Kindergarten Success Fact Book

Baltimore City Schools Kindergarten Classes of 2014–15 to 2019–20

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CONTENTS

EXECUTIVE SUMMARY

This report provides an overview of kindergarten readiness of six Baltimore City Public Schools (City Schools) kindergarten cohorts from the 2014–15 to the 2019–20 school year. This report is accompanied by the *Digest of City Schools Kindergarten Statistics, 2022 Edition* (Baltimore Education Research Consortium [BERC], 2022), which provides detailed summary tables and descriptive statistics on kindergarten readiness and outcomes over time and is the source data for the visualization and interpretation found in this report. By understanding children's kindergarten experiences, we hope that the stakeholders can collectively identify needs and opportunities for early childhood services and programming for our youngest children and their families.

Early childhood is a complex developmental period, and descriptions of children's kindergarten readiness through the use of only one measure can be difficult. While the core of this report provides descriptive aggregate statistics on children's measured performance on the Maryland State Department of Education's Kindergarten Readiness Assessment (KRA), we also provide a *multi-dimensional* understanding of kindergarten readiness and outcomes by including an examination of kindergarten attendance and early literacy skill development as measured on the Dynamic Indicators of Basic Early Literacy Skills (DIBELS). We acknowledge that these are not the only ways to measure or represent successful kindergarten experiences. However, we hope that the analyses in this report help researchers, practitioners, and policymakers use various indicators in exploring children's kindergarten success.

To better understand differences across students, we examine these kindergarten indicators by gender, race and ethnicity, English language learner (ELL) status, and special education status. We also examine kindergarten indicators by children's prior-care status as reported by parents and through cross-linked records of enrollment in City Schools pre-kindergarten (PreK) programs.

We also explore the relationships between kindergarten indicators and 3rd grade outcomes for the two earliest cohorts of kindergartners in this report (2014–15 and 2015–16). These outcomes include performance on the Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts and Mathematics tests, which was the Maryland state accountability test for these students. Examining these relationships is important as the early elementary experiences of students forms the academic foundation for their trajectories through schools and schooling. Further, these early elementary experiences are conditioned on being kindergarten ready to benefit from the opportunities that schools provide.

The highlights from this report include:

- **The proportion of children entering City Schools demonstrating kindergarten readiness has remained essentially unchanged over the last five years.** On average, less than 40–50% of children assessed on the KRA were categorized as demonstrating readiness. The proportion of children entering City Schools at the emerging, or lowest, level on the KRA has been between 18% and 29%.
- **Approximately a third of students are chronically absent from school during the kindergarten year, and this rate is consistent in all years we examined.** Chronic absenteeism is defined as being absent for 10% or more of the total days the student is enrolled in school.
- **Kindergarten success indicators are strongly interrelated.** Students who begin kindergarten demonstrating readiness are consistently much less likely to be chronically absent at the end of the year compared to their peers who are not demonstrating readiness at the beginning of kindergarten. Students who are not chronically absent in kindergarten meet or exceed DIBELS early literacy benchmarks at the beginning, middle, and end of the kindergarten year at higher proportions compared to their peers who are chronically absent from school. In addition, students who demonstrate readiness on the KRA are more likely to meet or exceed DIBELS early literacy benchmarks throughout the kindergarten year compared to those who have approaching or emerging on the KRA.
- **There are consistent subgroup disparities across all kindergarten success indicators we examined.** In the subgroup analyses of KRA, kindergarten attendance, and DIBELS, we found consistent disparities across different groups of children by gender, race and ethnicity, ELL status, and special education status. More targeted supports are needed for children and families to ensure that every child is successful in this important period of development.
- **Students who utilized formal early care and education programs prior to entering kindergarten performed better on all kindergarten indicators compared to their peers who stayed at home or used informal care. However, significant discrepancies existed between the parent-reported prior-care data and the actual PreK enrollment data. This indicates that parent-reported prior-care information is not the most valid data in understanding children's prior-care experiences.** We encourage the use of administrative enrollment data to better understand children's early care and education experiences from birth to age 5. In addition, resources for parents are needed to help them better understand the availability of early childhood services and programming as well as the eligibility of financial assistance for early care and education programming.
- **Demonstrating readiness on the KRA and high kindergarten attendance are related to better 3rd grade PARCC literacy and mathematics outcomes.** Our findings highlight the importance of preparing children early in their life. Further, more efforts are needed to explore the reasons behind children's chronic absenteeism and variability in KRA scores.

INTRODUCTION

The Baltimore Education Research Consortium (BERC) conducts data analysis and research to address questions of critical importance to research and practice and for the benefit of the children and families of Baltimore City. To this end, our work is engaged in the long-term understanding of students' success and lifetime developmental trajectories. Young children's early childhood experiences set their future developmental trajectories (Duncan et al. 2007). Recognizing that when students start well, they are more likely to be set up for a successful future, BERC is committed to providing research and analytics that enable stakeholders to better understand kindergarten readiness and success. This report represents the first of what will become an annual BERC report that examines kindergarten experiences in Baltimore City Public Schools (City Schools).

This report describes the experiences of kindergartners who were enrolled in City Schools from the 2014–15 to 2019–20 school years. We use multiple indicators of kindergarten readiness and outcomes, including the Kindergarten Readiness Assessment (KRA), kindergarten attendance, and the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) assessment. We analyze the data trends over time to understand children's kindergarten experiences in City Schools over the last six years. In addition, we examine to what extent children's kindergarten experiences are related to their 3rd grade outcomes, measured by the Partnership for Assessment of Readiness for College and Careers (PARCC) English Language Arts (ELA) and Mathematics (Math) assessments.

We used data from the *Digest of City Schools Kindergarten Statistics (BERC 2022)*. These data included students who were enrolled in kindergarten in City Schools for at least 10 days in a given school year. In accordance with City Schools reporting requirements, table cell values are masked to protect student privacy. For groups and subgroups with 20 or fewer students, the count of students and all outcome percentages are completely suppressed. For groups and subgroups with 200 or fewer students, only the count of students is suppressed and outcome percentages are banded to prevent the recovery of a percentage that is 5% or less. Finally, we also rounded up all counts to the nearest hundred to prevent the recovery of suppressed counts among subgroups where the group total is reported.


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PART 1.

DATA OVERVIEW, KINDERGARTEN CLASSES OF 2014–15 TO 2019–20

Part 1 uses data from Tables 1, 2, and 4 in the BERC's *Digest of City Schools Kindergarten Statistics, 2022 Edition* (Digest).

KINDERGARTEN READINESS ASSESSMENT. The KRA was first administered in Maryland in 2014 (KRA 1.0[1]) and has been further developed and refined over time (KRA 1.5 2015 to 2017;[2] KRA 2.0 2018 to present[3]). Compared to KRA 1.0, KRA 1.5 reduced the number of items as well as the number of domains from six to four (Language & Literacy, Mathematics, Physical Well-being & Motor Development, and Social Foundations). In KRA 2.0., the scoring rules were improved to account for different scenarios such as "Complete," "Complete with NS (Not Scorable)," "Some items were not complete," and "All items were not complete." In addition, field support guidelines are provided for English language learners (ELLs) and children with disabilities in KRA 2.0. Across all years, using a composite score of the four domains, kindergarten-readiness levels are categorized into: (a) *demonstrating* readiness, indicating that a child demonstrates readiness; (b) *approaching* readiness, indicating that a child exhibits some readiness; and (c) *emerging* readiness, indicating that a child displays minimal readiness.[4]

1 *Ready for Kindergarten: Kindergarten Readiness Assessment Technical Report*, prepared for the Maryland State Department of Education and the Ohio Department of Education by WestEd, Fall 2014, https://education.ohio.gov/getattachment/Topics/Early-Learning/Kindergarten/Ohios-Kindergarten-Readiness-Assessment/Kindergarten-Readiness-Assessment-for-Data-Manager/KRA_Technical_Report_2014_Final.pdf.aspx.

2 *Ready for Kindergarten: Kindergarten Readiness Assessment Technical Report Addendum*, prepared for the Maryland State Department of Education and the Ohio Department of Education by WestEd, Fall 2015, https://ed.sc.gov/tests/tests-files/pre-k-and-kindergarten-readiness-assessments/kra-technical-report-2015/.

