

MEMORANDUM

August 20, 2018

TO: Lance Menster
Officer, Elementary Curriculum and Development

FROM: Carla Stevens
Assistant Superintendent, Research and Accountability

SUBJECT: **PREKINDERGARTEN EDUCATION PROGRAM: ACADEMIC PERFORMANCE
COMPARISON OF HEAD START PROGRAMS, 2017–2018**

Houston Independent School District (HISD) collaborates with four federally-funded Head Start agencies: AVANCE Houston, Inc. (AVANCE); Gulf Coast Community Services Association (GCCSA); Harris County Department of Education (HCDE); and Baker Ripley (formerly Neighborhood Centers, Inc. (NCI)). The Head Start students can be categorized into two categories based on their enrollment status in Head Start programs, which are dually enrolled or standalone. Dually-enrolled children are those who dually enrolled in Head Start and HISD classrooms located on an HISD campus. Standalone children are those who enrolled in one of the Head Start centers that is operated solely by one of the agencies (AVANCE, Baker Ripley, GCCSA, and HCDE) with no HISD affiliation or partnership in place for classroom instruction. The goal of the program is to develop the cognitive and social-emotional skills of children from low-income families to prepare them to succeed in kindergarten and beyond.

The attached report examines the impact of the Head Start programs on students' academic performance on the 2017–2018 kindergarten Iowa English Language Arts (ELA), and Logramos Language Arts (LA) assessments.

Key findings include:

- Students who were dually-enrolled obtained comparable mean standard scores as students who were enrolled in standalone programs on both 2017–2018 Iowa ELA and mathematics subtests.
- On both 2017–2018 Logramos LA and mathematics subtests, students who were dually-enrolled scored higher than students enrolled in standalone programs.
- Students from the four Head Start agencies (AVANCE, GCCSA, HCDE and Baker Ripley) obtained slightly lower mean standard scores than the district mean standard score on both 2017–2018 kindergarten Iowa ELA and mathematics subtests.
- Students from Baker Ripley and GCCSA obtained higher mean standard scores than the district mean standard score on both 2017–2018 kindergarten Logramos LA and mathematics subtests.

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

 CJS

Attachment

Cc: Grenita Lathan
Noelia Longoria
Gabrielle Coleman



RESEARCH

Educational Program Report

**PREKINDERGARTEN EDUCATION PROGRAM: ACADEMIC
PERFORMANCE COMPARISON OF HEAD START PROGRAMS,
2017-2018**

HISD

Research and Accountability

ANALYZING DATA, MEASURING PERFORMANCE.



2018 BOARD OF EDUCATION

Rhonda Skillern-Jones
President

Jolanda Jones
First Vice President

Anne Sung
Second Vice President

Sergio Lira
Secretary

Holly Maria Flynn Vilaseca
Assistant Secretary

Wanda Adams
Diana Dávila
Susan Deigaard
Elizabeth Santos

Grenita Lathan, Ph.D.
Interim Superintendent of Schools

Carla Stevens
Assistant Superintendent
Department of Research and Accountability

Venita Holmes, Dr.P.H.
Research Manager

Lai Pei, Ph.D
Research Specialist

Houston Independent School District
Hattie Mae White Educational Support Center
4400 West 18th Street Houston, Texas 77092-8501

www.HoustonISD.org

It is the policy of the Houston Independent School District not to discriminate on the basis of age, color, handicap or disability, ancestry, national origin, marital status, race, religion, sex, veteran status, political affiliation, sexual orientation, gender identity and/or gender expression in its educational or employment programs and activities.

PREKINDERGARTEN EDUCATION PROGRAM: ACADEMIC PERFORMANCE COMPARISON OF HEAD START PROGRAMS, 2017–2018

Executive Summary

The goal of Head Start is to develop the cognitive and social-emotional skills of children from low-income families to prepare them to succeed in kindergarten and beyond. Presently, Houston Independent School District (HISD) collaborates with four federally-funded Head Start agencies: AVANCE Houston, Inc. (AVANCE); Gulf Coast Community Services Association (GCCSA); Harris County Department of Education (HCDE); and Baker Ripley (formerly Neighborhood Centers, Inc. (NCI)). Each Head Start agency provides not only high-quality educational programs to 3- or 4-year-old low income children, but also offers access to health, dental, and other support services in order to meet families' needs. The purpose of this evaluation was to examine the effect of the Head Start programs on students' academic performance using the 2017–2018 kindergarten Iowa English Language Arts (ELA), Logramos Language Arts (LA) and mathematics subtests.

Highlights

- Students who were dually-enrolled obtained comparable mean standard scores as students who were enrolled in standalone programs on both 2017–2018 Iowa ELA and mathematics subtests. However, the mean standard scores of all Head Start students were lower than the district mean standard score on both 2017–2018 kindergarten Iowa ELA and mathematics subtests.
- On both 2017–2018 Logramos LA and mathematics subtests, students who were dually-enrolled scored higher than students enrolled in standalone programs and the district mean standard scores.
- Economically-disadvantaged students who were dually-enrolled obtained comparable mean standard scores as students who were enrolled in standalone programs as well as the district mean standard score for economically-disadvantaged students on both 2017–2018 Iowa ELA and mathematics subtests.
- Economically-disadvantaged students who were dually-enrolled obtained higher mean standard scores than students who were enrolled in standalone programs and the district mean standard score for the economically-disadvantaged students on both 2017–2018 Logramos LA and mathematics subtests.
- Students from the four Head Start agencies (AVANCE, GCCSA, HCDE and Baker Ripley) obtained slightly lower mean standard scores than the district mean standard score on both 2017–2018 kindergarten Iowa ELA and mathematics subtests.
- Students from Baker Ripley and GCCSA obtained higher mean standard scores than the district mean standard score on both 2017–2018 kindergarten Logramos LA and mathematics subtests.
- Economically-disadvantaged students from GCCSA and HCDE obtained slightly higher mean standard scores than the district mean standard score for economically-disadvantaged students on the 2017–2018 Iowa ELA subtest.

- Economically-disadvantaged students from the four Head Start agencies obtained comparable mean standard scores to the district mean standard score for the economically-disadvantaged students on the 2017–2018 Iowa mathematics subtest.
- Economically-disadvantaged students from Baker Ripley and GCCSA obtained higher mean standard scores than the district mean standard score for economically-disadvantaged students on both 2017–2018 kindergarten Logramos LA and mathematics subtests.

Recommendations

1. Only 45% of students provided by the four Head Start agencies can be identified in the HISD database by using a composite of last name, first name, and date of birth. In the future, the collaborative should develop a way to track students into HISD schools by using more reliable students' background information, such as social security number.
2. The Head Start program provides not only early childhood education services, but also health screening and family support. Outcome measures in future evaluations should also include students' health data and information regarding the impact of the program toward enriching the home environment and providing family support.

Introduction

Head Start programs are publicly-funded and managed at the local level but must adhere to federal quality guidelines. These guidelines suggest that Head Start agencies provide a learning environment that promotes cognitive and social-emotional development to enhance the school-readiness of low-income students. In addition, Head Start agencies are expected to provide a wide array of social services to assist families. The Head Start programs are expected to: 1) allow students to experience a more integrated school day with in-depth study of prekindergarten curriculum, 2) promote school readiness, and 3) contribute to the narrowing of achievement gaps related to school readiness at the start of kindergarten and subsequent grade levels (Gormley, Gayer, Phillips & Dawson, 2005).

Presently, Houston Independent School District (HISD) collaborates with four federally-funded Head Start agencies: AVANCE, Baker Ripley (formerly Neighborhood Centers, Inc. (NCI), Gulf Coast Community Services Association (GCCSA), and Harris County Department of Education (HCDE). Each Head Start agency provides not only high quality educational programs to 3- or 4-year-old low income children, but also provides access to health, dental, and other support services in order to meet families' needs. In this report, the Head Start students' academic performance was reported by class models (**Appendix A-Tables 1-5**, p. 21-25) and by agency (**Appendix B-Tables 1-5**, p. 26-30). In addition, the Head Start students' academic performance should be interpreted with the consideration of unique characteristics of each Head Start agency (**Appendix C-Tables 1-4**, p. 31-41).

Literature Review

Past evaluations of Head Start programs suggest that a Head Start intervention can have both short-term and long-term benefits for children. For example, short-term benefits include improvements in cognitive and achievement outcomes (Shager et al., 2013). Longer-term benefits of Head Start include a reduction in the likelihood of special education placement, and a reduction in the incidence of early grade retention. In addition, some studies have found that a quality Head Start intervention increases the likelihood of high school graduation (Currie, 2001; Currie & Neidell, 2007).

Variations in findings regarding the benefits of Head Start sometimes have to do with methodological differences and the selection of comparison groups (Zhai, Brooks-Gunn, & Waldfogel, 2011; Shager et al., 2013). Previous studies have compared students who received a formal preschool education to all other students who did not receive a formal preschool education without controlling for demographic characteristics, such as economic status, that influence student performance (Gormley et al., 2005). Given the negative effects of low socio-economic status on academic outcomes (e.g., Aikens & Barbarin, 2008; Brooks-Gunn, 2003; Chatterji, 2006), the current evaluation has taken into consideration students' demographic characteristics when comparing the Head Start students' performance on the Iowa and Logramos tests.

The four Head Start agencies reviewed in this report are AVANCE, Baker Ripley, GCCSA, and HCDE. Appendix C-Tables 1-4 (pp. 31–41) provide the program description for each partnering agency for the 2016–2017 school year. The Head Start students can be categorized into two categories based on their enrollment status in Head Start programs, which are dually enrolled or standalone. These two types of Head Start class models will also be reviewed in this report. Dually-enrolled children are those who dually enrolled in Head Start and HISD classrooms located on an HISD campus. Standalone children are those who enrolled in one of the Head Start centers that is operated solely by one of the agencies

(AVANCE, Baker Ripley, GCCSA, and HCDE) with no HISD affiliation or partnership in place for classroom instruction.

Scope of the Evaluation

Purpose of the Study

This evaluation examined the impact of Head Start on student academic performance. First, two class models (dually-enrolled and standalone) were compared to examine the effect of class models on Head Start students' academic performance. Second, students' performance on the 2017–2018 kindergarten Iowa mathematics and ELA and Logramos mathematics and LA subtests were compared by Head Start agency.

Evaluation Questions

The following questions guided the study:

1. What were the demographic characteristics of Head Start students who were enrolled in 2016–2017?
2. What were the 2017–2018 kindergarten performance differences among Head Start students who were dually-enrolled versus students enrolled in standalone programs in one of the four Head Start agencies?
3. What were the 2017–2018 kindergarten performance differences among Head Start economically-disadvantaged students who were dually-enrolled versus students enrolled in standalone programs in the four Head Start agencies?
4. What were the kindergarten performance differences of all Head Start students among the four Head Start agencies (AVANCE, Baker Ripley, GCCSA, and HCDE) on the 2017–2018 Iowa and Logramos tests?
5. What were the kindergarten performance differences of economically-disadvantaged Head Start students among the four Head Start agencies (AVANCE, Baker Ripley, GCCSA, and HCDE) on the 2017–2018 Iowa and Logramos tests?

Methods

Data Collection and Analysis

Measure

Student performance data were collected from the following assessments: Iowa Achievement Test (Iowa) English Language Arts (ELA) and mathematics subtests and the Logramos 3rd edition (Logramos) language arts (LA) and mathematics subtests.

