a critical issue in unincorporated areas of our expansive Harris County where city public transportation is nonexistent.	
Funding Source	HCDE Head Start is federally funded.	
Curriculum	Frog Street Pre-K is a comprehensive, bilingual program that integrates instruction across developmental domains and early learning disciplines. Although the curriculum supports bilingual instructions, HCDE does not have dual language or bilingual classes. HCDE Head Start works to maximize the development and potential of dual language learners and their families by encouraging and supporting the student's first language, as it will assist and augment student's English development and knowledge. Teachers receive ESL and dual language professional development.	

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices. Updates on numerical values were unavailable for the 2014–2015 school year.

Table 3 cont'd. Program Description of Harris County Department of Education (HCDE) Head Start, 2014–2015	
	Description
Assessment	• Frog Street Pre-K Assessment • Observations • Portfolio Collection

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices. Updates on numerical values were unavailable for the 2014–2015 school year.

Table 4. Program Description of Neighborhood Centers, Inc. (NCI) Head Start, 2014–2015	
	Description
Service region	Neighborhood Centers Head Start/Early Head Start centers (NCI) are located throughout southwest Harris County. The Head Start and Early Head Start service area contains the neighborhoods bordered by Highway 290 to the Northwest (i.e. Cypress-Fairbanks), Interstate 10 to the West (i.e. Katy), and Highway 288 and the Harris County Line to the South and Southwest. It includes the cities of both Bellaire and Houston and covers 495 square miles of land area (U.S. Census Bureau, Density, 2000). The Head Start/Early Head Start service areas contains the following zip codes: 77002 77053 77085 77005 77054 77094 77006 77055 77095 77019 77056 77096 77024 77057 77098 77025 77063 77099 77027 77071 77401 77030 77072 77433 77031 77074 77449 77035 77077 77450 77036 77079 77492 77041 77080 77493 77042 77081 77494 77043 77082 77007 77045 77083 77004 77046 77084
Average Annual Enrollment	Over 90 percent of families served by Neighborhood Centers Head Start/Early Head Start fall below the federal poverty guidelines. Additionally, the families we serve are largely of minority ethnicity. Primarily our minority population is African-American and Hispanic. Annually, our program serves 878 children.

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices.

Table 4 cont'd. Program Description of Neighborhood Centers, Inc. (NCI) Head Start, 2014–2015		
	Description	
Total number of teachers	Number of lead teachers	50 (HISD)
	Number of assistant teachers	N/A
	Number of collaborating teachers	50 (Head Start)
Teacher's average education level	Lead teachers	Bachelor & Highly Qualified Certified
	Assistant teachers	N/A
	Collaborating teachers	Bachelor
Total number of centers	50	
Service Eligibility	All children must reside within the Neighborhood Center Head Start/Early Head Start boundaries, as described above. For Head Start, children who will be 3-years of age on or before September 1st and who meet income eligibility guidelines as set by the Federal Government may apply for Head Start. Children with disabilities, identified by a local school district, may be eligible for Head Start even if they turn three years old after September 1st. Families are required to provide supporting documentation of eligibility when they apply for the program.	
Services Provided	Head Start/Early Head Start is a national program that promotes school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social and other services to enrolled children and families. In addition, Neighborhood Centers Head Start offers Head Start Intensive Summer Transition and ELA Readiness (HISTARR). This is an intensive four-week summer program that is designed to provide students with additional, intensive academic support to strengthen literacy and mathematical skills necessary for kindergarten readiness.	

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices.