3 Johns Hopkins School of Education Center for Technology in Education, *Maryland KRA Scoring: Scoring Rules for KRA 2.0, Ready for Kindergarten,* https://pd.kready.org/data/ck/sites/116/files/MD%20KRA%2020%20Scoring.pdf.

4 "Kindergarten Readiness Assessment (KRA)," Ready for Kindergarten, https://pd.kready.org/105956.

Given the evolution of the KRA over time, direct year-to-year comparisons are difficult, and readers should exercise caution. In the analyses that follow, we indicated versions to ensure that yearly comparisons are made with caution. As shown in Figure 1, **about 34% to 46% of kindergartners demonstrated readiness over the last six years** (2014–15 to 2019–20 school years). In addition, about one-third of children were approaching kindergarten readiness and about a quarter of children were in the emerging category. Figure 2 shows the domain average scores for the 2019–20 school year. Although the differences between the four domains are not large, students received higher scores on the Social Foundations and Physical Well-being & Motor Development domains compared to the Mathematics and Language & Literacy domains.

FIGURE 1. Baltimore City Kindergarten Readiness Assessment Trends

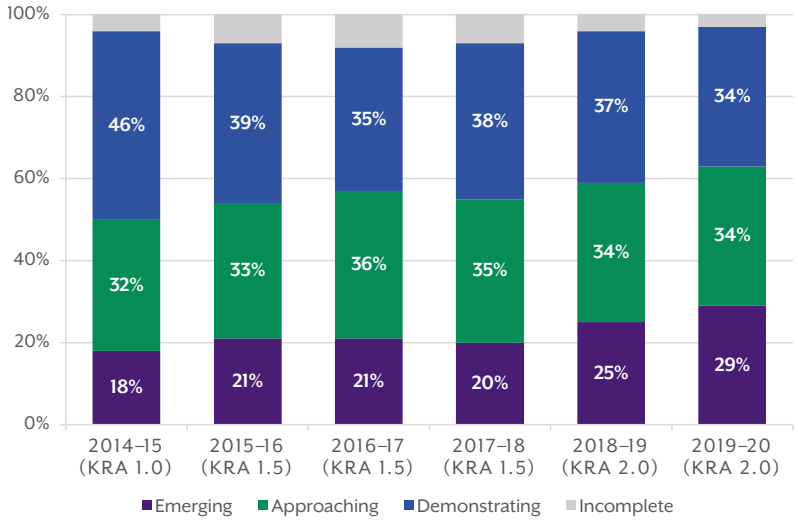
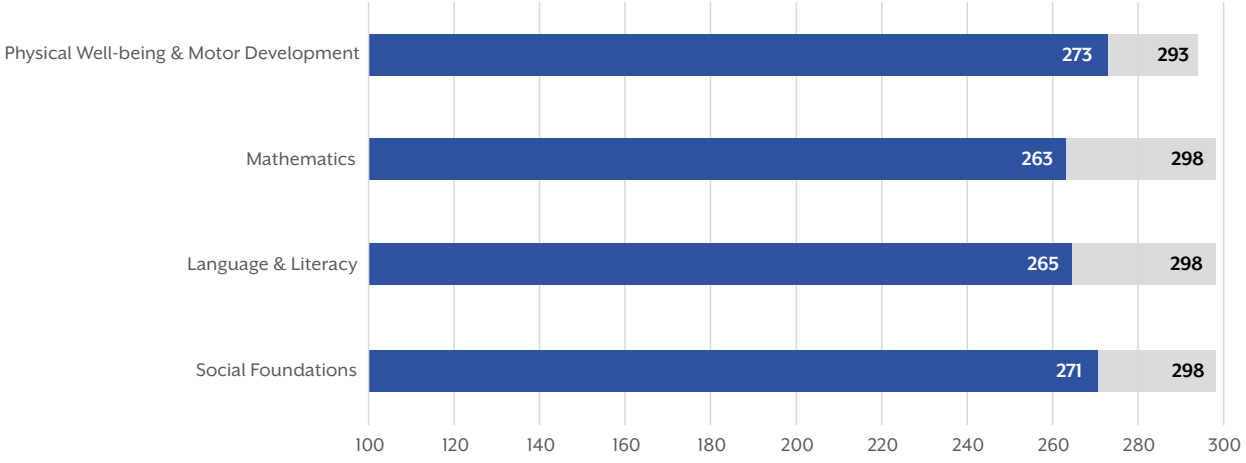
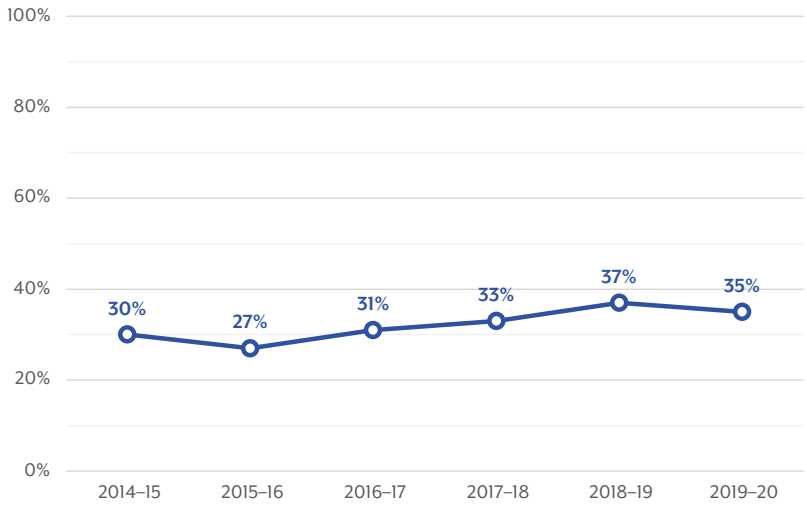


FIGURE 2. Kindergarten Readiness Assessment Domain Average Scale Scores, 2019–20



KINDERGARTEN ATTENDANCE. Using kindergarten attendance data, we examined children's chronic absenteeism. Chronic absence is defined as being absent for 10% or more of the total number of days enrolled during the school year. This definition was applied to all years of data. For the 2019–20 school year, chronic absence was calculated based on student attendance and enrollment prior to school closures related to the COVID-19 pandemic. We found that **27% to 37% of children were chronically absent in kindergarten from the 2014–15 to 2019–20 school years** (Figure 3).

FIGURE 3. **Kindergarten Chronic Absenteeism Trends Over Time**



Note. Chronic absence in 2019–20 was calculated based on student attendance and enrollment prior to school closures related to the COVID-19 pandemic.

DYNAMIC INDICATORS OF BASIC EARLY LITERACY SKILLS. DIBELS is designed to assess children's early literacy skills. In this report, we use the DIBELS composite score, a combination of multiple items designed to provide an overall estimate of students' reading proficiency. City Schools used the DIBELS Next version from the 2014–15 to 2018–19 school years and then switched to the DIBELS 8th version in the 2019–20 school year. If students score above the benchmark, it is likely that they achieve about 90% to 99% reading outcomes in the future years.[5]

It is important to note, however, that the benchmark goals change over time to capture children's developmentally appropriate growth. For example, in DIBELS Next, *only* First Sound Fluency is measured at the beginning of the year (BOY) in kindergarten for diagnostic purposes. Then, Phoneme Segmentation Fluency and Nonsense Word Fluency tests are added at the middle-of-the-year (MOY) and the end-of-the-year (EOY) assessments. In addition, the scoring criteria to meet the benchmark (i.e., cut points) increase over time to capture children's growth. This means that although it is still important for students to meet the benchmark at each time point, different literacy skillsets are measured across those time points.

5 *DIBELS Next®: Summary of Benchmark Goals and Cut Points for Risk,* https://www.nncsk12.org/site/handlers/filedownload.ashx?moduleinstanceid=6044&dataid=5471&FileName=DIBELSNextBenchmarkGoals-7.pdf.