- The Iowa is a standardized test in English, and is used to assess students' academic achievement in various academic subjects across nine grade levels (kindergarten through grade 8).
- The Logramos is a standardized achievement test in Spanish, and is used to assess the level of content mastery for students who receive instruction in Spanish. The Logramos assesses students' academic achievement in the same content areas as the Iowa (i.e., language arts and mathematics); however, the Logramos is not a translation of the Iowa.
- Both Iowa and Logramos are norm-referenced assessments. Kindergarten students take either Iowa or Logramos in the December of students' kindergarten year in HISD. In order to compare

students' scores from subgroups, the standard score in both Iowa and Logramos were used for all subtests in this evaluation.

Data Analyses

- The academic performance of the 2017–2018 HISD kindergarten students enrolled in the four Head Start agencies in 2016–2017 was analyzed in this evaluation. Appendix A-Table 1 (p. 21) shows a breakdown of the demographic characteristics of the 2017–2018 HISD kindergarteners by two class models. Appendix B-Table 1 (p. 26) provides a breakdown of the demographic characteristics of the 2017–2018 HISD kindergarteners by the Head Start program they attended in 2016–2017. The Iowa and Logramos LA Total and mathematics standard scores of 2017–2018 kindergarten students across the Head Start agencies and two class models were compared to examine the impact of Head Start on students' academic performance at the program level and student group level.
- Economic status has a strong effect on student achievement (Aikens & Barbarin, 2008). Other factors, such as limited English proficiency (LEP) and at-risk status are also associated with student performance. Thus, student groups were disaggregated by ethnicity, gender, economically-disadvantaged, special education placement, limited English proficiency (LEP), and at-risk status to control for the effect of student demographic characteristics on the students' academic performance on the kindergarten Iowa ELA and Logramos LA and mathematics subtests.

Sample

- Each of the four Head Start agencies provided a list of students enrolled in their programs in 2016–2017. The students were matched to the Public Education Information Management System (PEIMS) 2017–2018 database of HISD kindergarteners by a composite of last name, first name, and date of birth of students provided by the Head Start agencies. For AVANCE, 184 students were identified as 2017–2018 HISD kindergarteners; for Baker Ripley, 832, GCCSA, 611 students; and for HCDE, 181 students.

Data Limitations

- This report has several limitations. The first limitation is that the data provided by the Head Start agencies did not always contain a unique identifier for their students. Consequently, the less reliable method of linking students from Head Start to their HISD kindergarten enrollment data was used with their first name, last name, and date of birth. For this reason, it is possible that some students who attended Head Start were not captured as enrolled in HISD in this analysis. Approximately 45 percent of students who attended a local Head Start program in 2016–2017 were identified as attending HISD kindergarten in 2017–2018.

Results

What were the demographic characteristics of Head Start students who were enrolled in 2016–2017?

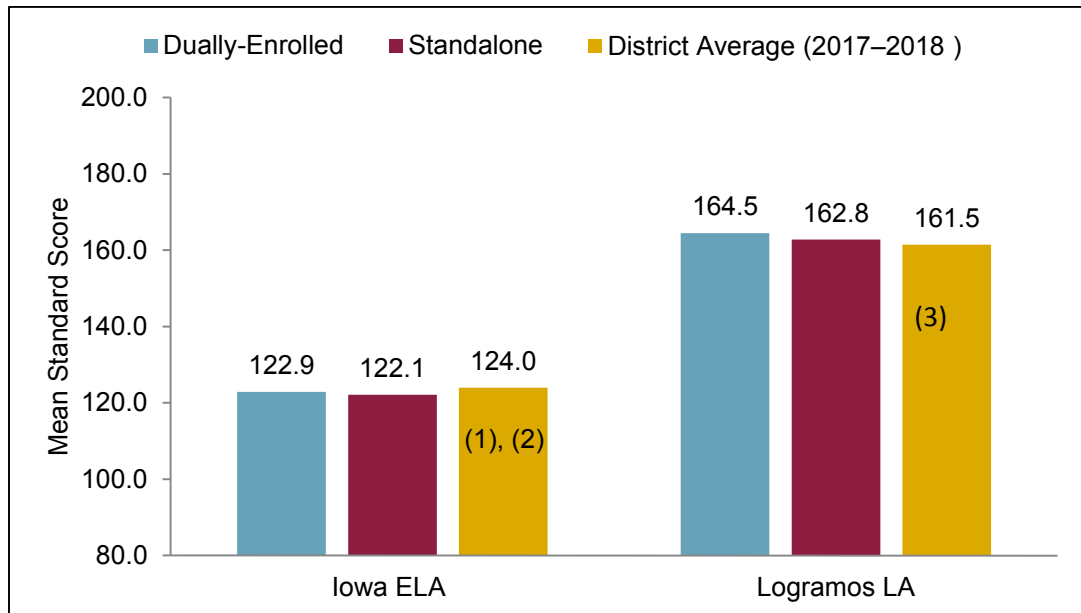
- Appendix A-Table 1 (p. 21) shows the demographic characteristics of Head Start students by the two Head Start class models. The students from the two Head Start class models were comparable with respect to economically-disadvantaged status. Notably, in both groups, the majority of students were economically-disadvantaged (approximating 92%).
- Although gender represented a 49%/51% split, it was in favor of female students for standalone and in favor of male students for dually-enrolled models.
- There were some differences in the demographic characteristics of the students from the two Head Start class models. The percentage of LEP students and at-risk students from the dually-enrolled classrooms was higher than standalone classrooms (58.9% vs. 45.8%), and (96.5% vs. 89.6%), respectively. A higher percentage of dually-enrolled students was Hispanic (73.3%), while the percentage of Hispanic students from standalone classrooms was 61.7% (Appendix A-Table 1, p. 21).
- Appendix B-Table 1 (p. 26) shows the demographic characteristics of Head Start students by the four Head Start agencies. The students from the four Head Start agencies were comparable with respect to at-risk status, economically-disadvantaged status and special education placement. Notably, in four Head Start agencies, the majority of students (over 90%) were economically-disadvantaged, over 90% were at-risk, and less than 6% were in special education.
- There are some differences in the demographic characteristics of the students from the four Head Start agencies. AVANCE had the highest percentage of Hispanic students (84.2%) and HCDE had the largest percentage of African American students (42.0%). Baker Ripley had the highest percentage of LEP students (69.6%).

What were the 2017–2018 kindergarten performance differences among Head Start students who were dually-enrolled versus students enrolled in standalone programs in one of the four Head Start agencies?

- Iowa ELA and Logramos LA mean standard scores for kindergarten students who attended one of the four Head Start agencies' dually-enrolled or standalone programs in 2016–2017 are displayed in Figure 1 (p. 7). Appendix A-Table 2 (p. 22) and Appendix A-Table 4 (p. 24) present the number of students who took the Iowa ELA and Logramos LA subtests in 2017–2018, and the means and standard deviations of the standard scores by ethnicity, gender, economically-disadvantaged, special education placement, LEP, and at-risk status.

Iowa ELA and Logramos LA Performance

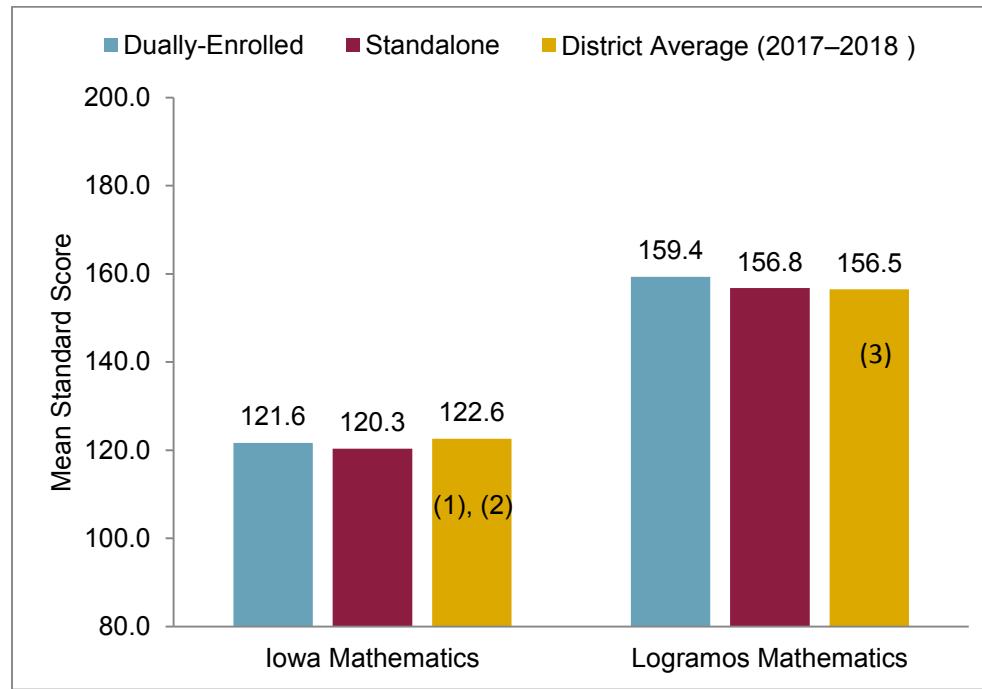
Figure 1. Mean Standard Scores on the 2017–2018 Iowa English Language Arts (ELA) and Logramos Language Arts (LA) subtests for HISD Kindergarten Students by Head Start Enrollment Status



Note. (1) Significant difference between dually-enrolled and district in Iowa ELA subtest with $p = 0.001$
 (2) Significant difference between standalone and district in Iowa ELA subtest with $p = 0.002$
 (3) Significant difference between dually-enrolled and district in Logramos LA subtest with $p = 0$

- Students who were dually-enrolled ($M = 122.9$) obtained a comparable mean standard score to students who were enrolled in standalone programs ($M = 122.1$) on the 2017–2018 Iowa ELA subtest (Figure 1).
- Students who were dually-enrolled in one of the four Head Start programs in 2016–2017 scored higher on the 2017–2018 Logramos LA subtest compared to students enrolled in standalone programs. However, the independent two-sample t-test shows that the standard score difference between two groups was not statistically significant with $p = 0.38$.
- Students who were dually-enrolled ($M = 122.9$) and who were enrolled in a standalone program ($M = 122.1$) obtained lower mean standard scores than the district mean standard score ($M = 124.0$) on the 2017–2018 kindergarten Iowa ELA subtest (Figure 1).
- Students who were dually-enrolled ($M = 164.5$) obtained statistically significantly higher mean standard scores than the district mean standard score ($M = 161.5$) on the 2017–2018 kindergarten Logramos LA subtest (Figure 1). Standalone program students also scored higher than the district although the difference was not statistically significant.