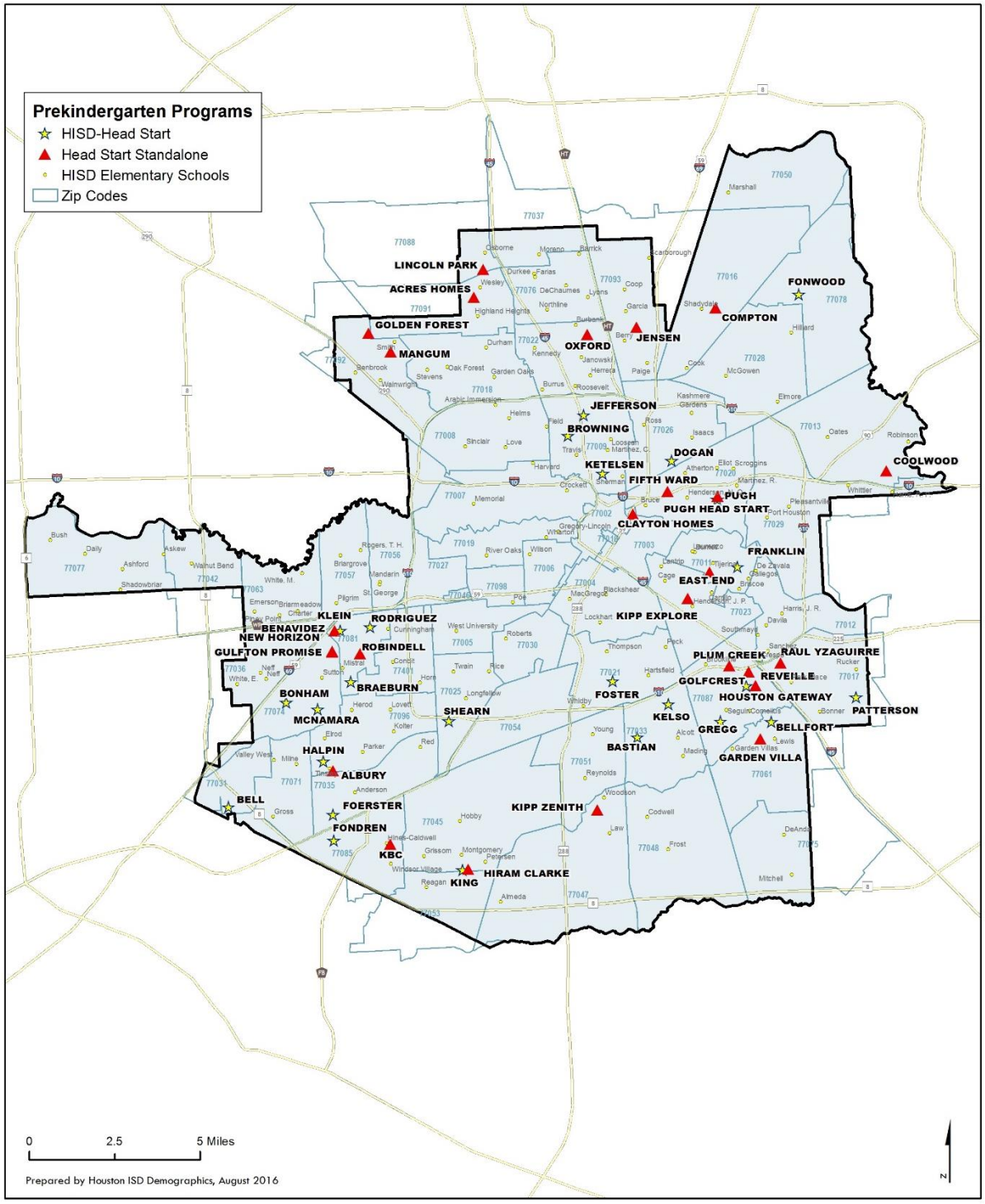
Table 4 cont'd. Program Description of Neighborhood Centers, Inc. (NCI) Head Start, 2014–2015	
	Description
Program benefit to kids/parents/community	Neighborhood Centers Head Start/Early Head Start is a school readiness program. Students develop early ELA and math skills, as well as social skills, that they need to be successful in school. Parents engage in their child's development and learning and make progress towards their own better men. Early Head Start/Head Start recognizes that parent and guardians are the first and most important teachers of their children. Early Head Start/Head Start actively encourages participation by family members in all aspects of the program from volunteering in the classrooms to serving as officers on the governing board. In addition, Early Head Start/Head Start provides many direct services for families. Community supports and nurtures Early Head Start/Head Start in many ways. Partners are libraries, businesses, colleges, fire stations, community agencies and organizations. Partners volunteer their time, services and resources.
Challenges	The majority of our parents struggle with lack of employment opportunities. The families we serve often discuss immigration status or a lack of education which creates barriers to getting a good job. Access to affordable healthcare is an issue for many of our families in southwest Harris County. Over the past several years, Neighborhood Centers has experienced a rise in the number of immigrant and refugee families seeking services. Only 33% of Neighborhood Centers' Head Start families reported English as their primary language, while more than 61% reported Spanish. Acquiring English language skills, while maintaining home language and culture, poses a special challenge for many of the area's families. To address this need, our Family Service Workers work closely with each family to better identify services that will assist them in reaching their goals.
Funding Source	Neighborhood Centers Head Start/Early Head Start is federally funded. State funds are leveraged to staff highly-qualified, certified teachers in all stand-alone centers.

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices.