TABLE 1. Dynamic Indicators of Basic Early Literacy Skills Trends Over Time

	DIBELS Versions	Above benchmark at BOY	Above benchmark at MOY	Above benchmark at EOY
2014–15	Next	54%	49%	52%
2015–16	Next	55%	48%	50%
2016–17	Next	53%	45%	47%
2017–18	Next	50%	42%	46%
2018–19	Next	45%	42%	45%
2019–20	8th Edition	35%	N/A	N/A

Note. DIBELS was not administered at the MOY or EOY window in 2019–20 due to school closures related to the COVID-19 pandemic.
BOY = beginning of year, MOY = middle of year, EOY = end of year

As shown in Table 1, between the 2014–15 and 2018–19 school years, about **45% to 55% of kindergartners were above benchmark at BOY** when DIBELS Next was administered. This indicates that about half of students were demonstrating letter-naming fluency at BOY. With the addition of the Phoneme Segmentation and Nonsense Word Fluency tests at MOY, student performance at the benchmark decreases slightly across all years. This is probably in part because students were still learning new literacy skills, which was reflected on the test. However, **at EOY, the performance improved from MOY with about 45% to 52% of students above the benchmark.**

Note that the BOY above-benchmark percentage significantly dropped to 35% in the 2019–20 school year when the DIBELS 8th version was administered. This likely occurred because the 8th version incorporated the Phoneme Segmentation and Nonsense Word Fluency tests as well as the Word Reading Fluency test at BOY.[6] DIBELS was not administered at MOY or EOY in the 2019–20 school year due to pandemic-related school closures.

6 *DIBELS® 8th Edition Benchmark Goals*, University of Oregon, July 2020, https://dibels.uoregon.edu/sites/dibels1.uoregon.edu/files/2021-06/DIBELS8thEditionGoals.pdf.

PART 2.

KINDERGARTEN READINESS AND OUTCOMES BY SUBGROUPS

Kindergarten Readiness Assessment

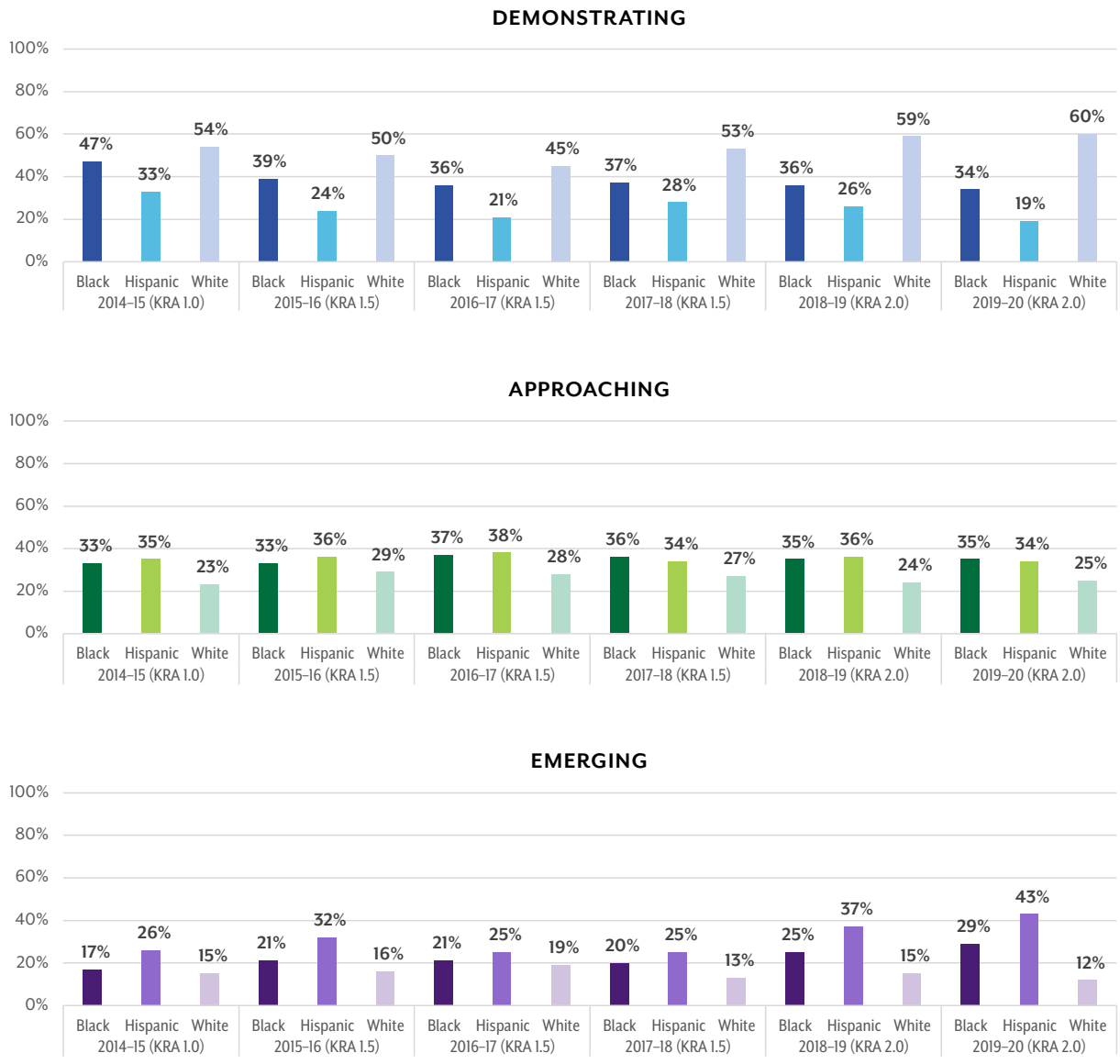
Table 1 in the Digest describes KRA data by various subgroups.

GENDER. Girls are more likely to be in the demonstrating group than boys (about 10% gap on average), and boys are more likely to be in the emerging group compared to girls (about 10% gap on average). The patterns persist over time. The distribution of the approaching group is similar between boys and girls. The findings are consistent with the literature showing that girls generally perform better than boys in kindergarten (Eriksson et al. 2012).

RACE/ETHNICITY AND ENGLISH LANGUAGE LEARNERS. Figure 4 provides the KRA data trends by race and ethnicity. Due to the small sample size of other races, we only included Black or African American (Black thereafter), Hispanic, and White/non-Hispanic (White thereafter) children in the figure. We also listed data from the largest group, Black (about 4,100 children in the 2019–20 school year), followed by Hispanic (about 900 children), and White (about 600 children). **The data show that White children are more likely to be in the demonstrating group (50–62%) than Black (36–47%) and Hispanic (20–33%) children.** While it is concerning that less than half of Black and Hispanic children demonstrate readiness at the beginning of kindergarten, this presents the opportunity to support them at the beginning of the school year. Expanding public early care and education programming and services for young children would provide substantial support for these students before they enter kindergarten. The numbers of children who are American Indian/Alaskan Native and Native Hawaiian/Pacific Islander have been too small to make meaningful conclusions about KRA performance.

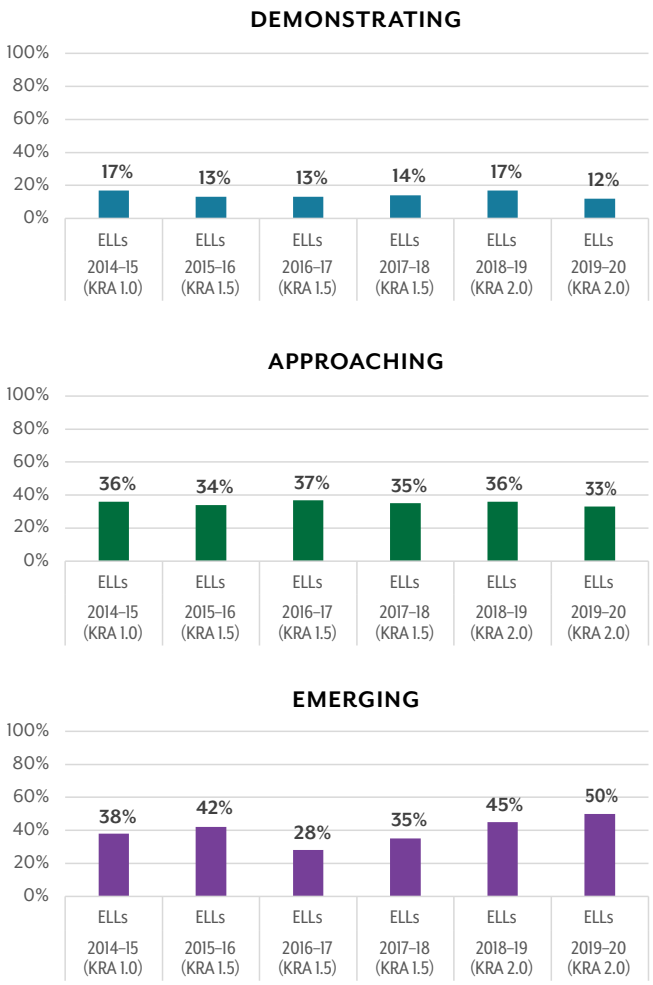
However, we find that in each annual cohort, except for the 2018–19 school year, Asian children were demonstrating readiness less than their White and/or Black peers (about 30% to 43% for Asian children). Students who identify as two or more races were frequently identified as demonstrating readiness.