Iowa and Logramos Mathematics Performance

Figure 2. Mean Standard Scores on the 2017–2018 Iowa and Logramos Mathematics Subtests for HISD Kindergarten Students by Head Start Enrollment Status

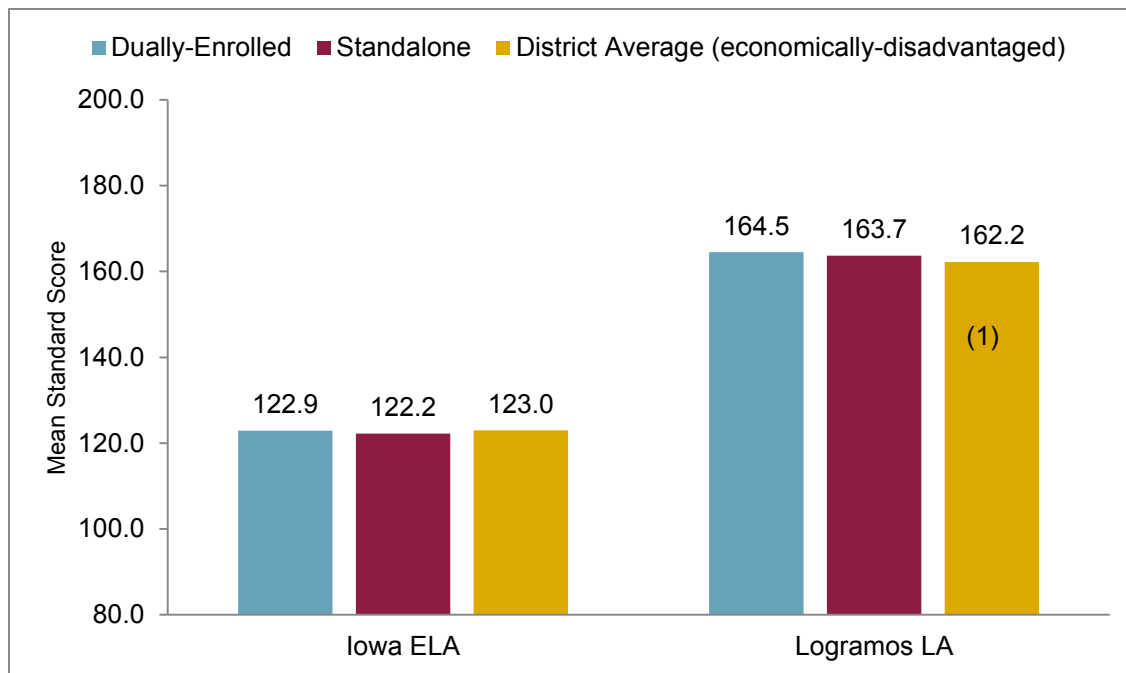
Note. (1) Significant difference between dually-enrolled and district in Iowa mathematics subtest with $p = 0.03$
 (2) Significant difference between standalone and district in Iowa mathematics subtest with $p = 0.004$
 (3) Significant difference between dually-enrolled and district in Logramos mathematics subtest with $p = 0$

- Iowa and Logramos mathematics mean standard scores for kindergarten students who attended one of the four Head Start agencies' dually-enrolled or standalone programs in 2016–2017 are displayed in **Figure 2**. Appendix A-Table 3 (p. 23) and Appendix A-Table 5 (p. 25) present the number of students who took the Iowa and Logramos mathematics subtest in 2017–2018, and the means and standard deviations of the standard scores by ethnicity, gender, economically-disadvantaged, special education placement, LEP, and at-risk status.
- Students who were dually-enrolled ($M = 121.6$) obtained a comparable mean standard score as students who were enrolled in standalone programs ($M = 120.3$), but they scored lower than the district mean standard score ($M = 122.6$) on the 2017–2018 Iowa mathematics subtest (Figure 2).
- Students who were dually-enrolled in one of the four Head Start programs in 2016–2017 scored higher on the 2017–2018 Logramos mathematics subtest compared to students enrolled in standalone programs. However, the independent two-sample t-test shows that the standard score difference between two groups was not statistically significant with $p = 0.40$.
- Students who were dually-enrolled ($M = 159.4$) obtained a higher mean standard score than the district mean standard score ($M = 156.5$) on the 2017–2018 kindergarten Logramos mathematics subtest (Figure 2) with the difference being statistically significant.

What were the 2017–2018 kindergarten performance differences among Head Start economically-disadvantaged students who were dually-enrolled versus students enrolled in standalone programs in the four Head Start agencies?

Iowa ELA and Logramos LA Performance

Figure 3. Mean Standard Scores on the 2017–2018 Iowa ELA and Logramos LA subtests for HISD Economically-disadvantaged Kindergarten Students by Head Start Enrollment Status



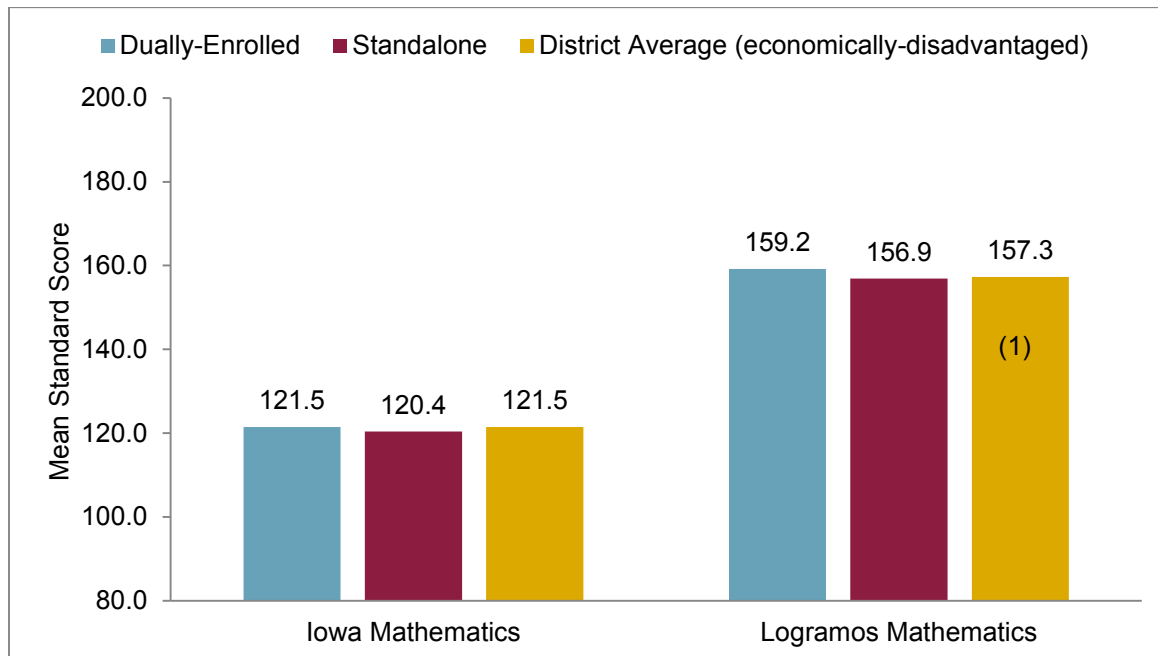
Note. (1) Significant difference between dually-enrolled and district in Logramos LA subtest with $p = 0.0002$

- Iowa ELA and Logramos LA mean standard scores for economically-disadvantaged kindergarten students who attended the four Head Start agencies' dual or standalone programs in 2016–2017 are displayed in **Figure 3**. Appendix A-Table 2 (p. 22) and Appendix A-Table 4 (p. 24) present the number of economically-disadvantaged students who took the Iowa ELA and Logramos LA subtests in 2017–2018, and the means and standard deviations of the standard scores by Head Start enrollment status.
- On the 2017–2018 Iowa ELA subtest, economically-disadvantaged students who were dually-enrolled ($M = 122.9$) obtained a comparable mean standard score as students who were enrolled in standalone programs ($M = 122.2$) as well as the district's mean standard score for economically-disadvantaged students ($M = 123.0$) (Figure 3).
- Economically-disadvantaged students who were dually-enrolled ($M = 164.5$) in the four Head Start programs in 2016–2017 scored higher on the 2017–2018 Logramos LA subtest compared to students enrolled in standalone programs ($M = 163.7$). The independent two-sample t-tests shows that the standard score difference between the two groups was not statistically significant with $p = 0.46$ (Figure 3).

- Economically-disadvantaged students who were dually-enrolled ($M = 164.5$) and who were enrolled in standalone programs ($M = 163.7$) obtained higher mean standard scores than the district mean standard score for economically-disadvantaged students ($M = 162.2$) on the 2017–2018 kindergarten Logramos LA subtest (Figure 3, p. 9). The difference for dually-enrolled students compared to the district was statistically significant.

Iowa and Logramos Mathematics Performance

Figure 4. Mean Standard Scores on the 2017–2018 Iowa and Logramos Mathematics Subtests for HISD Economically-disadvantaged Kindergarten Students by Head Start Enrollment Status



Note. (1) Significant difference between dually-enrolled and district in Logramos mathematics subtest with $p = 0.0005$

- Iowa and Logramos mathematics mean standard scores for kindergarten students who attended one of the four Head Start agencies' dual or standalone programs in 2016–2017 are displayed in **Figure 4**. Appendix A-Table 3 (p. 23) and Appendix A-Table 5 (p. 25) present the number of economically-disadvantaged students who took the Iowa and Logramos mathematics subtests in 2017–2018, and the means and standard deviations of the standard scores by Head Start enrollment status.
- On the 2017–2018 Iowa mathematics subtest, economically-disadvantaged students who were dually-enrolled ($M = 121.5$) obtained a comparable mean standard score as students who were enrolled in standalone programs ($M = 120.4$), and is the same as the district's mean standard score for economically-disadvantaged students ($M = 121.5$) (Figure 4).
- Economically-disadvantaged students who were dually-enrolled ($M = 159.2$) in one of the four Head Start programs in 2016–2017 scored higher on the 2017–2018 Logramos mathematics subtest compared to economically-disadvantaged students who were enrolled in a standalone

program ($M = 156.9$). However, the independent two-sample t-tests shows that the standard score difference between the two groups was not statistically significant with $p = 0.6$.

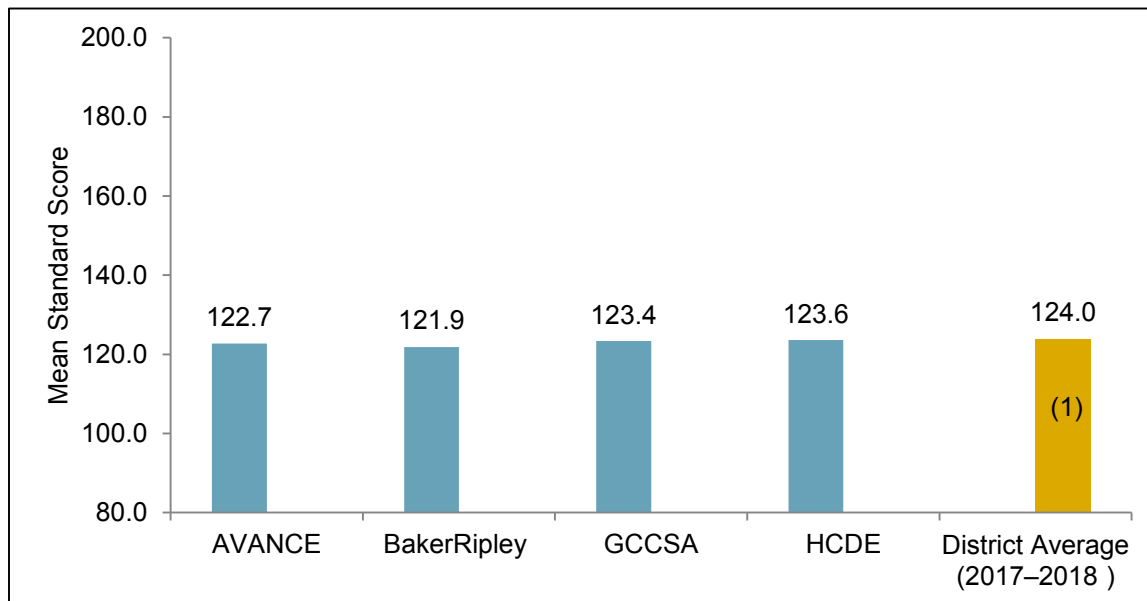
- Economically-disadvantaged students who were dually-enrolled ($M = 159.2$) obtained a higher mean standard score that was statistically significant than the district mean standard score for economically-disadvantaged students ($M = 157.3$) on the 2017–2018 kindergarten Logramos mathematics subtest (Figure 4, p. 10).

