Longitudinal Impact of Early Success Performance Plan Initiatives on Student Academic Achievement: Technical Report on Three Years of Implementation

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TABLE OF CONTENTS

TABLES

FIGURES

Longitudinal Impact of Early Success Performance Plan Initiatives on Student Academic Achievement: Technical Report on Three Years of Implementation

EXECUTIVE SUMMARY

The Office of Shared Accountability periodically has evaluated an ambitious wave of reform efforts supported by the Montgomery County Public Schools (MCPS) Early Success Performance Plan during its three years of implementation. The findings of numerous research and evaluation studies document the success of these initiatives in improving student achievement, particularly for those students affected by poverty and second language learning. The findings in this latest report affirm the positive impact of the Early Success Performance Plan.

The kindergarten initiatives that began in fall 2000, which have now encompassed three phases of schools implementing full-day kindergarten programs, have shown the impressive results described below.

Findings

The percentage of students able to achieve benchmark performance targets on foundational skills and text-reading in kindergarten increases steadily every year.

- On foundational skill benchmarks, percentages grew from 60 to 74 to 77.
- On the text-reading benchmark, percentages grew from 39 to 59 to 70.

The benefits of full-day kindergarten programs have become increasingly evident.

- In the 2002–2003 school year, there was statistically significantly more growth from fall to spring in the number of foundational skill benchmarks achieved by full-day kindergarten students (average growth of 3.29) than half-day kindergarten students (average growth of 2.48).
- The percentage of students reading at or above benchmark text level was higher in full-day kindergarten programs than half-day programs, with 71% in full-day compared with 69% in half-day programs.
- There is continuous improvement in all schools over the three years of implementation; however, there is a surge in performance gains during the year when full-day kindergarten is implemented. Phase 2 schools increased the percentage of students at text-reading benchmark from 28% to 67%, and Phase 3 schools increased from 49% to 73% during the first year of full-day kindergarten implementation.

The performance of students receiving special services grows steadily every year, as higher percentages of students are able to achieve benchmark performance for text-reading in kindergarten.

- English as a Second Language (ESOL) students in Phase 1 schools able to reach benchmark increased from 29% to 34% to 56%. In Phase 2 schools the increase was from 17% to 36% to 50%, while in Phase 3 schools the increase was from 13% to 17% to 50%. In schools with half-day kindergarten, the percentage of ESOL students achieving benchmark performance was from 25% to 23% to 44%.
- Free and Reduced-price Meals Services (FARMS) students in Phase 1 schools able to reach benchmark increased from 35% to 51% to 64%. In Phase 2 schools the increase was from 19% to 53% to 61%, while in Phase 3 schools the increase was from 14% to

28% to 63%. In schools with half-day kindergarten, the percentage of ESOL students achieving benchmark performance was from 19% to 28% to 42%.

- For students receiving both FARMS and ESOL services, the percentage of students able to meet benchmark in Phase 1 schools changed from 26% to 33% to 57%. In Phase 2 schools these percentages changed from 7% to 27% to 54%, and in Phase 3 schools the change was from 4% to 12% to 53%. For half-day kindergarten schools, the percentage change for this subgroup of students was from 12% to 17% to 31%.
- Special education students in Phase 1 schools increased from 22% to 41% to 50%, achieving benchmark by 2003. In Phase 2 schools, the pattern was different as special education students achieving benchmark performance moved from 21% to 60% to 39%. Consistent increases returned in Phase 3 schools, with the percentage of special education students reaching benchmark moving from 17% to 44% to 57%, and in half-day kindergarten schools, the percentages moved from 28% to 42% to 54%.

Students from every racial/ethnic subgroup improved performance from spring 2001 to spring 2003 in kindergarten text-reading; however, the growth by African American and Hispanic students was particularly important.

- The number of African American students in Phase 1 schools increased from 44% at or above benchmark to 55% to 69%. In Phase 2 schools African American students achieving benchmark increased from 26% to 64% to 72% while in Phase 3 schools the increase was from 26% to 45% to 73%. In schools with half-day kindergarten, the percentage of change African American students achieving benchmark performance moved from 27% to 44% to 53%.
- Hispanic students in Phase 1 schools increased from 33% at or above benchmark to 55% to 69% by 2003. In Phase 2 schools they increased from 18% to 54% to 59% while in Phase 3 schools the increase was from 12% to 23% to 56%. In schools with half-day kindergarten, the percentage change of Hispanic students achieving benchmark performance moved from 24% to 32% to 48%.
- By spring 2003, 72% of African American students in full-day kindergarten classes met the text-reading benchmark compared to 79% of white students and 60% of Hispanic students in full-day programs who met the text-reading benchmark.

The percentage of all Grade 2 students able to read text at or above benchmark in 2003 increased to 68% from 62% in 2002, with greatest gains demonstrated for those students most affected by poverty and second language learning.