Table 4 cont'd. Program Description of Neighborhood Centers, Inc. (NCI) Head Start, 2014–2015	
	Description
Curriculum	Frog Street Pre-K is a comprehensive, bilingual program that integrates instruction across developmental domains and early learning disciplines. The program focuses on both academic development as well as social-emotional development, using differentiated and varying approaches to instruction to meet the needs of all Head Start learners. There are nine themes totaling 180 days of instruction and family engagement to support the whole learner. Each lesson provides English and Spanish instruction for ease of teaching in bilingual classrooms. The curriculum was developed by well-known researchers and publishers across the education field, basically a "dream team of early childhood professionals."
Assessment	Neighborhood Centers Head Start/Early Head Start works with parents, teachers and district partners to establish an ongoing assessment process. The process is aligned to the Head Start Child Development and Early Learning Framework, state early learning guidelines and local school district's expectations for students transitioning into kindergarten. Student's progress is measured based on curriculum expectations, typical development and school readiness goals. NCI utilizes the Teaching Strategies Gold Assessment System to measure its children's progress in mastering developmental skills and achieving school readiness goals. To assure quality at Neighborhood Centers Head Start/Early Head Start, all programmatic and management areas are regularly reviewed through ongoing monitoring measures. These measures include targeted site visits, report reviews, and an annual self-assessment. The annual self- assessment, modeled after the federal review, allows for continuous improvement. It is an important part of our ongoing monitoring plan for the program. The tool used for our self-assessment and federal review includes over 250 compliance questions in eleven sections of compliance include the following: health services; nutrition services; safe environments; disabilities services; mental health services; family and community partnerships; education and early childhood development; fiscal management; program design and management; and eligibility, recruitment, selection, enrollment, and attendance. Teams are created and over a period of a week, the team review, observe, and analyze data to assess compliance with all regulations and requirements. After the self-assessment an action plan is created to address areas of weakness or findings. The plan is shared with the Policy Council, the Board of Directors, Early Head Start and Head Start staff.

Source: *Adapted from Prekindergarten Education Program: Academic performance comparison of Head Start programs*, *2014–2015* (HISD, 2015b); http://eclkc.ohs.acf.hhs.gov/hslc/HeadStartOffices.

Appendix B



Source: HISD Demographic Department. HISD-Head Start (dual) and Head Start Standalone sites for the 2014–2015 school year.

Appendix C

Table 1. Demographic characteristics of HISD Kindergarten students by prekindergarten program status the previous year, 2015–2016

		HISD Pre-K		Dually-enrolled		Head Start Standalone		Non-HISD or Head Start	
Demographic characteristics		**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Overall sample		8,768	56.5	1,390	9.0	220	1.4	5131	33.1
Gender	Female	4,332	49.4	718	51.6	103	46.8	2,503	48.8
	Male	4,432	50.6	672	48.3	117	53.2	2,623	51.2
Race and ethnicity	Black	1,901	22.8	269	20.0	67	32.2	1,080	25.2
	Hispanic	6,171	74.0	1,065	79.3	140	67.3	2,295	53.6
	White	264	3.2	9	0.7	1	0.5	907	21.2
Economically disadvantaged	No	1,555	17.7	187	13.4	30	13.6	2,554	49.8
	Yes	7,213	82.3	1,203	86.5	190	86.4	2,577	50.2
Students with a disability (SWD)	No	8,508	97.0	1,353	97.3	205	93.2	5,056	98.5
	Yes	260	3.0	37	2.7	15	6.8	75	1.5
Limited English proficient (LEP)	No	4,140	47.2	533	38.3	104	47.3	3,879	75.6
	Yes	4,628	52.8	857	61.7	116	52.7	1,252	24.4
At risk	No	4,165	47.5	533	38.3	104	47.3	4,828	94.1
	Yes	4,603	52.5	857	61.7	116	52.3	303	5.9

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD Student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Table 2. Mean standard ELA scores on the kindergarten Iowa Assessments by prekindergarten program enrollment status, 2015–2016

		HISD Pre-K			Dually-enrolled			Head Start Standalone			Non-HISD or Head Start		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall sample		4,760	130.2	9.0	562	129.3	8.4	112	128.7	6.8	3,699	131.9	10.5
Gender	Female	2,364	131.1	9.1	281	129.9	8.0	57	128.6	7.8	1,822	132.7	10.3
	Male	2,394	129.3	8.9	281	128.6	8.7	55	128.9	5.7	1,874	131.2	10.6
Race and ethnicity	Black	1,762	130.1	9.2	247	129.1	8.7	56	129.5	7.7	984	129.4	9.5
	Hispanic	2,461	129.6	8.5	269	129.1	8.1	48	128.0	6.0	1,170	129.4	9.3
	White	234	134.9	11.0	8	128.3	7.0	1	*	*	861	138.0	10.2
Economically disadvantaged	No	1,050	132.6	9.9	90	131.2	8.3	13	129.1	7.6	2,112	134.7	10.9
	Yes	3,710	129.5	8.6	472	128.9	8.4	99	128.7	6.7	1,587	128.2	8.6
Students with a disability (SWD)	No	4,601	130.4	9.0	547	129.4	8.4	107	129.0	6.8	3,639	132.0	10.5
	Yes	159	124.9	9.3	15	124.1	8.0	5	123.4	5.6	60	126.9	8.5
Limited English proficient (LEP)	No	3,898	130.6	9.0	489	129.4	8.4	89	128.8	7.1	3,351	132.4	10.4
	Yes	862	128.3	8.9	73	128.1	8.4	23	128.5	5.6	348	126.6	9.5
At risk	No	3,856	130.6	9.0	482	129.5	8.4	88	128.8	7.1	3,574	132.1	10.5
	Yes	904	128.5	8.9	80	128.1	8.5	24	128.4	5.5	125	127.0	8.3

Source: Iowa Assessments and Logramos 3 2015–2016 student databases; Head Start Student List, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested.