What were the kindergarten performance differences of all Head Start students among the four Head Start Agencies (AVANCE, Baker Ripley, GCCSA, and HCDE) on the 2017–2018 Iowa and Logramos tests?

- The following series of analyses reflect performance by agency.

Iowa ELA Performance

Figure 5. Mean Standard Scores on the 2017–2018 Iowa ELA Subtest by Head Start Agency



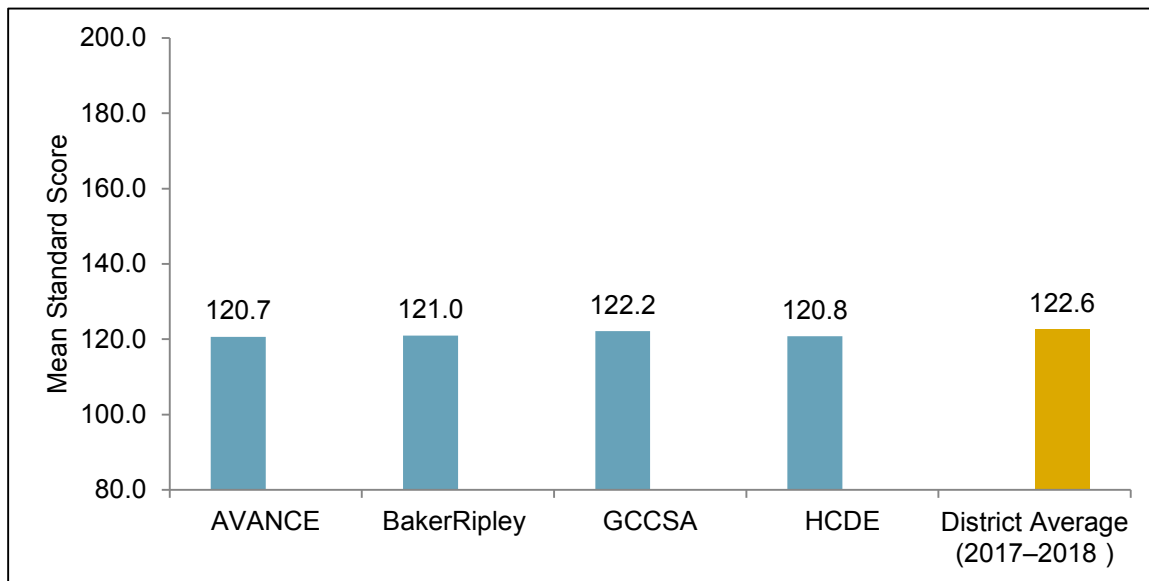
Note. (1) Significant difference between Baker Ripley and district in Iowa ELA subtest with $p = 0$

- Iowa ELA mean standard scores for students who attended Head Start in 2016–2017 are displayed in **Figure 5**. Appendix B-Table 2 (p. 27) presents the number of students who took the Iowa ELA subtest in 2017–2018, the means and standard deviations of the standard scores by the four Head Start agencies and student groups (ethnicity, gender, economically-disadvantaged, special education placement, limited English proficiency (LEP), and at-risk status).
- Students from the four Head Start agencies obtained slightly lower mean standard scores than the district mean standard score ($M = 124.0$) on the 2017–2018 kindergarten Iowa ELA subtest (Figure 5).

- Students from the four Head Start agencies obtained comparable mean standard scores ranging from 121.9 at Baker Ripley to 123.6 at HCDE on the 2017–2018 kindergarten Iowa ELA subtest. The difference for students from Baker Ripley compared to the district was statistically significant.

Iowa Mathematics Performance

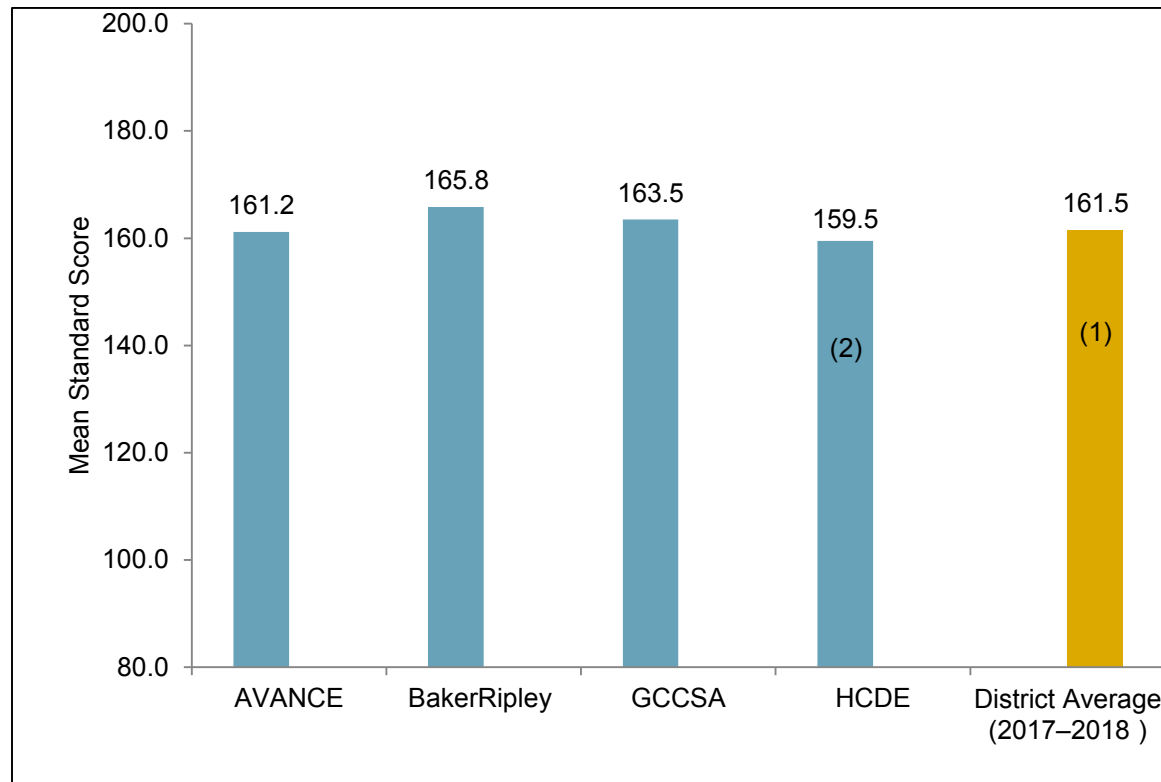
Figure 6. Mean Standard Scores on the 2017–2018 Iowa Mathematics Subtest by Head Start Agency



- Iowa mathematics mean standard scores for students who attended Head Start in 2016–2017 are displayed in **Figure 6**. Appendix B-Table 3 (p. 28) presents the number of students who took the Iowa mathematics subtest in 2017–2018, the means and standard deviations of the standard scores by the four Head Start agencies and student groups (ethnicity, gender, economically-disadvantaged, special education placement, limited English proficiency (LEP), and at-risk status).
- Students from the four Head Start agencies obtained a slightly lower mean standard score than the district mean standard score ($M = 122.6$) on the 2017–2018 kindergarten Iowa mathematics subtest.
- Students from GCCSA ($M = 122.2$) had the highest mean standard score among the four agencies on the 2017–2018 Iowa mathematics subtest (Figure 6). Although they were comparable, mean standard scores ranged from 120.7 at AVANCE to 122.2 at GCCSA.

Logramos LA Performance

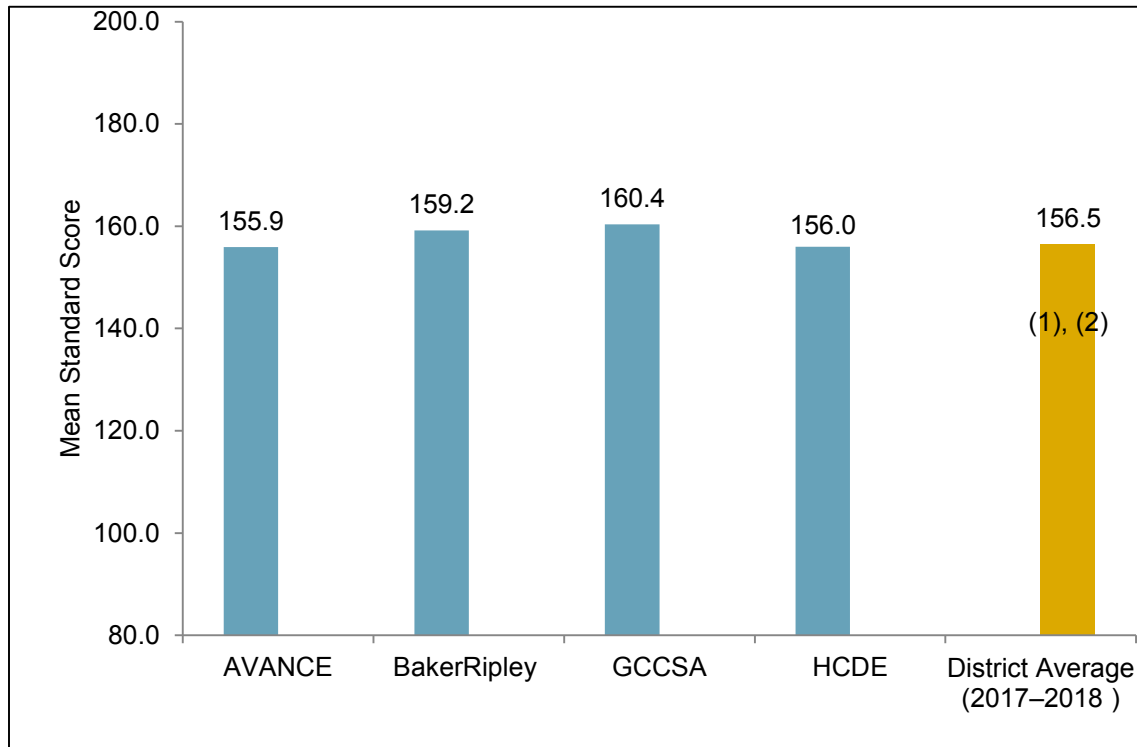
Figure 7. Mean Standard Scores on the 2017–2018 Logramos LA Subtest by Head Start Agency



Note. (1) Significant difference between Baker Ripley and district in Logramos LA subtest with $p = 0$
 (2) Significant difference between Baker Ripley and HCDE in Logramos LA subtest with $p = 0.01$

- Logramos LA mean standard scores for students who attended Head Start in 2016–2017 are displayed in **Figure 7**. Appendix B-Table 4 (p. 29) presents the number of students who took the Logramos LA subtest in 2017–2018, the means and standard deviations of the standard scores by the four Head Start agencies and student groups (gender, economically-disadvantaged, special education placement, limited English proficiency (LEP), and at-risk status).
- Students from Baker Ripley ($M = 165.8$) and GCCSA ($M = 163.5$) obtained higher mean standard scores than the district mean standard score ($M = 161.5$) on the 2017–2018 kindergarten Logramos LA subtest. The difference for Baker Ripley compared to the district was statistically significant.
- Among the four Head Start agencies, students from Ripley ($M = 165.8$) had the highest mean standard score, while students from HCDE ($M = 159.5$) had the lowest mean standard score on the 2017–2018 kindergarten Logramos LA subtest. The independent two-sample t-tests shows that the standard score difference between these two agencies was statistically significant with $p = 0.01$.