FIGURE 4. **Baltimore City Kindergarten Readiness Assessment Trends by Race and Ethnicity**



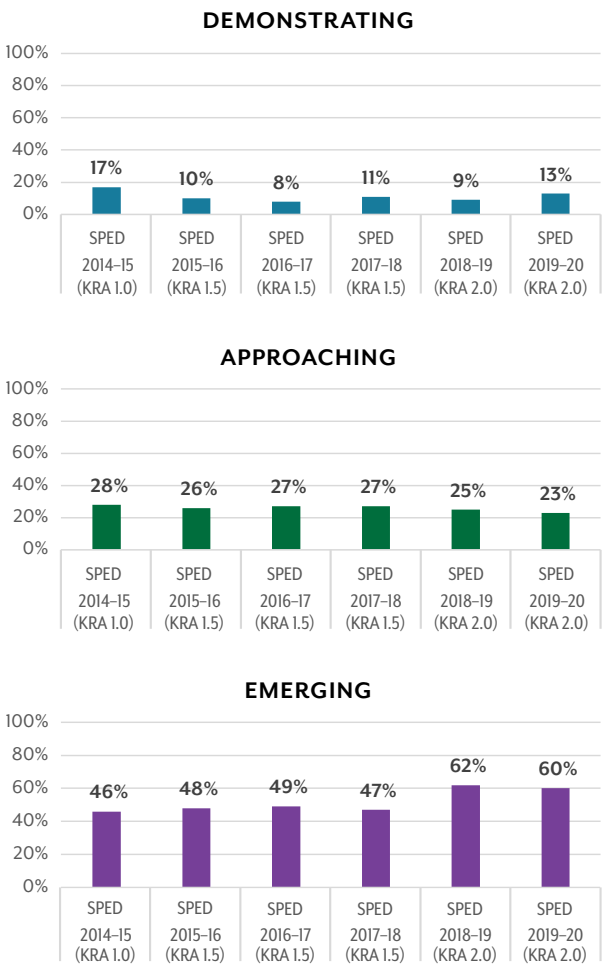
The percentages of children who fall into the approaching group were similar between Black and Hispanic children (about 35%); however, Hispanic children were more likely to be in the emerging group than other groups. In particular, **43% of Hispanic children were in the emerging group in the 2019–20 school year, which reveals an urgent need to provide adequate support for these children.** The data shows that about 75% of Hispanic children were ELLs in the 2019–20 school year. It is possible that Hispanic children do not show proficiency in KRA because KRA is *only* administered in English. The KRA results may not be a true reflection of their cognitive functioning and capacity. It is important to provide follow-up programming and to monitor progress for these children to ensure that every child has an opportunity to succeed in kindergarten. In fact, Figure 5 shows that **only 13% to 17% of ELLs demonstrate readiness.** About half of ELLs fell into the emerging category in the 2019–20 school year.

FIGURE 5. **Baltimore City Kindergarten Readiness Assessment Trends by English Language Learner Status**



SPECIAL EDUCATION. The analysis of KRA for students who had special education services (SPED) showed that 9% to 17% of children demonstrated readiness every year (Figure 6). Unfortunately, they were less likely to be in the approaching group compared to other subgroups and more likely to be in the emerging group. **In the last two years, more than 60% of children with SPED were in the emerging group.** We encourage programs to implement additional monitoring of the progress of children receiving SPED services.

FIGURE 6. Baltimore City Kindergarten Readiness Assessment Trends by Special Education Status



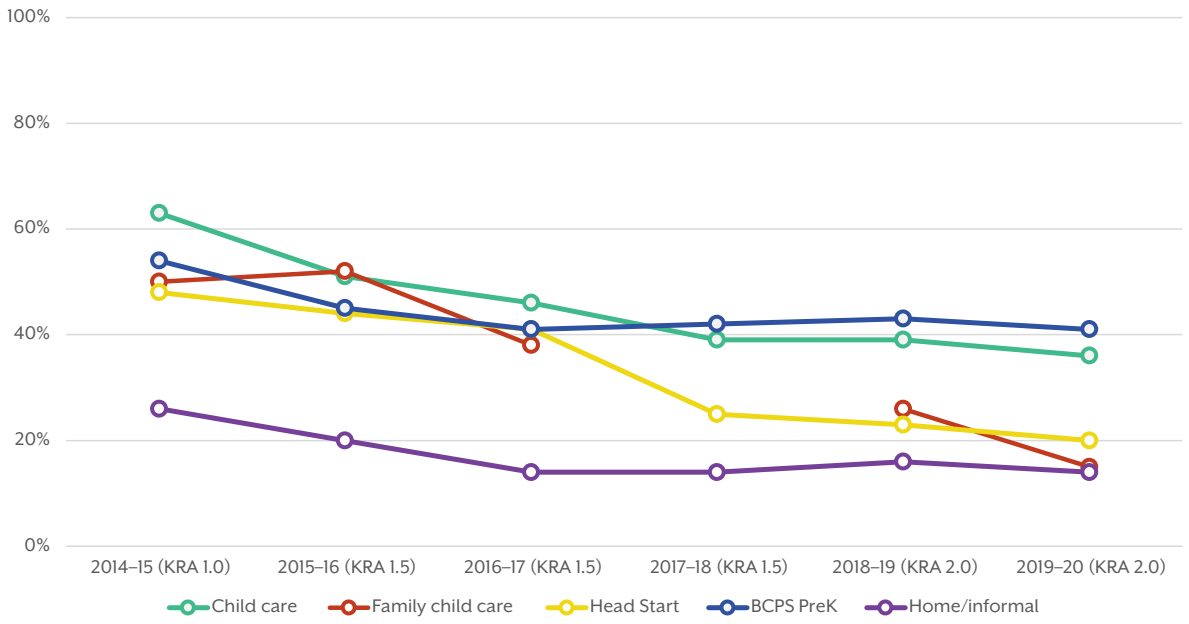
PRIOR CARE AND KINDERGARTEN REPETITION. We also examined KRA by prior-care settings. It is important to note that prior-care information is gathered by *parents' responses* during the kindergarten enrollment process. Table 1 in the Digest shows the distribution of parents' responses. In addition, we provide City Schools pre-kindergarten (PreK) enrollment data, which are retrieved from the BERC data archive. **The comparison of parent-reported data and official enrollment data revealed significant discrepancies.** For example, in the 2018–19 school year, only 300 parents of kindergartners reported that their child attended PreK in the prior year. However, using the actual enrollment data, we found that about 4,100 children attended PreK.

Although City Schools began to automatically fill in the prior-care information for those who attended PreK since the 2019–20 school year, the previous data discrepancies show **the need for establishing a more reliable administrative enrollment data archive across all early care and education sectors serving children from birth to age 5** (e.g., Head Start, Early Head Start, center-based private child care, family child care, etc.). This will help the city track children's prior-care attendance before they enter kindergarten. Furthermore, **the data discrepancies between parent reports and administrative data may reflect that parents are not fully aware of differences between early childhood services available in the city.** This may have implications for whether families can take advantage of benefits provided by their service providers and whether they feel comfortable with advocating for their needs as well as their children's needs in different settings. We suggest educating families throughout the early childhood years to ensure that they are informed of available services.

Despite the limitations of the parent-reported prior-care data, we still offer the KRA analysis by prior care in Figure 7 to provide a general understanding of children's early childhood experiences. Consistently over the six years, **children who did not use formal early care and education services (i.e., home/informal) least often demonstrated readiness** compared to other groups. This points to the importance of children's early care and education program attendance in earlier years.

The Digest also shows that there are children repeating kindergarten. Children who repeated kindergarten were less likely to demonstrate readiness compared to the district average in the repeating year. Although the number of children who repeat kindergarten is not large, it is important to pay attention to this group as kindergarten repetition has implications for their future outcomes (Burkam et al. 2007; Hong & Raudenbush 2005).