Table 3. Mean standard mathematics scores on the kindergarten Iowa Assessments by prekindergarten enrollment program status, 2015–2016

		HISD Pre-K			Dually-enrolled			Head Start Standalone			Non-HISD or Head Start		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall sample		4,914	130.9	9.5	589	130.0	8.9	124	129.0	7.7	3,895	131.4	10.3
Gender	Female	2,435	131.6	9.3	297	130.2	8.6	63	128.1	7.8	1,891	132.1	10.1
	Male	2,476	130.3	9.5	292	129.8	9.2	61	130.0	7.5	2,001	130.8	10.5
Race and ethnicity	Black	1,857	130.0	9.5	262	129.2	9.7	65	128.8	8.6	1,048	128.6	9.5
	Hispanic	2,493	131.0	9.2	279	130.3	8.0	49	129.6	7.0	1,227	129.7	9.5
	White	246	134.8	10.0	8	133.3	7.9	1	*	*	891	136.9	9.5
Economically disadvantaged	No	1,085	133.2	10.0	92	131.8	9.6	15	128.8	6.5	2,212	133.9	10.3
	Yes	3,829	130.3	9.2	497	129.7	8.8	109	129.0	7.9	1,683	128.1	9.3
Students with a disability (SWD)	No	4,752	131.1	9.4	572	130.2	8.8	119	129.1	7.7	3,830	131.5	10.3
	Yes	162	126.2	9.4	17	121.5	9.7	5	125.8	7.9	65	127.8	8.8
Limited English proficient (LEP)	No	4,023	130.8	9.1	514	129.7	8.8	101	128.1	7.5	3,520	131.7	10.2
	Yes	891	131.5	10.9	75	132.3	9.6	23	132.9	7.5	375	128.7	11.1
At risk	No	3,978	130.8	9.1	507	129.7	8.8	99	128.3	7.4	3,764	131.5	10.3
	Yes	936	131.5	10.7	82	131.8	9.8	25	131.8	8.2	131	129.1	9.3

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested.

Table 4. Mean standard ELA scores on the kindergarten Logramos 3 by prekindergarten program enrollment status, 2015–2016

		HISD Pre-K			Dually-enrolled			Head Start Standalone			Non-HISD or Head Start		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall sample		3,695	172.6	14.5	764	172.0	14.2	93	169.2	13.9	1,080	167.1	13.1
Gender	Female	1,816	173.5	14.1	405	172.7	14.0	39	171.3	13.3	554	167.9	12.9
	Male	1,878	171.6	14.8	359	171.3	14.4	54	167.7	14.2	525	166.2	13.2
Race and ethnicity	Black	3	*	*	0	–	–	0	–	–	0	–	–
	Hispanic	3,570	172.6	14.5	756	172.0	14.1	90	169.3	14.0	987	167.4	13.1
	White	15	173.9	18.1	1	*	*	0	–	–	5	161.6	15.0
Economically disadvantaged	No	444	170.8	13.7	93	173.1	13.3	14	162.4	11.6	285	167.2	13.3
	Yes	3,251	172.8	14.6	671	171.8	14.3	79	170.4	14.0	795	167.1	13.0
Students with a disability (SWD)	No	3,606	172.8	14.4	745	172.2	14.1	84	170.3	13.7	1,074	167.1	13.1
	Yes	89	163.0	15.4	19	165.0	14.7	9	159.0	11.2	6	161.3	12.3
Limited English proficient (LEP)	No	55	169.2	16.8	7	163.1	7.4	1	*	*	268	168.8	14.1
	Yes	3,640	172.6	14.4	757	172.1	14.2	92	169.4	13.8	812	166.5	12.7
At risk	No	122	170.8	15.2	14	172.6	16.3	3	*	*	924	166.8	13.2
	Yes	3,573	172.6	14.5	750	172.0	14.1	90	169.3	14.0	156	169.0	12.4

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 student databases.

Note. * indicates fewer than five students tested.
– indicates no data available.