Logramos Mathematics Performance

Figure 8. Mean Standard Scores on the 2017–2018 Logramos Mathematics Subtest by Head Start Agency

Note. (1) Significant difference between Baker Ripley and district in Logramos mathematics subtest with $p = 0$

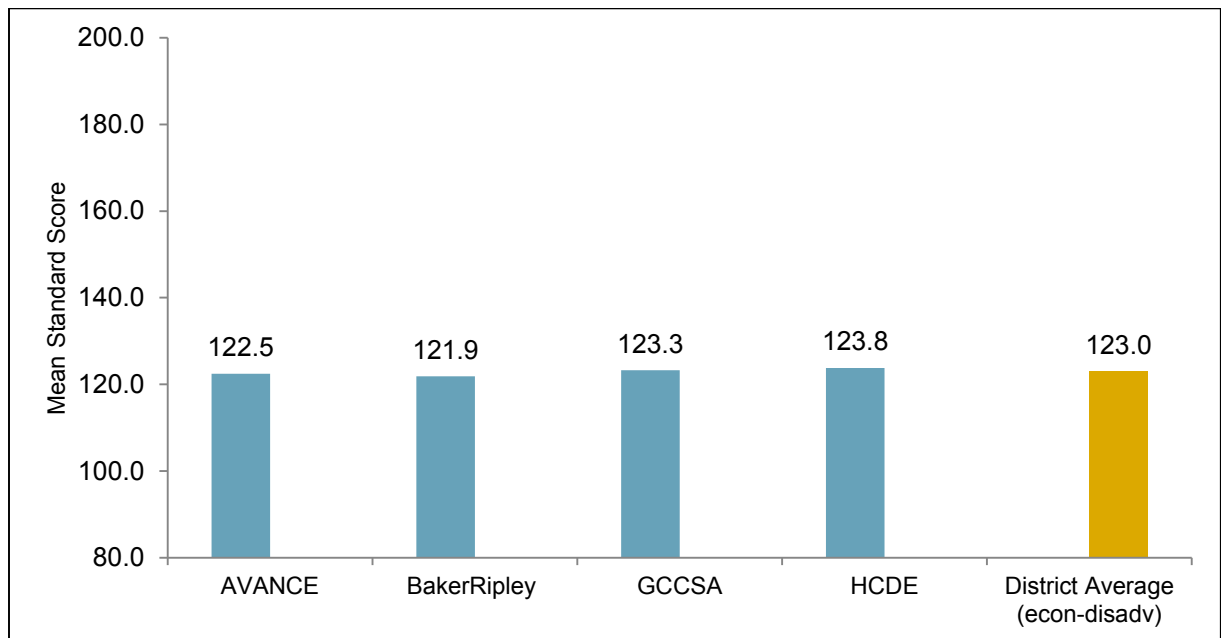
(2) Significant difference between GCCSA and district in Logramos mathematics subtest with $p = 0.0002$

- Logramos mathematics mean standard scores for students who attended Head Start in 2016–2017 are displayed in **Figure 8**. Appendix B-Table 5 (p. 30) presents the number of students who took the Logramos mathematics subtest in 2017–2018, and the means and standard deviations of the standard scores by the four Head Start agencies and student groups (gender, economically-disadvantaged, special education placement, LEP, and at-risk status).
- Students from Baker Ripley ($M = 159.2$; $p = 0$) and GCCSA ($M = 160.4$; $p = 0.0002$) obtained higher mean standard scores than the district mean standard score ($M = 156.5$) on the 2017–2018 kindergarten Logramos mathematics subtest. The differences for students from Baker Ripley and GCCSA compared to the district were statistically significant.
- Among the four Head Start agencies, students from AVANCE ($M = 155.9$) had the lowest mean standard score, while students from GCCSA ($M = 160.4$) had the highest mean standard score on the 2017–2018 kindergarten Logramos mathematics subtest. However, the independent two-sample t-tests shows that the standard score difference between these two agencies was not statistically significant with $p = 0.8$.

What were the kindergarten performance differences of economically-disadvantaged Head Start students among the four Head Start agencies (AVANCE, Baker Ripley, GCCSA, and HCDE) on the 2017–2018 Iowa and Logramos tests?

Iowa ELA Performance

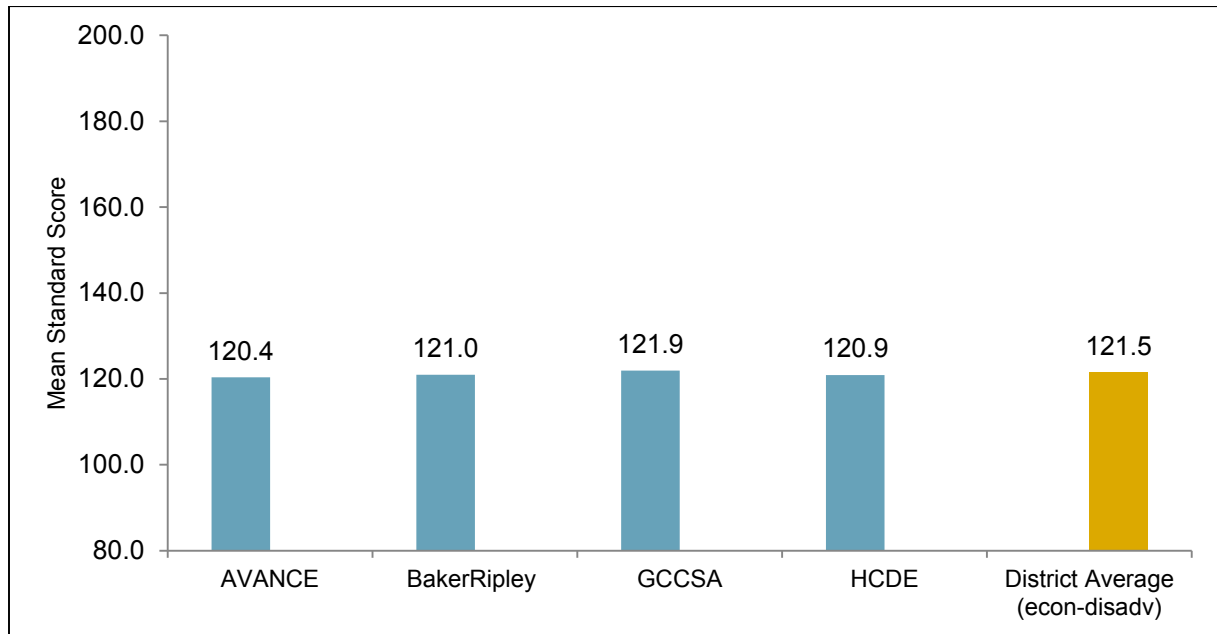
Figure 9. Mean Standard Scores on the 2017–2018 Iowa ELA Subtest for Economically-disadvantaged HSD Kindergarten Students Enrolled in Head Start the Previous Year



- The district average comprised only economically-disadvantaged students, and was compared with the Head Start economically-disadvantaged students because the majority of Head Start students were identified as economically-disadvantaged (over 90%) in kindergarten.
- Iowa ELA mean standard scores for economically-disadvantaged kindergarten students are displayed in **Figure 9**. Appendix B-Table 2 (p. 27) presents the number of economically-disadvantaged students who took the Iowa ELA subtest in 2017–2018, and the means and standard deviations of the standard scores by the four Head Start agencies.
- Economically-disadvantaged students from GCCSA ($M = 123.3$) and HCDE ($M = 123.8$) obtained slightly higher mean standard scores than the district mean standard score for economically-disadvantaged students ($M = 123.0$) on the 2017–2018 Iowa ELA subtest, although all scores were within 1.9 points.
- The Iowa ELA mean standard score of economically-disadvantaged students from Baker Ripley ($M = 121.9$) was lower than the mean standard score of economically-disadvantaged students from the other three Head Start agencies.

Iowa Mathematics Performance

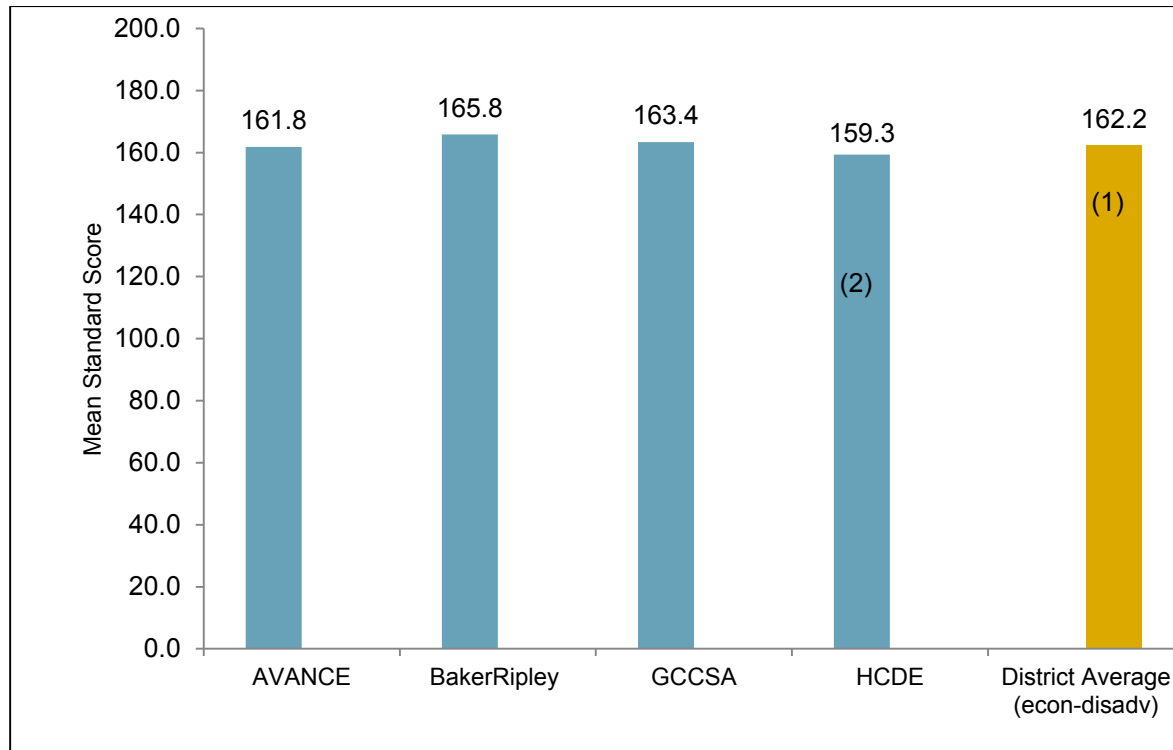
Figure 10. Mean Standard Scores on the 2017–2018 Iowa Mathematics Subtest for Economically-disadvantaged HISD Kindergarten Students Enrolled in Head Start the Previous Year



- Iowa mathematics mean standard scores for the economically-disadvantaged kindergarten students are displayed in **Figure 10**. Appendix B-Table 3 (p. 28) presents the number of economically-disadvantaged students who took the Iowa mathematics subtest in 2017–2018, and the means and standard deviations of the standard scores by the four Head Start agencies.
- Economically-disadvantaged students from four Head Start agencies: AVANCE (M = 120.4), Baker Ripley (M = 121.0), GCCSA (M = 121.9), and HCDE (M = 120.9) obtained comparable mean standard scores. The mean standard scores of the economically-disadvantaged students from these four Head Start agencies were similar to the district mean standard score for their district economically-disadvantaged peers (M = 121.5) on the 2017–2018 Iowa mathematics subtest.