FIGURE 7. Kindergarten Readiness Assessment Demonstrating by Prior Care



Note. Parent-reported prior care was used. For BCPS PreK, we used the City Schools enrollment data to improve accuracy. The 2017–18 family child care data point is omitted to protect student privacy. Other prior care options in Digest Table 1 are omitted due to small cell sizes.

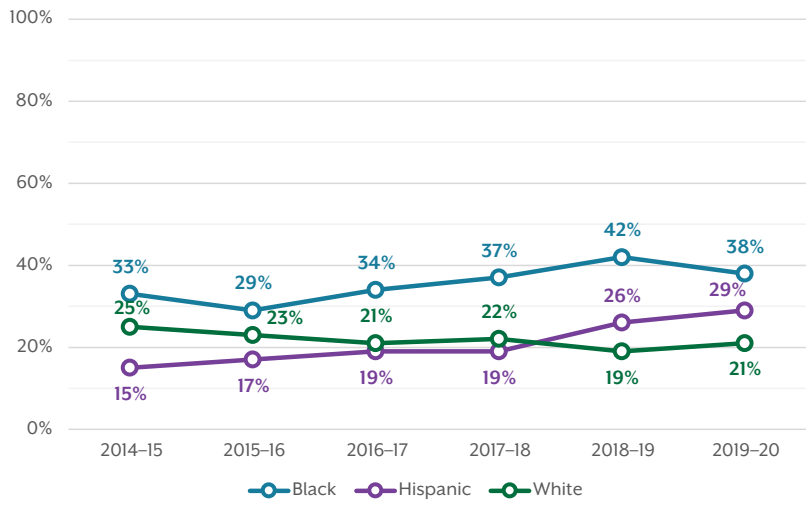
Kindergarten Chronic Absenteeism

Table 2 in the Digest displays data on chronic absenteeism (CA) analysis by subgroups. Note that there were no significant differences in CA between boys and girls.

RACE/ETHNICITY. We found disparities in CA between Black, Hispanic, and White children. As shown in Figure 8, **Black children were most likely to be chronically absent among the three groups (29–42%).** Given that more than one-third of Black children were chronically absent in the last four school years since the 2016–17 school year, it is critical to provide adequate support for children and families. Because children's early attendance is highly related to families' background and support (Black et al. 2014; Morrissey et al. 2014), evidenced-based interventions and/or prevention programs for families, such as the combinations of basic and intensified messaging for parents (Kurki et al. 2021), are much needed. Furthermore, future studies need to understand the reasons for absenteeism to find effective ways to prevent CA.

Another critical pattern we observe is that **CA of Hispanic children** is increasing over time. Although the CA rate was about 15–19% in 2015 through 2018, it increased about by 10 percentage points to 26–28% in the last two years. Given the growing population of Hispanic children in City Schools, it would be important to understand the nature of CA among this group and provide adequate support for children and families (e.g., access to transportation).

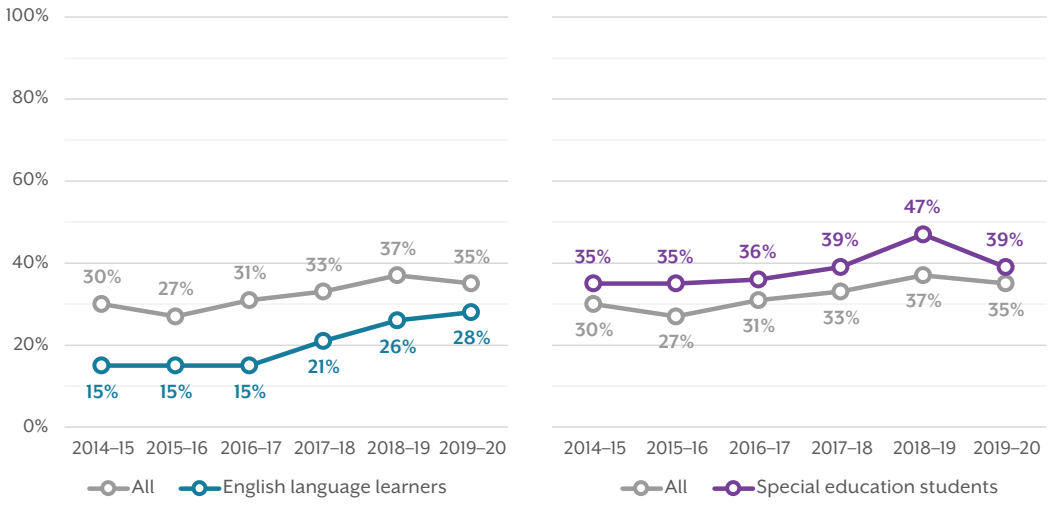
FIGURE 8. Kindergarten Chronic Absenteeism Trends by Race/Ethnicity



ENGLISH LANGUAGE LEARNERS. Similar to what we observe among children who are Hispanic or other races (e.g., Asian), ELLs have lower CA rates compared to the district average. However, we, observe that ELLs show higher percentages of CA in the last two to three years (Figure 9). Compared to 15% of CA in the 2014–15 school year, CA for ELLs was 26% in the 2019–20 school year. Although the CA rate for ELLs is still lower than the overall kindergarteners in City Schools, it is important to pay attention to an increased rate of CA.

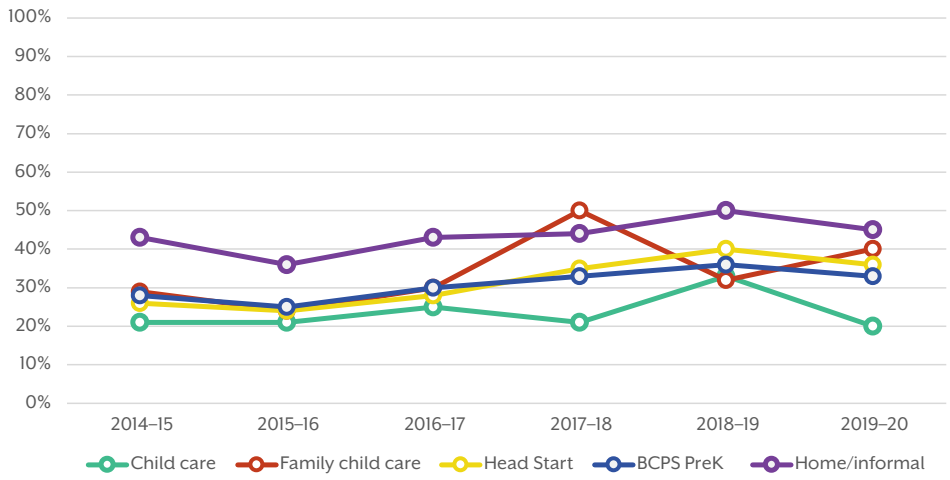
SPECIAL EDUCATION. Figure 9 shows CA of students with SPED services. About 35 to 47% of these children have CA every year, which is slightly higher than the City Schools' overall average. It is not clear, though, whether the students who were absent still utilized other intervention services outside of City Schools. Careful consideration should be given to find the best ways to support children with SPED. While there is evidence that students with disabilities, or those identified for special education, benefit academically (i.e., math and reading achievement) from spending more time in the kindergarten classroom, the evidence for academic, social skills, and behavioral functioning is mixed (Gottfried & Le 2016). Prior evidence shows that children with learning and communication disorders demonstrate greater academic achievement (i.e., math, reading) while children with physical impairments demonstrate less self-control and interpersonal skills when they attend formal programs (Gottfried & Le 2016). For students with communication- or learning-related disorders, participating in a formal education setting has been found to reduce absenteeism over time (Gottfried et al. 2020). Perhaps students with physical impairments experience fatigue with the duration of the school day, which could contribute to school absence. **Thus, it is important to consider that the effectiveness of school attendance may vary by the type and severity of children's disability (Gottfried & Le 2016) and to use this information to support student needs.**

FIGURE 9. Kindergarten Chronic Absenteeism Trends by Special Status



PRIOR CARE AND KINDERGARTEN REPETITION. As discussed above in the KRA section, although there are limitations of using parent-reported prior-care data, we examined CA by prior care to gain preliminary understanding of trends. We reiterate that future reports would benefit from using administrative enrollment data. Figure 10 shows consistent patterns with the KRA prior-care analysis: **Children who did not attend formal early care and education (i.e., home/informal) had a higher prevalence of CA in general over time compared to children who used formal early care and education.** Note that children who repeated kindergarten consistently had the highest CA compared to others in the repeating year.