Table 5. Mean standard mathematics scores on the kindergarten Logramos 3 by prekindergarten program enrollment status, 2015–2016

		HISD Pre-K			Dually-enrolled			Head Start Standalone			Non-HISD or Head Start		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall Sample		3,754	164.3	13.1	780	163.3	14.2	93	162.1	12.0	1,121	158.5	13.4
Gender	Female	1,850	164.8	13.0	414	163.7	14.8	39	163.5	11.8	565	159.5	13.1
	Male	1,903	163.8	13.2	366	162.8	13.4	54	161.2	12.1	555	157.5	13.6
Race and ethnicity	Black	3	*	*	0	–	–	0	–	–	0	–	–
	Hispanic	3,631	164.3	13.1	772	163.2	14.2	90	162.2	12.1	1,021	158.8	13.6
	White	15	166.1	14.0	1	*	*	0	–	–	5	159.6	12.8
Economically disadvantaged	No	456	163.5	12.3	92	165.6	14.9	14	157.9	14.0	300	157.9	13.2
	Yes	3,298	164.4	13.2	688	163.0	14.1	79	162.9	11.5	821	158.7	13.5
Students with a disability (SWD)	No	3,663	164.5	13.0	760	163.4	14.2	84	162.9	12.1	1,115	158.5	13.4
	Yes	91	157.0	14.5	20	159.2	14.7	9	155.1	8.1	6	159.2	6.3
Limited English proficient (LEP)	No	54	160.9	14.5	8	155.6	12.2	1	*	*	812	159.7	14.0
	Yes	3,700	164.3	13.1	772	163.4	14.2	92	162.2	12.0	844	158.1	13.2
At risk	No	121	162.2	14.7	15	163.1	11.9	3	*	*	956	158.2	13.3
	Yes	3,633	164.3	13.0	765	163.3	14.2	90	162.2	12.1	165	160.4	13.9

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start Student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested.
– indicates no data available.

Appendix D

Table 1. Demographic characteristics of HISD Kindergarten students by Head Start Agency affiliation the previous year, 2015–2016

		AVANCE		GCCSA		HCDE		NCI	
Demographic Characteristics		**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Overall Sample		252	15.6	512	31.8	220	13.7	626	38.9
Gender	Female	126	50.0	263	51.4	111	50.4	321	51.3
	Male	126	50.0	249	48.6	109	49.5	305	48.7
Race and ethnicity	Black	27	11.1	140	28.2	69	32.8	100	16.7
	Hispanic	214	87.7	357	71.8	139	66.2	495	82.5
	White	3	1.2	0	0.0	2	1.0	5	0.8
Economically disadvantaged	No	35	13.9	80	15.6	31	14.1	71	11.3
	Yes	217	86.1	432	84.4	189	85.9	555	88.7
Students with a disability (SWD)	No	243	96.4	491	95.9	214	97.3	610	97.4
	Yes	9	3.6	21	4.1	6	2.7	16	2.6
Limited English proficient (LEP)	No	128	50.8	270	45.1	107	48.6	172	27.5
	Yes	124	49.2	282	54.9	113	51.4	454	72.5
At risk	No	129	51.2	230	44.9	105	47.7	173	27.6
	Yes	123	48.8	282	55.1	115	52.3	453	72.4

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases..

Note. * indicates fewer than five students tested.

Table 2. Mean standard ELA scores on the kindergarten Iowa Assessments by Head Start Agency affiliation, 2015–2016

		AVANCE			GCCSA			HCDE			NCI		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall Sample		138	128.7	7.1	238	129.1	8.2	91	128.2	7.9	207	130.0	8.8
Gender	Female	70	128.9	7.0	121	129.9	8.6	45	129.2	7.3	102	130.2	8.3
	Male	68	128.4	7.3	117	128.2	7.7	46	127.3	8.5	105	129.9	9.3
Race and ethnicity	Black	24	127.7	7.2	133	128.7	8.4	53	127.3	8.1	93	131.4	8.9
	Hispanic	106	128.9	7.3	92	129.4	7.9	30	129.6	7.9	89	128.3	8.4
	White	3	*	*	0	–	–	2	*	*	4	*	*
Economically disadvantaged	No	18	131.2	7.1	39	130.2	7.8	8	126.6	7.0	38	132.4	9.2
	Yes	120	128.3	7.1	199	128.8	8.3	83	128.4	8.0	169	129.5	8.6
Special Education	No	131	129.1	6.9	231	129.1	8.3	90	128.4	7.8	202	130.1	8.8
	Yes	7	120.6	5.5	7	127.9	6.3	1	*	*	5	125.8	7.7
Limited English proficient (LEP)	No	118	128.9	7.3	219	129.1	8.3	83	128.0	7.8	158	130.8	8.8
	Yes	20	127.6	6.0	19	129.2	7.9	8	130.6	8.9	49	127.7	8.3
At risk	No	117	128.9	7.3	218	129.0	8.2	80	128.2	7.9	155	130.8	8.8
	Yes	21	127.7	5.9	20	129.8	8.1	11	128.6	8.4	52	127.7	8.5