Logramos LA Performance

Figure 11. Mean Standard Scores on the 2017–2018 Logramos LA Subtest for Economically-disadvantaged HISD Kindergarten Students Enrolled in Head Start the Previous Year

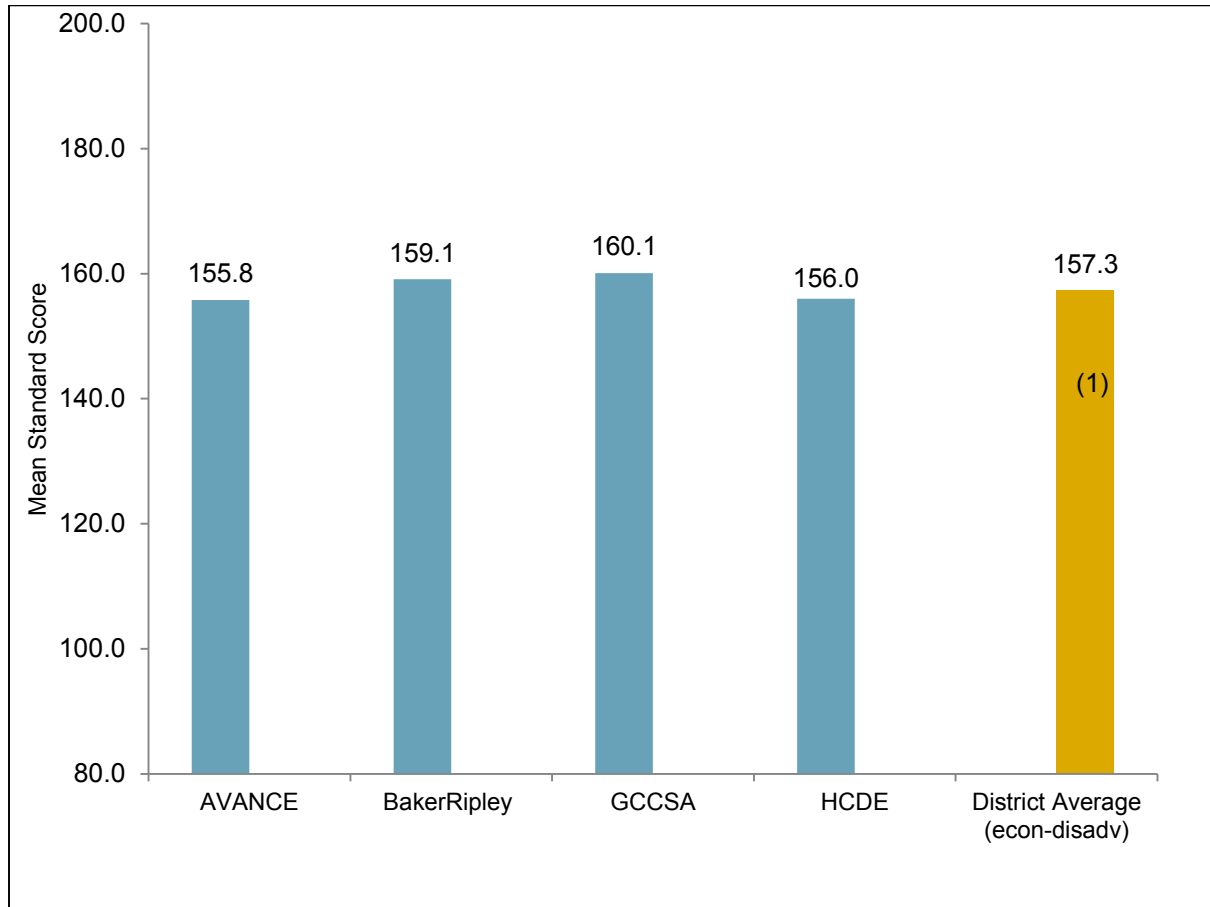


Note. (1) Significant difference between Baker Ripley and district in Logramos LA subtest with $p = 0$
 (2) Significant difference between Baker Ripley and HCDE in Logramos LA subtest with $p = 0.01$

- Logramos LA mean standard scores for economically-disadvantaged kindergarten students are displayed in **Figure 11**. Appendix B-Table 4 (p. 29) presents the number of economically-disadvantaged students who took the Logramos LA subtest in 2017–2018, and the means and standard deviations of the standard scores by the four Head Start agencies.
- Economically-disadvantaged students from Baker Ripley ($M = 165.8$; $p = 0$) and GCCSA ($M = 163.4$) obtained higher mean standard scores than the district mean standard score for economically-disadvantaged students ($M = 162.2$) on the 2017–2018 kindergarten Logramos LA subtest.
- Economically-disadvantaged students from AVANCE ($M = 161.8$) and HCDE ($M = 159.3$) obtained lower mean standard scores than the district mean standard score for economically-disadvantaged students ($M = 162.2$) on the 2017–2018 kindergarten Logramos LA subtest.
- Among the four Head Start agencies, economically-disadvantaged students from HCDE ($M = 159.3$) had the lowest mean standard score, while economically-disadvantaged students from Baker Ripley ($M = 165.8$) had the highest mean standard score on the 2017–2018 kindergarten Logramos LA subtest. The independent two-sample t-tests shows that the standard score difference between these two agencies was statistically significant with $p = 0.01$.

Logramos Mathematics Performance

Figure 12. Mean Standard Scores on the 2017–2018 Logramos Mathematics Subtest for Economically-disadvantaged HISD Kindergarten Students Enrolled in Head Start the Previous Year



Note. (1) Significant difference between GCCSA and district in Logramos mathematics subtest with $p = 0.03$

- Logramos mathematics mean standard scores for economically-disadvantaged kindergarten students are displayed in **Figure 12**. Appendix B-Table 5 (p. 30) presents the number of students who took the Logramos mathematics subtest in 2017–2018, and the means and standard deviations of the standard scores by the four Head Start agencies.
- Economically-disadvantaged students from Baker Ripley ($M = 159.1$) and GCCSA ($M = 160.1$; $p = 0.03$) obtained comparable mean standard scores, which were higher than the district mean standard score for economically-disadvantaged students ($M = 157.3$) on the 2017–2018 kindergarten Logramos mathematics subtest. The difference for economically-disadvantaged students from Baker Ripley compared to the district was statistically significant.
- Economically-disadvantaged students from AVANCE ($M = 155.8$) and HCDE ($M = 156.0$) obtained lower scores than the district mean standard score for economically-disadvantaged students on the 2017–2018 kindergarten Logramos mathematics subtest.

Discussion

Head Start has the goal of improving educational and developmental outcomes for children from low income families by meeting the needs of the whole child. This includes addressing the cognitive, social-emotional, and health needs of children and positively influencing the parenting practices. However, due to data limitations, this report only examined the impacts of Head Start on the cognitive domain of students who were enrolled in Head Start during 2016–2017. This evaluation compares the academic performance of Head Start students by program, economic status, and enrollment status once they are in kindergarten in HISD.

Students dually-enrolled in HISD and Head Start receive instruction and support from two instructors rather than one. However, the cognitive impacts of these two class models in students' elementary school year were limited. Findings from this evaluation suggested that students who were dually-enrolled obtained comparable mean standard scores as students who were enrolled in standalone programs on both 2017–2018 Iowa ELA and mathematics subtests. But dually-enrolled students scored higher on both 2017–2018 Logramos LA and mathematics subtests compared to students enrolled in standalone programs.

When student performance was compared by Head Start agencies, the findings from this evaluation were mixed. The students' performance on the 2017–2018 Iowa ELA and Logramos LA and mathematics subtests varied by Head Start agency. However, the impact of each Head Start program on students' performance should be interpreted with caution because each Head Start program is different, such as service targets and teacher qualifications. Therefore, when we compare the impact of the four Head Start agencies, we should take the characteristics of each agency and their sites into account (Appendix C Table 1-4, p. 31-41).

This report only examined the impacts of Head Start on students' academic performance. It leaves many important questions about Head Start unanswered. These questions include, but are certainly not limited to: What impact does Head Start have on children's social-emotional development, physical development, and on parental practices? Is there a benefit to having two years of Head Start rather than one year? Future research will be conducted to further the understanding of the role Head Start plays in the well-being of children and families.

References

- Aikens, N. L., & Barbarin, O. (2008). Socioeconomic differences in ELA trajectories: The contribution of family, neighborhood, and school contexts. *Journal of Educational Psychology*, 100(2), 235-251.
- Brooks-Gunn, J. (2003). Do you believe in magic? What we can expect from early childhood intervention programs. *Society for Research in Child Development*, 17(1): 3-14.
- Chatterji, M. (2006). ELA achievement gaps, correlates, and moderators of early ELA achievement: Evidence from the Early Childhood Longitudinal Study (ECLS) kindergarten to first grade sample. *Journal of Educational Psychology*, 98(3), 489-507.
- Currie, J. (2001). Early childhood intervention programs: What do we know? *Journal of Economic Perspectives*, 15, 213-238.
- Currie, J., & Neidell, M. (2007). Getting inside the “Black Box” of Head Start quality: What matters and what doesn’t. *Economics of Education Review*, 26(1), 83-99.
- Frahm, R. (2010). Test scores and ZIP codes: Educators say housing is a factor in achievement. Retrieved from <http://ctmirror.org/2010/04/29/test-scores-and-zip-codes-educators-say-housing-factor-achievement/>
- Gormley, W. T., Gayer, T., Phillips, D., & Dawson, B. (2005). The Effects of Universal Pre-K on Cognitive Development. *Developmental Psychology*, 41(6), 872-884.
- Magnuson, K., Ruhm, C., & Waldfogel, J. (2007). The persistence of preschool effects: Do subsequent classroom experiences matter? *Early Childhood Research Quarterly*, 22(1), 18-38.
- Shager, H. M., Schindler, H. S., Magnuson, K. A., Duncan, G. J., Yoshikawa, H., & Hart, C. M. D. (2013). Can research design explain variation in Head Start research results? A meta-analysis of cognitive and achievement outcomes. *Educational Evaluation and Policy Analysis*, 35, 76-95.
- Zhai, F., Brooks-Gunn, J., & Waldfogel, J. (2011). Head Start and urban children's school readiness: A birth cohort study in 18 cities. *Developmental Psychology*, 47, 134-152.

Appendix A

Table 1. 2017–2018 Demographic Characteristics of HISD Kindergarten Students by Head Start Class Models

		Dually-Enrolled (n = 1,500)		Standalone (n = 308)	
Demographic Characteristic		n	%	n	%
Gender	Female	728	48.5	156	50.6
	Male	772	51.5	152	49.4
Ethnicity	Asian	20	1.3	2	0.6
	African-American	359	23.9	100	32.5
	Hispanic	1,100	73.3	190	61.7
	White	18	1.2	13	4.2
	Other	3	0.2	3	1
Economically-Disadvantaged	No	116	7.7	20	6.5
	Yes	1,384	92.3	288	93.5
Special Education	No	1,441	96.1	295	95.8
	Yes	59	3.9	13	4.2
Limited English Proficient (LEP)	No	617	41.1	167	54.2
	Yes	883	58.9	141	45.8
At-Risk	No	52	3.5	32	10.4
	Yes	1,448	96.5	276	89.6

Note. The demographic information used in this table was based on student information at the time that the student enrolled in kindergarten in 2017–2018.