FIGURE 10. Kindergarten Chronic Absenteeism Trends by Prior Care



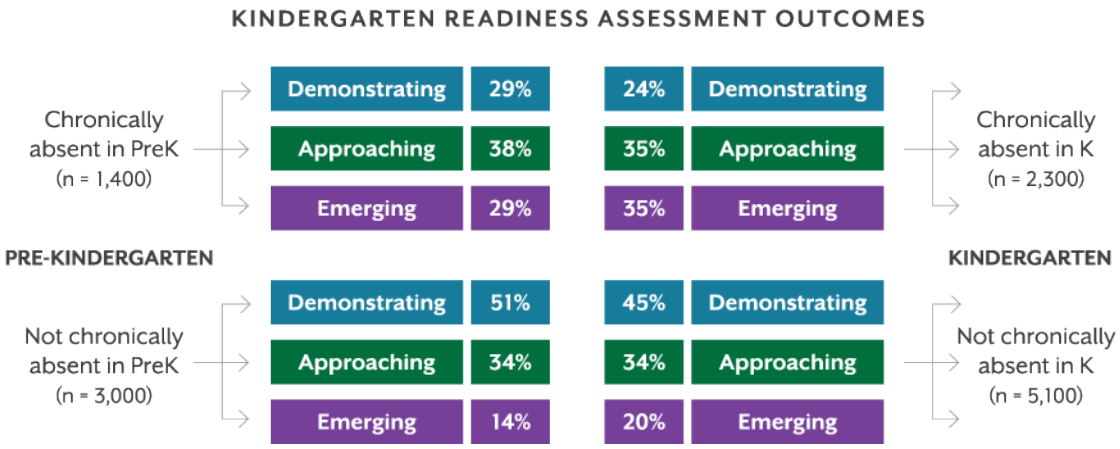
Note. Parent-reported prior care was used. For BCPS PreK, we used the City Schools enrollment data to improve accuracy. The 2017–18 family child-care data point is omitted to protect student privacy. Other prior care options in Digest Table 2 are omitted due to small cell sizes.

Relationships between the Kindergarten Readiness Assessment and Chronic Absenteeism

Table 3 in the Digest shows the relationships between KRA performance and children's CA in PreK and kindergarten. Among children who were chronically absent in PreK, 29% to 44% of children demonstrated kindergarten readiness, measured by KRA, whereas among children who were not chronically absent in PreK, 46% to 59% of children demonstrated kindergarten readiness. Furthermore, 24% to 34% of children who were chronically absent at the end of the kindergarten year were in the KRA demonstrating group at BOY. In contrast, 40% to 52% of children who were not chronically absent in kindergarten were in the KRA demonstrating group.

Figure 11 describes the patterns of the relationships between KRA and CA using the data from the 2018–19 school year. We chose the most recent data that are not affected by the COVID-19 pandemic. For children who were chronically absent in PreK, only 29% of them demonstrated readiness and 29% of them fell into the emerging category on KRA. On the other hand, for children who were not chronically absent in PreK, 51% of them demonstrated readiness on KRA. The figure also shows that among children who were chronically absent in kindergarten, 24% of them demonstrated readiness at the beginning of the kindergarten, whereas 45% of children who were not chronically absent in kindergarten demonstrated readiness.

FIGURE 11. **Relationships Between Kindergarten Readiness Assessment and Chronic Absenteeism, 2018–19**



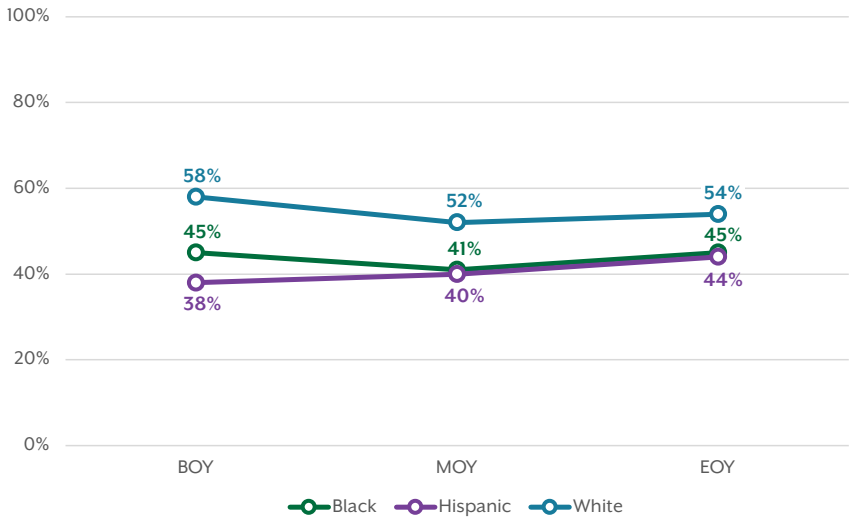
Dynamic Indicators of Basic Early Literacy Skills

Table 4 in the Digest shows the analysis of DIBELS by subgroups.[7]

GENDER. In general, boys performed at lower levels on DIBELS across all cohorts, which was aligned with the disparities in their KRA performance.

RACE/ETHNICITY. White children had better DIBELS outcomes (58% above benchmark) than Black (45% above benchmark) and Hispanic (38% above benchmark) children at BOY as shown in Figure 12. Note that we used the 2018–19 school year data to demonstrate the pattern. **Interestingly, at MOY and EOY, Hispanic children started to catch up and had similar outcomes as Black children. Black and Hispanic children were, however, still less likely to have above-benchmark outcomes compared to their White peers.**

FIGURE 12. **Percentage of Kindergartners Scored Above Dynamic Indicators of Basic Early Literacy Skills Benchmark by Race/Ethnicity, 2018–19**

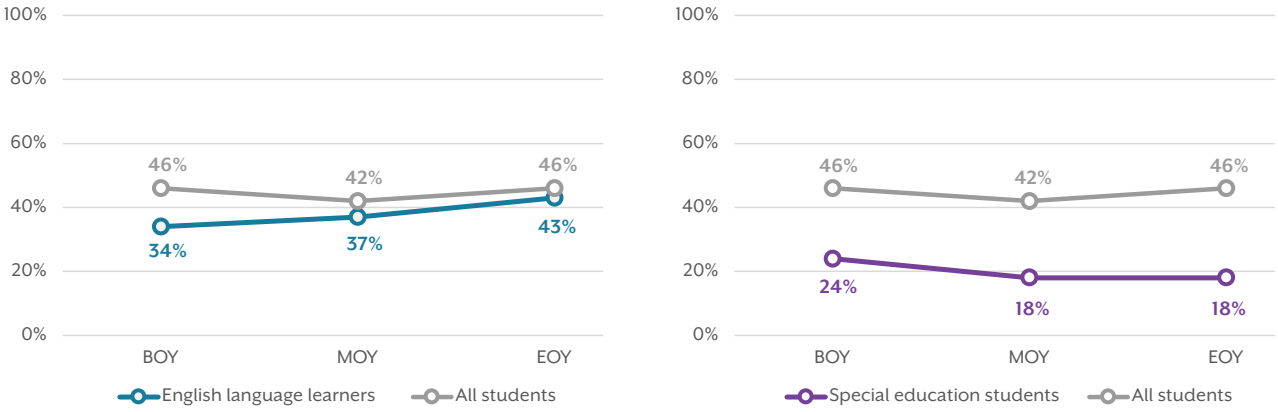


7 City Schools used DIBELS Next from 2014–15 to 2018–19 and DIBELS 8th in 2019–20. In both versions, DIBELS use different fluency domains and different cut points to determine the benchmark at BOY, MOY, and EOY. See DIBELS scoring details in Part 1 of this report.

ENGLISH LANGUAGE LEARNERS AND SPECIAL EDUCATION. Figure 13 describes the percentages of kindergartners who scored above the DIBELS benchmark by ELL and SPED status compared to the district average in the 2018–19 school year. ELLs started lower at BOY but showed significant growth at MOY and EOY. Looking at children with SPED, it is still a concern that less than 25% of children with SPED were above the DIBELS benchmark each year. Other years showed similar trends.