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested

Table 3. Mean standard mathematics scores on the kindergarten Iowa Assessments by Head Start Agency affiliation, 2015–2016

		AVANCE			GCCSA			HCDE			NCI		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall Sample		145	129.2	7.3	240	129.8	8.5	108	127.3	8.6	220	131.4	9.5
Gender	Female	74	129.4	7.6	121	130.2	7.8	53	127.3	9.0	112	130.8	9.4
	Male	71	129.0	7.0	119	129.5	9.2	55	127.2	8.4	108	132.1	9.7
Race and ethnicity	Black	27	127.2	6.8	135	128.8	9.0	66	126.3	9.0	99	131.9	10.4
	Hispanic	110	129.5	7.5	92	131.2	7.5	31	128.4	7.9	95	130.7	8.5
	White	3	*	*	0	–	–	2	*	*	4	*	*
Economically disadvantaged	No	18	132.4	6.2	39	130.2	8.4	12	127.3	6.9	38	133.4	11.5
	Yes	127	128.8	7.4	201	129.8	8.6	96	127.3	8.9	182	131.0	9.1
Special Education	No	138	129.7	7.0	232	130.0	8.4	107	127.4	8.6	214	131.7	9.4
	Yes	7	120.4	8.0	8	124.8	11.1	1	*	*	6	122.7	9.9
Limited English proficient (LEP)	No	125	129.1	7.5	221	129.6	8.5	100	126.7	8.4	169	131.0	9.2
	Yes	20	130.0	6.1	19	132.5	8.3	8	134.9	8.2	51	132.9	10.5
At risk	No	124	129.1	7.5	220	129.6	8.5	96	127.1	8.3	166	131.0	9.2
	Yes	21	130.1	6.0	20	132.7	8.1	12	128.8	11.3	54	132.8	10.5

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested

Table 4. Mean standard ELA scores on the kindergarten Logramos 3 by Head Start Agency affiliation, 2015–2016

		AVANCE			GCCSA			HCDE			NCI		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall Sample		107	169.5	14.1	258	171.2	13.2	102	169.5	13.5	390	173.2	14.8
Gender	Female	52	168.1	13.1	135	172.7	13.2	53	170.4	11.9	204	174.1	14.7
	Male	55	170.8	14.9	123	169.5	12.9	49	168.4	15.1	186	172.3	14.9
Race and ethnicity	Black	0	–	–	0	–	–	0	–	–	0	–	–
	Hispanic	104	169.5	14.2	256	171.3	13.2	101	169.5	13.6	385	173.1	14.7
	White	0	–	–	0	–	–	0	–	–	1	*	*
Economically disadvantaged	No	17	164.5	11.7	39	175.3	11.2	18	170.6	15.6	33	171.8	14.6
	Yes	90	170.4	14.3	219	170.4	13.4	84	169.2	13.1	357	173.4	14.8
Special Education	No	105	169.9	13.9	245	171.7	13.1	98	169.9	13.6	381	173.3	14.7
	Yes	2	*	*	13	161.5	10.2	4	*	*	9	169.7	18.8
Limited English proficient (LEP)	No	3	*	*	3	*	*	2	*	*	0	–	–
	Yes	104	169.6	14.2	255	171.3	13.2	100	169.7	13.5	390	173.2	14.8
At risk	No	5	170.2	9.9	4	*	*	4	*	*	4	*	*
	Yes	102	169.4	14.3	254	171.3	13.2	98	169.8	13.7	386	173.1	14.7

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested

– indicates no data available

Table 5. Mean standard mathematics scores on the kindergarten Logramos 3 by Head Start Agency affiliation, 2015–2016

		AVANCE			GCCSA			HCDE			NCI		
Demographic characteristics		**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**	**n**	**Mean**	**SD**
Overall Sample		107	162.7	12.8	261	163.3	14.8	105	162.2	13.5	400	163.4	13.8
Gender	Female	52	161.8	12.3	138	164.6	16.1	56	163.1	14.8	207	163.7	14.0
	Male	55	163.6	13.3	123	161.9	13.2	49	161.0	11.9	193	163.1	13.7
	Black	0	–	–	0	–	–	0	–	–	0	–	–
	Hispanic	104	162.7	12.9	259	163.4	14.9	104	162.2	13.6	395	163.3	13.9
	White	0	–	–	0	–	–	0	–	–	1	*	*
Economically disadvantaged	No	17	158.4	11.9	38	169.8	14.6	18	163.2	11.6	33	162.4	16.9
	Yes	90	163.5	12.9	223	162.2	14.6	87	161.9	13.9	367	163.5	13.6
Special Education	No	105	163.0	12.8	248	163.6	15.0	101	159.8	8.5	390	163.5	13.8
	Yes	2	*	*	13	157.9	11.7	4	*	*	10	160.1	16.8
Limited English proficient (LEP)	No	3	*	*	3	*	*	3	*	*	0	–	–
	Yes	104	162.7	12.9	258	163.6	14.8	102	162.3	13.7	400	163.4	13.8
At risk	No	5	164.8	9.1	4	*	*	5	158.2	2.9	4	*	*
	Yes	102	162.6	13.0	257	163.5	14.8	100	162.4	13.8	396	163.3	13.9

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases. Demographic characteristics were retrieved from Iowa and Logramos 2015–2016 HISD student databases.