Table 2. Mean Standard Scores on the 2017–2018 Iowa ELA Subtest by Head Start Class Models

Dually-Enrolled					Standalone		
Student Group		Mean	SD	n	Mean	SD	n
Overall Sample		122.9	6.8	690	122.1	6.6	194
Gender	Female	123.5	6.8	340	122.7	6.2	96
	Male	122.3	6.9	350	121.6	7.0	98
Ethnicity	Asian	119.6	8.9	20	*	*	*
	African-American	123.3	7.1	337	123.7	7.4	95
	Hispanic	122.6	6.3	317	120.5	5.3	85
	White	126.1	7.7	14	120.9	7.2	10
	Other	*	*	*	*	*	*
Economically disadvantaged	No	123.3	7.2	54	120.1	4.7	10
	Yes	122.9	6.8	636	122.2	6.7	184
Special Education	No	123.1	6.8	656	122.3	6.4	188
	Yes	119.4	6.6	34	116.8	11.5	6
Limited English Proficient (LEP)	No	123.5	6.8	578	122.7	6.7	155
	Yes	119.8	6.1	112	119.9	5.6	39
At-Risk	No	121.5	6.0	49	120.7	4.9	30
	Yes	123.0	6.9	641	122.4	6.9	164

Note. * Denotes fewer than 5 students, and were not reported.

Table 3. Mean Standard Scores on the 2017–2018 Iowa Mathematics Subtest by Head Start Class Models

		Dually-Enrolled			Standalone		
Student Group		Mean	SD	n	Mean	SD	n
Overall Sample		121.6	9.2	707	120.3	8.4	195
Gender	Female	122.3	9.1	344	120.5	8.2	99
	Male	121.0	9.2	363	120.2	8.7	96
Ethnicity	Asian	118.6	12.1	20	*	*	*
	African-American	121.6	9.4	346	120.5	9.0	96
	Hispanic	121.7	8.7	324	119.9	7.5	85
	White	125.8	8.1	15	121.8	10.6	10
	Other	*	*	*	*	*	*
Economically disadvantaged	No	123.7	9.8	55	118.7	4.8	10
	Yes	121.5	9.1	652	120.4	8.5	185
Special Education	No	121.8	9.0	673	120.4	8.4	189
	Yes	117.8	11.2	34	118.5	9.8	6
Limited English Proficient (LEP)	No	122.3	9.1	591	120.7	8.4	156
	Yes	118.4	9.1	116	118.9	8.3	39
At-Risk	No	116.5	7.8	51	117.6	6.9	31
	Yes	122.0	9.2	656	120.9	8.6	164

Note. * Denotes fewer than 5 students, and were not reported.

Table 4. Mean Standard Scores on the 2017–2018 Logramos LA Subtest by Head Start Class Models

Dually-Enrolled					Standalone		
Student Group		Mean	SD	n	Mean	SD	n
Overall Sample		164.5	14.4	748	162.8	13.5	101
Gender	Female	165.8	14.1	365	162.8	13.3	56
	Male	163.3	14.5	383	162.8	13.9	45
Economically disadvantaged	No	165.3	15.9	59	153.7	14.4	9
	Yes	164.5	14.2	689	163.7	13.2	92
Special Education	No	164.9	14.3	729	163.1	13.7	96
	Yes	150.7	8.0	19	157.8	9.4	5
Limited English Proficient (LEP)	No	169.3	12.2	7	169.7	15.4	6
	Yes	164.5	14.4	741	162.4	13.3	95
At-Risk	No	*	*	*	*	*	*
	Yes	164.5	14.4	747	162.8	13.5	101

Note. * Denotes fewer than 5 students, and were not reported.

Table 5. Mean Standard Scores on the 2017–2018 Logramos Mathematics Subtest by Head Start Class Models

Dually-Enrolled					Standalone		
Student Group		Mean	SD	n	Mean	SD	n
Overall Sample		159.4	15.1	762	156.8	13.1	102
Gender	Female	159.8	13.9	369	156.1	11.7	55
	Male	159.0	16.1	393	157.5	14.7	47
Economically disadvantaged	No	161.5	16.4	58	155.2	10.0	9
	Yes	159.2	14.9	704	156.9	13.4	93
Special Education	No	159.7	15.1	743	157.0	13.0	96
	Yes	148.0	8.3	19	153.0	16.4	6
Limited English Proficient (LEP)	No	163.1	10.3	7	160.7	16.8	6
	Yes	159.3	15.1	755	156.5	12.9	96
At-Risk	No	*	*	*	*	*	*
	Yes	159.4	15.1	761	156.8	13.1	102

Note. * Denotes fewer than 5 students, and were not reported.

Appendix B

Table 1. 2017–2018 Demographic Characteristics of HISD Kindergarten Students by Head Start Agency

		AVANCE (n = 184)		Baker Ripley (n = 832)		GCCSA (n = 611)		HCDE (n = 181)	
Student Group		n	%	n	%	n	%	n	%
Gender	Female	99	53.8	408	49.0	288	47.1	89	49.2
	Male	85	46.2	424	51.0	323	52.9	92	50.8
Ethnicity	Asian	1	0.5	20	2.4	1	0.2	0	0
	African-American	27	14.7	155	18.6	201	32.9	76	42.0
	Hispanic	155	84.2	631	75.8	401	65.6	103	56.9
	White	0	0	23	2.8	7	1.1	1	0.6
	Other	1	0.5	3	0.4	1	0.2	1	0.6
Economically-Disadvantaged	No	16	8.7	60	7.2	50	8.2	10	5.5
	Yes	168	91.3	772	92.8	561	91.8	171	94.5
Special Education	No	177	96.2	807	97.0	577	94.4	175	96.7
	Yes	7	3.8	25	3.0	34	5.6	6	3.3
Limited English Proficient (LEP)	No	97	52.7	253	30.4	315	51.6	119	65.7
	Yes	87	47.3	579	69.6	296	48.4	62	34.3
At-Risk	No	3	1.6	30	3.6	34	5.6	17	9.4
	Yes	181	98.4	802	96.4	577	94.4	164	90.6

Note. 1. The demographic information used in this table was based on student information at the time that the student enrolled in kindergarten in 2017–2018.

Table 2. HISD Kindergarten Student Performance on the 2017–2018 Kindergarten Iowa ELA Subtest By Head Start Agency

		AVANCE			Baker Ripley			GCCSA			HCDE		
Student Group		Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n
Overall Sample		122.7	6.0	111	121.9	6.5	334	123.4	7.3	324	123.6	6.8	115
Gender	Female	123.6	5.7	58	122.6	6.1	163	124.1	7.4	156	123.2	6.9	59
	Male	121.7	6.3	53	121.1	6.8	171	122.7	7.2	168	124.0	6.6	56
Ethnicity	Asian	*	*	*	118.7	7.4	20	*	*	*	*	*	*
	African American	123.7	7.2	24	122.2	6.4	152	124.0	7.5	184	124.4	7.4	72
	Hispanic	122.5	5.7	85	121.9	6.3	144	122.2	6.6	131	122.0	5.3	42
	White	*	*	*	122.9	7.5	17	126.4	8.7	7	*	*	*
	Other	*	*	*	*	*	*	*	*	*	*	*	*
Economically-Disadvantaged	No	124.2	6.5	11	121.8	6.4	28	124.3	8.3	19	119.8	5.1	6
	Yes	122.5	6.0	100	121.9	6.5	306	123.3	7.2	305	123.8	6.8	109
Special Education	No	122.7	6.0	106	122.0	6.4	323	123.6	7.2	302	121.0	7.9	116
	Yes	123.4	7.4	5	117.5	6.7	11	119.5	7.5	22	*	*	*
Limited English Proficient (LEP)	No	123.4	5.7	92	122.6	6.4	243	123.8	7.3	289	123.7	6.9	109
	Yes	119.1	6.3	19	120.0	6.3	91	119.4	5.5	35	121.5	2.5	6
At-Risk	No	*	*	*	120.1	4.2	28	122.2	6.5	32	121.6	5.9	16
	Yes	122.9	6.0	108	122.0	6.6	306	123.5	7.4	292	123.9	6.9	99

Note. * Denotes fewer than 5 students, and were not reported.

Table 3. HISD Kindergarten Student Performance on the 2017–2018 Kindergarten Iowa Mathematics Subtest By Head Start Agency

		AVANCE			Baker Ripley			GCCSA			HCDE		
Student Group		Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n
Overall Sample		120.7	8.3	113	121.0	8.8	333	122.2	9.8	338	120.8	8.0	118
Gender	Female	120.6	8.0	60	121.9	8.4	161	123.1	9.9	160	120.2	8.3	62
	Male	120.8	8.8	53	120.1	9.0	172	121.4	9.6	178	121.4	7.6	56
Ethnicity	Asian	*	*	*	117.7	9.9	20	*	*	*	*	*	*
	African American	119.6	10.5	26	120.5	8.8	150	122.2	10.0	194	121.5	8.0	72
	Hispanic	121.0	7.6	85	121.5	8.4	144	121.8	9.2	135	119.7	8.1	45
	White	*	*	*	124.1	9.7	18	124.6	8.5	7	*	*	*
	Other	*	*	*	*	*	*	*	*	*	*	*	*
Economically-Disadvantaged	No	122.7	6.4	11	120.9	7.8	29	127.6	12.4	19	118.7	5.1	6
	Yes	120.4	8.5	102	121.0	8.9	304	121.9	9.5	319	120.9	8.1	112
Special Education	No	120.6	8.3	108	121.1	8.8	322	122.5	9.5	316	121.0	7.9	116
	Yes	122.8	10.1	5	116.6	8.3	11	118.1	12.5	22	*	*	*
Limited English Proficient (LEP)	No	121.4	8.1	94	121.8	8.4	241	122.7	9.8	300	120.7	8.1	112
	Yes	116.9	8.8	19	118.8	9.4	92	118.3	8.3	38	121.8	5.1	6
At-Risk	No	*	*	*	117.2	7.5	29	117.0	8.1	33	116.6	6.5	17
	Yes	120.8	8.3	110	121.3	8.8	304	122.7	9.8	305	121.5	8.0	101

Note. * Denotes fewer than 5 students, and were not reported.

Table 4. HISD Kindergarten Student Performance on the 2017–2018 Kindergarten Logramos LA Subtest By Head Start Agency

AVANCE				Baker Ripley			GCCSA			HCDE			
Student Group		Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n
Overall Sample		161.2	12.7	70	165.8	14.8	468	163.5	13.8	255	159.5	12.0	56
Gender	Female	163.1	12.0	38	167.3	14.3	238	163.9	13.9	120	156.9	11.3	25
	Male	158.9	13.3	32	164.2	15.1	230	163.1	13.8	135	161.6	12.3	31
Economically-Disadvantaged	No	153.4	14.5	5	165.6	17.6	29	164.0	15.4	30	*	*	*
	Yes	161.8	12.5	65	165.8	14.6	439	163.4	13.6	225	159.3	12.2	52
Special Education	No	161.3	12.9	68	166.2	14.7	457	163.9	13.8	247	159.9	12.1	53
	Yes	*	*	*	151.8	9.8	11	151.5	8.5	8	*	*	*
Limited English Proficient (LEP)	No	*	*	*	*	*	*	168.7	13.3	6	*	*	*
	Yes	160.8	12.7	68	165.8	14.7	464	163.3	13.9	249	159.3	12.0	55
At-Risk	No	*	*	*	*	*	*	*	*	*	*	*	*
	Yes	161.2	12.7	70	165.8	14.8	468	163.5	13.8	254	159.5	12.0	56

Note. * Denotes fewer than 5 students, and were not reported.