PRIOR CARE AND KINDERGARTEN REPETITION. Similar to what we found by examining KRA and CA, according to the parent-reported prior care, **children who attended formal early care and education programs were more likely to meet the DIBELS benchmark across the entire year than children with home/informal care.** Children who repeated kindergarten were more likely to meet the benchmark at BOY compared to children with home/informal care; however, they start to fall behind of other groups at MOY, and the gaps widen at EOY.

FIGURE 13. **Percentage of Kindergartners Who Scored Above Dynamic Indicators of Basic Early Literacy Skills Benchmark by Special Status, 2018–19**



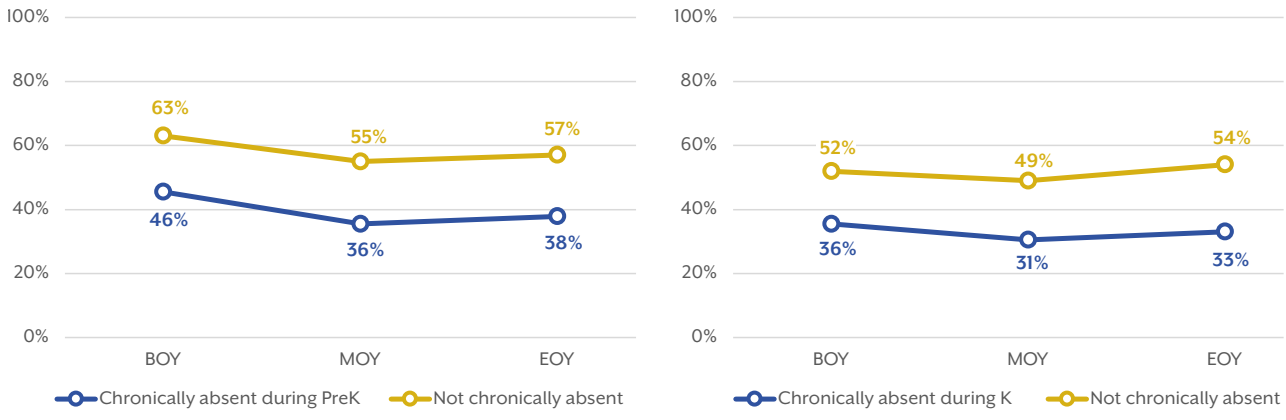
Relationships between Dynamic Indicators of Basic Early Literacy Skills, the Kindergarten Readiness Assessment, and Chronic Absenteeism

Table 5 in the Digest demonstrates the relationships between DIBELS and children's CA in PreK and kindergarten as well as the relationships between DIBELS and the KRA. Among children who were chronically absent in PreK, about half of them met the benchmark of DIBELS Next at BOY (ranging 46% to 57% from the 2014–15 to 2018–19 school years) across the years. In comparison, those who were not chronically absent scored higher on the DIBELS Next benchmark at BOY across the years (ranging 63% to 72% from the 2014–15 to 2018–19 school years). Figure 14 shows the BOY, MOY, and EOY trends in the 2018–19 school year. We again chose the most recent data that are not affected by the COVID-19 pandemic.

A gap of 18 percentage points consistently existed across the three time points (BOY, MOY, and EOY) in the school year between children who were chronically absent and those who were not chronically absent in PreK. **The results highlight the likely importance of early attendance in children's outcomes in kindergarten.**

Likewise, children who were chronically absent in kindergarten underperformed their peers on literacy skills measured by DIBELS across the year. Less than half of the kindergarteners who were chronically absent in kindergarten performed above the DIBELS Next benchmark at BOY (ranging 36% in 2019 to 45% in 2017).

FIGURE 14. **Percentage of Kindergartners Who Scored Above Dynamic Indicators of Basic Early Literacy Skills Benchmark by PreK and Kindergarten Chronic Absenteeism Status, 2018–19**



In contrast, kindergarteners who were not chronically absent were more likely to score above the benchmark of the DIBELS assessment than those who were chronically absent (ranging 52% in 2019 to 60% in 2016). Figure 12 shows the relationships between DIBELS and kindergarten CA in 2019. Not surprisingly, the gap in DIBELS performance between children who are and are not chronically absent widened over time (16% difference at BOY and 21% different at EOY). Children may have missed learning opportunities in kindergarten because of absenteeism throughout the year, which might have been reflected in their EOY DIBELS performance.

Examining relationships between DIBELS and KRA, about 60–70% of children demonstrating readiness also met the DIBELS benchmarks throughout the year. However, only 10–20% of children who had emerging readiness met the DIBELS benchmarks. **The data show the relationships between overall kindergarten readiness at the beginning of the school year and early literacy skills development throughout the kindergarten year.**

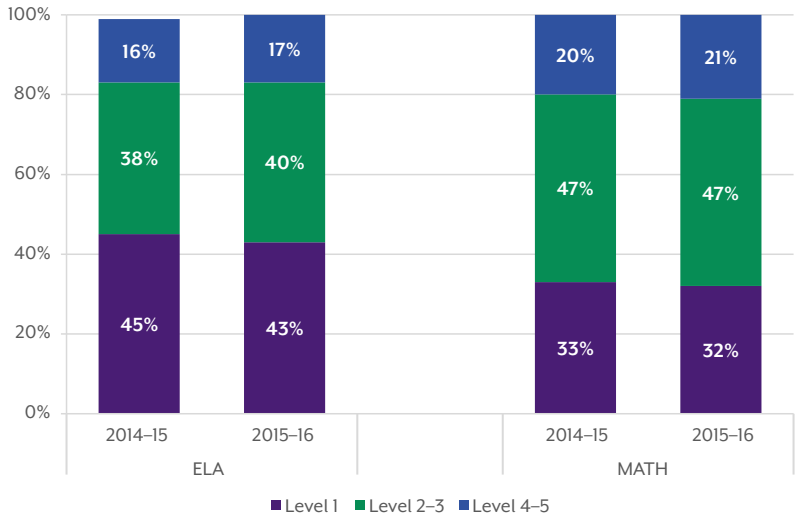
PART 3.

KINDERGARTEN SUCCESS AND 3RD GRADE OUTCOMES

To examine the relationships between kindergarten performance and 3rd grade outcomes, we used the kindergarten classes of 2014–15 and 2015–16. We chose to begin with the 2014–15 cohort because KRA 1.0 was first administered in the 2014–15 school year. Table 6 in the Digest shows the overall trends of PARCC results for the two cohorts of kindergartners. Using an overall score, PARCC provides five different performance levels. In this report, we categorized the five levels into three: (a) level 1, representing "did not yet meet expectations"; (b) levels 2–3, representing "partially met or approached expectations"; and (c) levels 4–5, representing "met or exceeded expectations."[8]

As shown in Figure 15, level 1 was dominant for the ELA assessment and levels 2–3 were dominant for the Math assessment. More specifically, in the ELA assessment, slightly more than half of the students achieved above level 2 (partially met expectations). There were only 16% to 17% of students who had levels 4–5, and 43% to 45% of the students fell into level 1 in ELA. Students performed better in Math: 20–21% in levels 4–5, 47% in levels 2–3, and 32–33% in level 1.

FIGURE 15. **Baltimore City Kindergarten Cohorts 3rd Grade Partnership for Assessment of Readiness for College and Careers Trends**



8 "Maryland School Assessment," Maryland Governor's Office for Children, https://goc.maryland.gov/maryland-school-assessment/.

THE KINDERGARTEN READINESS ASSESSMENT AND PARTNERSHIP FOR ASSESSMENT OF READINESS FOR COLLEGE AND CAREERS.