Note. * indicates fewer than five students tested

Appendix E

Table 1. Mean standard ELA scores on the kindergarten Iowa Assessments by Head Start site and Zip Code, 2015–2016

Head Start Agency	Head Start Site	Zip Codes	n	Mean	SD
AVANCE	Acres Homes	77091	5	125.4	5.9
	Browning	77009	31	129.5	5.8
	Golden Forest	77092	6	127.7	4.4
	Jefferson	77009	27	131.0	9.2
	Jensen	77093	17	126.6	7.3
	Ketelsen	77009	25	129.4	7.6
	Lincoln Park	77092	6	121.0	4.3
	Mangum	77092	15	127.5	5.2
	Oxford	77022	6	131.3	4.0
GCCSA	Bastian	77033	45	130.1	8.9
	Bellfort ECC	77033	37	132.5	9.3
	Clayton Homes	77003	7	131.0	8.6
	East End	77011	3	*	*
	Foster	77021	34	126.3	6.9
	Franklin	77011	21	127.1	6.5
	Garden Villa	77061	6	125.8	7.6
	Golfcrest	77087	14	125.3	6.9
	Gregg	77087	20	128.7	5.9
	Kelso	77033	21	128.0	9.3
	Patterson	77087	21	130.5	9.0
	Reveille	77087	9	131.0	6.5
HCDE	Compton	77016	13	130.5	9.6
	Coolwood	77013	4	*	*
	Dogan	77026	27	124.8	7.7
	Fifth Ward	77020	14	132.9	3.6
	Fonwood	77016	15	124.7	7.3
	Pugh	77020	18	130.4	7.6
NCI	Bell	77031	10	133.7	9.4
	Benavidez	77081	9	125.8	10.5
	Bonham	77074	17	130.6	8.8
	Braeburn	77081	26	126.6	6.4
	Foerster	77035	37	132.2	9.1
	Fondren	77085	20	127.6	6.7
	Haplin	77096	25	134.4	10.0
	KBC	77045	1	*	–
	McNamara	77074	22	127.0	6.2
	MLK ECC	77045	15	128.3	10.3
	Rodriguez	77081	16	133.2	7.8
	Shearn	77025	9	128.6	8.6

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Note. * indicates fewer than five students tested

– indicates no data available

Table 2. Mean standard mathematics scores on the kindergarten Iowa Assessments by Head Start site and Zip Code, 2015–2016

Head Start Agency	Head Start Site	Zip Codes	n	Mean	SD
AVANCE	Acres Homes	77091	6	126.2	3.3
	Browning	77009	33	128.7	6.8
	Golden Forest	77092	6	126.2	4.0
	Jefferson	77009	27	131.5	9.8
	Jensen	77093	17	128.1	6.6
	Ketelsen	77009	26	131.3	7.2
	Lincoln Park	77092	7	120.9	4.7
	Mangum	77092	16	129.1	3.6
	Oxford	77022	7	132.0	7.0
GCCSA	Bastian	77033	49	128.8	10.0
	Bellfort ECC	77033	37	133.5	9.5
	Clayton Homes	77003	7	131.9	6.5
	East End	77011	3	*	*
	Foster	77021	34	127.2	7.3
	Franklin	77011	21	127.0	5.3
	Garden Villa	77061	6	130.0	13.8
	Golfcrest	77087	14	130.3	6.4
	Gregg	77087	19	129.2	4.8
	Kelso	77033	20	129.5	9.7
	Patterson	77087	21	130.5	7.5
	Reveille	77087	9	135.0	7.4
HCDE	Compton	77016	18	128.6	10.7
	Coolwood	77013	5	124.2	5.3
	Dogan	77026	32	123.5	8.6
	Fifth Ward	77020	15	131.2	7.3
	Fonwood	77016	20	127.8	8.7
	Pugh	77020	18	129.6	5.9
NCI	Bell	77031	10	129.4	7.6
	Benavidez	77081	13	128.5	9.1
	Bonham	77074	21	128.8	7.6
	Braeburn	77081	26	130.8	6.4
	Foerster	77035	38	137.1	12.7
	Fondren	77085	21	127.9	8.3
	Haplin	77096	26	134.8	9.9
	KBC	77045	2	*	*
	McNamara	77074	22	128.2	9.7
	MLK ECC	77045	16	129.8	7.2
	Rodriguez	77081	16	131.6	7.4
	Shearn	77025	9	131.8	7.5