Table 5. HISD Kindergarten Student Performance on the 2017–2018 Kindergarten Logramos Mathematics Subtest By Head Start Agency

		AVANCE			Baker Ripley			GCCSA			HCDE		
Student Group		Mean	SD	n	Mean	SD	n	Mean	SD	n	Mean	SD	n
Overall Sample		155.9	13.0	70	159.2	14.7	477	160.4	15.2	260	156.0	16.1	57
Gender	Female	156.9	11.8	38	159.9	13.8	239	160.2	14.2	122	152.8	10.3	25
	Male	154.8	14.4	32	158.4	15.5	238	160.5	16.1	138	158.5	19.2	32
Economically-Disadvantaged	No	157.4	4.2	5	160.1	20.1	29	162.4	12.2	29	*	*	*
	Yes	155.8	13.4	65	159.1	14.3	448	160.1	15.5	231	156.0	16.2	53
Special Education	No	156.3	12.9	68	159.3	14.7	465	160.7	15.3	252	157.0	15.9	54
	Yes	*	*	*	152.9	12.3	12	149.4	6.5	8	*	*	*
Limited English Proficient (LEP)	No	*	*	*	*	*	*	163.3	11.2	6	*	*	*
	Yes	155.7	13.1	68	159.2	14.7	473	160.3	15.3	254	155.9	16.2	56
At-Risk	No	*	*	*	*	*	*	*	*	*	*	*	*
	Yes	155.9	13.0	70	159.2	14.7	477	160.5	15.2	259	156.0	16.1	57

Note. * Denotes fewer than 5 students, and were not reported.

Appendix C

Table 1. AVANCE Program Description for Students Who Were Enrolled in 2016–2017

	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 1,873 of which 540 are served by its delegate agency. 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	72
	Number of assistant teachers	50
	Number of collaborating teachers	54
Teacher's average education level (Head Start only)	Lead teachers	Bachelor's degree
	Assistant teachers	High School with Child Development Associate (CDA)
	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 1 st 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 1 st . Families are pre-screened and then required to provide documented proof of eligibility.	
Services Provided	<p>AVANCE Houston, Inc. offers a variety of services to the community which includes Head Start/ Early Head Start programs, Parent and Child (Parenting), Healthy Marriage classes, Adult Education (GED & ESL), and workforce training classes.</p> <p>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</p>	

	<p>program designed to support pregnant women and the development of infant and toddlers.</p>
<p>Program benefit to kids/parents/community</p>	<p>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 to families and open to its surrounding communities.</p> <p>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.</p> <p>Head Start recognizes that parents 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.</p>
<p>Challenges</p>	<p>Over the past decade, the population in AVANCE's service area has grown rapidly, accounting for 75% 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.</p> <p>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.</p>

	<p>AVANCE's services are designed to support parents' attainment of education and employment. Approximately, thirty six (36%) of Head Start parents have less than high school education. At least 73% 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.</p>
Funding Source	<p>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.</p>
Curriculum	<p>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. AVANCE-Houston, Inc. also utilizes the Creative Curriculum Study Starters and Conscious Discipline programs as supplements.</p>
Assessment	<p>AVANCE utilizes CIRCLE assessment 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.</p>

Source: Provided by AVANCE

Table 2. Gulf Coast Community Services Association (GCCSA) Head Start Agency Program Description for Students Who Were Enrolled in 2016–2017

	Description	
Overview	<p>For more than five decades, Gulf Coast Community Services Association, Inc. (GCCSA) has been on the front lines of the battlefield to reduce poverty and build economic independence in Harris County.</p> <p>GCCSA administers diverse services and programs designed to eliminate the restraints of poverty and empower individuals and families on their road to economic independence. GCCSA's programs and services: assist families in earning a living wage, individuals in the advancement of their education, and communities in gaining economic security.</p> <p>During its rich 50-year history, GCCSA has administered hundreds of millions of dollars in public funding, serving over half a million under-served individuals in Harris County. As a result, GCCSA has established itself as one of the most experienced community service providers in the gulf coast region and the largest Community Action Agency in the state of Texas.</p> <p>Mission Statement: The Gulf Coast Community Services Association, Inc. engages partners and forges strategic alliances to educate, equip and empower individuals and families in their pursuit of economic independence.</p>	
Service region	GCCSA currently serves over 2,000 children and families in the Southeast Sector of Harris County including the cities of Houston and Pasadena. We operate a total of 1 Early Head Start Center and 20 Head Start Centers, serving as either stand-alone centers or sites that operate in collaboration with local educational partnerships including the Houston Independent School District.	
Average Annual Enrollment	1864 Head Start children & 72 Early Head Start children	
Total number of teachers	Number of lead teachers	100 HS Teachers and 18 EHS Teachers: 78 HS Teachers in HISD/YL Partnerships
	Number of assistant teachers	69 HS TAs: 52 HS TAs in HISD/YL Partnerships
	Number of collaborating teachers	47.5 Collaborating HISD/YL Teachers
Teacher's average education level	Lead teachers	18% Associates, 77% Bachelors, 5% Masters
	Assistant teachers	68% CDA, 19% Associates
	Collaborating teachers	100% Bachelors
Total number of centers	20 HS Centers and 1 EHS Center 15 HS Centers Collaborating with HISD/YL	

Service Eligibility	GCCSA's Head Start Program supports a foundation for healthy development and family well-being, as well as full day learning for preschool-aged children ages 3-5 years old from low-income families. Our Early Head Start Program welcomes pregnant women and children from birth to age 3, from economically-challenged families. We serve children and families, who are at risk and reside in the HS/EHS service areas including children who are economically disadvantaged, receive public assistance (e.g. TANF, SSI), are in foster care, and/or are homeless.
Services Provided	<p>The GCCSA Head Start/ Early Head Start Program (HS/EHS) is a comprehensive, early childhood development program.</p> <p>We endeavor to provide high quality early education to all our enrolled children. We work with partner schools to ensure that our early learners are school-ready. Our HS/EHS Program equips all our children with services such as quality early education, family involvement, health services (i.e. medical, dental and vision exams), family literacy, fatherhood initiatives, mental health and disability, and nutrition. Head Start program options include full day of learning, five (5) days a week following the Houston Independent School District calendar.</p>
Program benefit to kids/parents/community	<p>GCCSA program participants benefit from a wide range of program services provided by the agency. In Head Start and Early Head Start, we believe that parents are the first and most important educators of their children. Head Start provides a variety of Parent Involvement activities and services to enhance parenting skills and education. Parents are also involved in parent committees and elect their peers to serve on the Policy Council to participate in shared decision-making about the HS/EHS program. Fathers benefit from their participation in the Fatherhood Program.</p> <p>The community benefits from the following programs offered by GCCSA Community Services:</p> <ul style="list-style-type: none"> • Adult Literacy and Education – General Equivalency Diploma (GED) and Adult Basic Education (ABE) courses, Vocational & Technology Development tracks, continuing education and vocational training scholarships. • Case Management – Needs Assessment, Financial Coaching & Budgeting, Financial Assistance towards rent and electricity. • Food Pantry
Challenges	<p>Education and/or Job Training: Parents reported that 1) finding quality and affordable education for their children from birth through 5 years of age and 2) finding educational programs to help them learn a trade or profession, to create resume and learn interview skills were their greatest education needs. This information was strongly demonstrated through the 2013-2014 parent survey and community assessment update.</p>
Funding Source	Administration for Children and Families / HHS

Curriculum	GCCSA Head Start teachers and assistant teachers implement Frog Street. Pre-K curriculum including the use of Conscious Discipline strategies in partnership with Collaborating HISD and YL teachers. Frog Street Pre-K. GCCSA Head Start teachers and assistant teachers also work in partnership with Collaborating HISD and YL teachers to provide bilingual, dual language and ESL instruction for English Language Learners. At House of Tiny Treasures Partnership with YL and SEARCH, GCCSA Head Start teachers and assistant teachers implement the Regio Emilia curriculum approach including the use of Conscious Discipline strategies.
Assessment	LAP-3 (Learning Accomplishment Profile – 3 rd Revision)

Source: Provided by GCCSA

Table 3. Harris County Department of Education (HCDE) Program Description for Students Who Were Enrolled in 2016–2017

	Description	
Service region	HCDE serves Head Start Area I with Head Start services in the eastern half of Harris County. The service area includes the communities in between Highway 59, Interstate 10, and Interstate 45 South. Area I includes the cities of Baytown, Crosby, Deer Park, Humble, Houston, and La Porte. The region covers 788 square miles of land area, which represents 35% of the county's land (U.S. Census Bureau, 2010).	
Average Annual Enrollment	1,230 Head Start 100 Early Head Start/Child Care Partnerships	
Total number of teachers	Number of lead teachers	67 Head Start teachers 10 Early Head Start teachers
	Number of assistant teachers	79
	Number of collaborating teachers	17
Teacher's average education level	Lead teachers	Associate's Degree
	Assistant teachers	Child Development Associate (CDA) Credential
	Collaborating teachers	Bachelor's Degree
Total number of centers	15 Head Start Locations, 1 Early Head Start location and 7 Child Care Partnership locations	
Service Eligibility	Must be 3 years old by September 1 Live in the HCDE Head Start service delivery area Meet federal poverty 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	One third of our parents struggle with lack of employment opportunities. 43% of the 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.
Assessment	<ul style="list-style-type: none"> • Children's Learning Institute Engage Assessment • Observations • Portfolio Collection

Source: Provided by HCDE

Table 4. Baker Ripley (Neighborhood Centers, Inc. (NCI)) Head Start Program Description for Students Who Were Enrolled in 2016–2017		
	Description	
Total number of teachers	Number of lead teachers	183
	Number of assistant teachers	61
	Number of collaborating teachers	50 (HISD)
Teacher's average education level	Lead teachers	Bachelor & Highly Qualified Certified- 92
	Assistant teachers	Mix between Bachelor's Degree and Child Development Associate (CDA).
	Collaborating teachers	Bachelor- 50
Total number of centers	9 Centers, 10 Collaboration sites with HISD, 1 Day care, including 1 Head Start Home Program 3 Child Care Partnership/Expansion Grant	
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 1 st 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 1 st . 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.	
Program benefit to kids/parents/community	<p>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 betterment.</p> <p>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. The 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.</p>	

Challenges	<p>Most of our parents struggle with lack of employment opportunities, underemployment, and language barriers. The families we serve often discuss immigration status or a lack of education which creates barriers to getting a respectable job.</p> <p>Access to affordable healthcare is an issue for many of our families in southwest Harris County.</p> <p>Over the past several years, Neighborhood Centers has experienced a rise in the number of immigrant and refugee families seeking services. Only 32% of Neighborhood Centers' Head Start families reported English as their primary language, while more than 60% reported Spanish. Acquiring English language skills, while maintaining home language and culture, poses a special challenge for many of the area's families. Services are tailored to each family's needs. Cultural differences are celebrated in our program, To address this need, our Family Development Workers work closely with each family to better identify services that will assist them in reaching their goals.</p>
Funding Source	<p>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.</p>
Curriculum	<p>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."</p>

Assessment	<p>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.</p> <p>To ensure 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.</p> <p>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. Teams are formed to conduct comprehensive reviews of all content areas of compliance including the following: health services; nutrition services; safe environments; disabilities services; mental health services; family and community; 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 reviews, 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.</p>
------------	--

Source: Provided by Baker Ripley