Figure 16 shows the PARCC trends by demonstrating, approaching, and emerging KRA outcomes. Unfortunately, for kindergarteners who were in the emerging group, only about 2–5% of them met expectations (levels 4–5) in PARCC ELA and Math assessments. Furthermore, more than half of students who were in the KRA emerging group were also not yet able to meet expectations on the PARCC assessments. This signals that **without changing the system to effectively intervene with children who are not demonstrating readiness early, it may be difficult to see development of growth to expectations on state standardized tests from kindergarten to 3rd grade.**

About 30% of children who were demonstrating readiness met expectations (levels 4–5) on the PARCC ELA and Math assessments. In addition, about half of them scored between level 2 and 3 on the PARCC ELA and Math assessment. However, among students who did not demonstrate readiness in kindergarten, only about 10% of them were in levels 4–5. Those who were approaching

FIGURE 16. **Baltimore City Kindergarten Cohorts 3rd Grade Partnership for Assessment of Readiness for College and Careers Trends by Kindergarten Readiness Assessment**

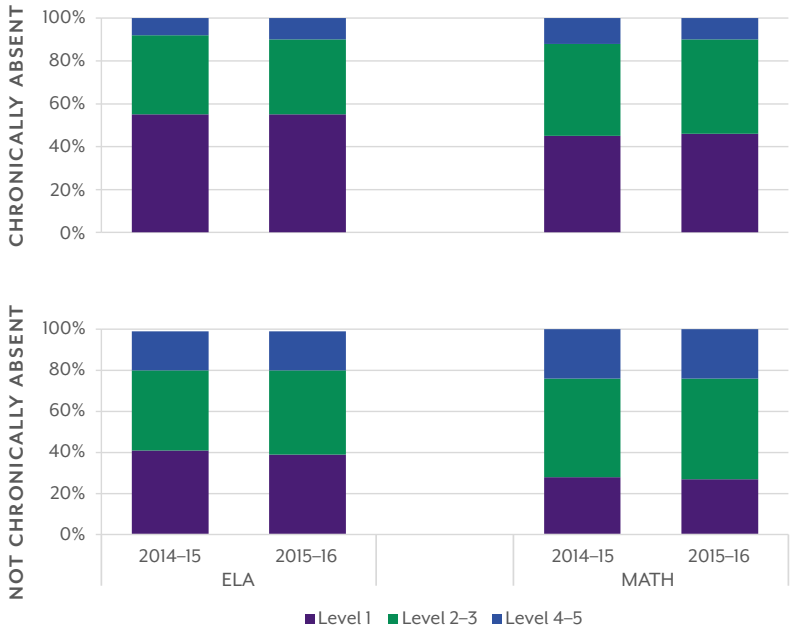
Note. To protect student privacy, this figure demonstrates approximate proportions of students' PARCC performance by KRA. Actual ranges visualized in this figure can be found in Digest Table 6.

kindergarten readiness were more likely to score within level 1 for ELA and level 2–3 for Math in 3rd grade. **Although it is not possible to make causal claims on the relationships between KRA and PARCC performance, the results indicate the importance of kindergarten experiences in children's later outcomes in 3rd grade.**

KINDERGARTEN CHRONIC ABSENTEEISM AND PARTNERSHIP FOR ASSESSMENT OF READINESS FOR COLLEGE AND CAREERS.

Figure 17 shows similar trends using kindergarten CA. Children who were chronically absent in kindergarten more often scored within level 1 for Math and ELA compared to children who were not chronically absent. In addition, children who were not chronically absent were more likely to achieve levels 4–5 compared to those who were chronically absent in kindergarten.

FIGURE 17. **Baltimore City Kindergarten Cohorts 3rd Grade Partnership for Assessment of Readiness for College and Careers Trends by Chronic Absenteeism**



Note. To protect student privacy, this figure demonstrates approximate proportions of students' PARCC performance by KRA. Actual ranges visualized in this figure can be found in Digest Table 6.

DYNAMIC INDICATORS OF BASIC EARLY LITERACY SKILLS AND PARTNERSHIP FOR ASSESSMENT OF READINESS FOR COLLEGE AND CAREERS. Regarding DIBELS, students who scored below the benchmark at BOY scored most often in level 1 for ELA and Math in 3rd grade, while those who scored at the benchmark at BOY scored most often at level 2–3 for ELA and Math. For the MOY DIBELS assessment, students who scored below the benchmark scored in level 1 for ELA and Math in 3rd grade, while those who scored at the benchmark most often scored at level 2–3 for ELA and Math. At the EOY DIBELS assessment, students who scored below the benchmark scored most often at level 1 in ELA and Math, while those who scored at the benchmark received level 2–3 scores on the PARCC ELA and Math assessments. **All findings yield the same implications that children's kindergarten experiences are related to their 3rd grade performance, highlighting the importance of investment in early care and education.**

CONCLUSIONS AND IMPLICATIONS

Young children's school readiness sets their future developmental trajectories (Duncan et al. 2007). This report provided an overview of children's kindergarten readiness and outcomes by examining data on KRA, kindergarten attendance, and DIBELS using six years of data. In addition, we examined how children's kindergarten performance was related to their 3rd grade outcomes, measured by PARCC ELA and Math assessments.

This work shows that **multiple indicators of kindergarten experiences are interrelated.** For example, KRA scores, DIBELS scores, and CA patterns are all related. This points to the importance of understanding children's kindergarten readiness and success holistically. **No one measure can provide a comprehensive understanding of a child's capacity and potential.** We encourage researchers, practitioners, and policymakers to consistently utilize multiple indicators in understanding children's kindergarten experiences across care type and setting.

This work reveals **a wide range of disparities in kindergarten indicators and outcomes across subgroups of children.** These findings are consistent with previous studies suggesting the literacy skills gaps exist across gender and race/ethnicity (Chatterji 2006; Lee & Al Otaiba 2015) and that these gaps may widen over time (McCoach et al. 2006). In particular, we find that children of color, ELLs, and children with disabilities have kindergarten indicators that are consistently lower when compared to their peers. Some of the variation in outcomes we observe may be related to CA, however, these disparities are likely multi-dimensional and include systemic and other individual-level factors that we cannot observe in these data. Family-engagement efforts may help programs to be able to cultivate relationships with families that help them to better understand children's needs.

This work shows that **children's exposure to formal early care and education before they enter kindergarten is beneficial** and related to better kindergarten indicators and outcomes. Expanding available seats for early childhood programming from birth to age 5, ensuring the quality of those services, and implementing improvements for the early childhood workforce (e.g., higher pay, continuing professional development) are necessary.

We also found that parent-reported prior-care information is not reliable, indicating that parents may not be fully informed about the services they and their children can receive. **In order to make well-informed decisions about how resources should be allocated, the city needs to build a collective data archive that all early childhood stakeholders can access.** This would help stakeholders and the city at large to understand children's and families' use of early care and education programming from birth to

age 5. The benefits of the investments outlined by the Kirwan Commission recommendations for expanding public PreK for children who are ages 3 and 4,[9] which will be implemented in 2023, can be maximized when the needs of families and children are closely and accurately monitored. A holistic data system could help all stakeholders estimate important indicators of service demand, including the number of births, enrollment from birth to age 5, and allocation of seats by geographic regions.

Finally, demonstrating readiness on the KRA and high kindergarten attendance are related to better 3rd grade PARCC ELA and Math outcomes. Our findings highlight the importance of preparing children early in their life.

Taken as a whole, this work points out that comprehensive supports are needed to narrow disparities. To ensure that every child is ready for school and to succeed in kindergarten, systematic improvement efforts are needed in the community. These include ensuring families have access to quality and formal early care and education, academic progress monitoring as well as other social and cognitive supports across all care settings, and efforts to reduce CA in early childhood (Hume et al. 2015; Pinto et al. 2013; Rhoad-Drogalis & Justice 2018). Resources to aid in improving children's learning and development are also needed.

While we believe that this work provides a better understanding of kindergarten readiness and outcomes in Baltimore, we also believe that no single or set of measures derived from administrative data can provide a comprehensive understanding of our children's capacity and potential. This points to the importance of understanding children's kindergarten readiness and success holistically.

We encourage researchers, practitioners, and policymakers to consistently utilize multiple indicators in understanding children's kindergarten experiences across care type and setting. Furthermore, supports for children and families need to be at every level, from classroom resources to community infrastructure investment and public investment. For example, it is important to create positive school environments for children, but it is also critical to provide access to transportation to maintain better attendance and learning tools and resources at home so that children continue their learning at home.

We hope that this report provides initial data points that form the basis of a shared understanding and starting point for us to identify challenges and opportunities for the City of Baltimore and its children and families.

9 *The Blueprint for Maryland's Future Act Overview & Updates*, Maryland Association of Boards of Education, https://www.mabe.org/wp-content/uploads/2021/11/Blueprint-for-Marylands-Future-Overview-and-Updates-10-21-.pdf.

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