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Note. * indicates fewer than five students tested

– indicates no data available

Table 3. Mean standard ELA scores on the kindergarten Logramos 3 by Head Start site and Zip Code, 2015–2016

Head Start Agency	Head Start Site	Zip Codes	n	Mean	SD
AVANCE	Browning	77009	31	167.0	15.2
	Golden Forest	77092	1	*	–
	Jefferson	77009	14	173.9	16.1
	Jensen	77093	26	170.0	13.5
	Ketelsen	77009	17	173.4	13.1
	Lincoln Park	77092	3	*	*
	Mangum	77092	14	169.6	11.1
	Oxford	77022	1	*	–
GCCSA	Bastian	77033	14	164.1	10.3
	Bellfort ECC	77033	76	178.2	14.0
	Clayton Homes	77003	1	*	–
	East End	77011	6	173.8	9.9
	Franklin	77011	31	166.8	9.6
	Garden Villa	77061	9	180.3	16.5
	Golfcrest	77087	29	168.7	11.9
	Gregg	77087	27	164.9	8.5
	Kelso	77033	21	171.0	11.9
	KIPP Explore	77023	1	*	–
	Patterson	77087	28	164.5	10.0
	Raul Yzaguirre	77017	1	*	–
	Reveille	77087	14	172.6	15.5
HCDE	Compton	77016	1	*	–
	Coolwood	77013	11	157.6	9.9
	Dogan	77026	35	164.4	10.9
	Fifth Ward	77020	4	*	*
	Fonwood	77016	29	177.5	13.6
	Pugh	77020	22	174.1	11.6
NCI	Bell	77031	34	178.2	12.9
	Benavidez	77081	72	170.9	15.5
	Bonham	77074	28	175.3	15.6
	Braeburn	77081	38	168.3	13.8
	Foerster	77035	14	171.8	17.2
	Fondren	77085	18	166.7	10.8
	Haplin	77096	52	176.5	14.8
	McNamara	77074	40	166.9	8.5
	MLK ECC	77045	22	175.3	9.9
	Rodriguez	77081	45	186.0	15.3
	Shearn	77025	27	163.1	7.4

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Note. * indicates fewer than five students tested

– indicates no data available

Table 4. Mean standard mathematics scores on the kindergarten Logramos 3 by Head Start site and Zip Code, 2015–2016

Head Start Agency	Head Start Site	Zip Codes	n	Mean	SD
AVANCE	Browning	77009	31	160.4	13.1
	Golden Forest	77092	1	*	–
	Jefferson	77009	14	163.6	14.4
	Jensen	77093	26	163.5	12.8
	Ketelsen	77009	17	169.1	10.8
	Lincoln Park	77092	3	144.0	10.5
	Mangum	77092	14	162.2	9.7
	Oxford	77022	1	*	–
GCCSA	Bastian	77033	14	151.9	10.4
	Bellfort ECC	77033	76	174.2	17.5
	Clayton Homes	77003	1	*	–
	East End	77011	6	164.5	5.0
	Franklin	77011	31	156.1	8.9
	Garden Villa	77061	9	170.0	14.2
	Golfcrest	77087	30	159.3	10.7
	Gregg	77087	27	155.8	10.2
	Kelso	77033	21	156.5	11.2
	KIPP Explore	77023	1	*	–
	Patterson	77087	30	160.9	8.2
	Raul Yzaguirre	77017	1	*	–
	Reveille	77087	14	164.7	12.9
HCDE	Compton	77016	1	*	–
	Coolwood	77013	11	156.0	7.8
	Dogan	77026	38	158.1	14.7
	Fifth Ward	77020	4	*	7.6
	Fonwood	77016	29	165.7	10.9
	Pugh	77020	22	169.6	13.3
NCI	Bell	77031	34	164.5	14.6
	Benavidez	77081	79	161.3	13.7
	Bonham	77074	29	162.4	13.2
	Braeburn	77081	38	158.6	14.4
	Foerster	77035	15	161.5	12.5
	Fondren	77085	18	158.6	8.8
	Haplin	77096	52	168.8	14.0
	McNamara	77074	40	160.1	10.5
	MLK ECC	77045	22	164.7	11.2
	Rodriguez	77081	46	174.5	14.4
	Shearn	77025	27	154.8	6.5

Source: Iowa Assessments and Logramos 3 2015–2016 HISD student databases; Head Start student lists, 2014–2015; PEIMS 2014–2016 HISD student databases.

Note. * indicates fewer than five students tested
– indicates no data available