- The number of ESOL students reaching the text-reading benchmark increased by 16 percentage points, moving from 32 to 48; while the number of their non-ESOL peers increased by 6 percentage points, moving from 66 to 72.
- The number of FARMS students reaching the text-reading benchmark increased by 9 percentage points, moving from 37 to 46; while the number of their non-FARMS peers increased by 5 percentage points, moving from 69 to 74.
- Students receiving both ESOL and FARMS reaching the text-reading benchmark increased by 17 percentage points, moving from 23 to 40; while the number of their non-ESOL and FARMS peers increased by 5 percentage points, moving from 65 to 70.
- The number of students with IEPs reaching the text-reading benchmark dropped by 3 percentage points, moving from 45 to 42; while the number of their non-IEP peers

increased by 6 percentage points, moving from 63 to 69. This change may reflect an increase in the number of special education students tested as teachers were made more aware of test administration expectations.

The achievement gap between African American and Hispanic and Asian American and White Grade 2 students narrowed between 2002 and 2003.

- The number of African American students who were able to reach benchmark performance in Grade 2 increased by 11 percentage points, from 46% to 57%, which narrowed the achievement gap by 5 percentage points.
- Hispanic students also increased the percentage of students able to reach benchmark by 12 percentage points, from 35% to 47%, which narrowed the achievement gap by 6 percentage points.

The achievement gap between the performance of schools most affected by poverty and overall county performance continues to close.

- The difference in the percentage of students able to reach the text-reading benchmark between Phase 1 schools and all of MCPS went from 24 in 2002 (62% in MCPS and 38% in Phase 1 schools) to 15 in 2003 (68% in MCPS and 53% in Phase 1 schools.)
- The difference in the percentage of students able to reach the text-reading benchmark between Phase 2 schools and all of MCPS went from 15 in 2002 (62% in MCPS and 47% in Phase 2 schools) to 9 in 2003 (68% in MCPS and 59% in Phase 2 schools.)
- The difference in the percentage of students able to reach the text-reading benchmark between Phase 3 schools and all of MCPS went from 7 in 2002 (62% in MCPS and 55% in Phase 3 schools) to 3 in 2003 (68% in MCPS and 65% in Phase 3 schools.)

Sustained effects are demonstrated at the end of Grade 2, as students in Phase 1 schools who received the Early Success Performance Plan outperformed their peers who did not receive the plan.

- The average highest Grade 2 text-reading level for all students in 2003 was 23.78, an increase of 3.32 text-reading levels over the average highest Grade 2 text-reading level of 20.47 for all students in 2002.
- The average highest Grade 2 text-reading level for ESOL students in 2003 was 21.49, an increase of 4.38 over the average highest Grade 2 text-reading level of 17.11 for ESOL students in 2002.
- The average highest Grade 2 text-reading level for FARMS students in 2003 was 21.97, an increase of 2.43 over the average highest Grade 2 text-reading level of 19.54 for FARMS students in 2002.
- The average highest Grade 2 text-reading level for ESOL and FARMS students in 2003 was 20.97, an increase of 3.79 over the average highest Grade 2 text-reading level of 17.18 for ESOL and FARMS students in 2002.
- The average highest Grade 2 text-reading level for African American students in 2003 was 24.31, an increase of 3.46 over the average highest text-reading level of 20.85 for the African American students in 2002.
- The average highest Grade 2 text-reading level for Hispanic students in 2003 was 21.76, an increase of 2.83 over the average highest text-reading level of 18.93 for the Hispanic students in 2002.

The MCPS Assessment Program Primary Reading provides teachers with information about student performance to support instructional decisions. These locally developed assessments also are showing predictive validity for state and national assessments.

The benchmarks established for the MCPS Assessment Program Primary Reading are valuable predictors of performance on state and national assessments.

- The correlation between the local assessment and the Comprehensive Tests of Basic Skills (CTBS) is .492, with the Maryland School Assessment (MSA) norm-referenced test it is .498, and with the MSA criterion-referenced test it is .597. These correlation coefficients are all statistically significant.
- When students meet the Grade 2 benchmark on the locally developed assessment, 93% of them achieve proficiency on the MSA.
- When students meet the Grade 2 benchmark on the locally developed assessment, 82% of them score at or above the national median percentile rank on the CTBS.
- The relationships between the performance of Grade 1 and 2 students on local assessments and the MSA and the CTBS are statistically significant.

An important reason for monitoring the implementation and student performance outcomes related to the Early Success Performance Plan is to suggest ways to refine various components of the initiatives to support overall continuous improvement. The following recommendations are offered, based on the findings of this report and accompanying reports for the 2002–2003 school year.

Recommendations

1. Continue to support funding of the Early Success Performance Plan.

The initiatives included in the Early Success Performance Plan have consistently produced improvements in student achievement. Cohort 1 students, who did not even receive all components of this comprehensive program, have demonstrated achievement gains on both the CTBS and locally developed assessments. Based on the kindergarten findings, each subsequent cohort of students steadily improves. The Early Success Performance Plan is making a difference.

2. Continue to expand full-day kindergarten programs to all schools.

When full-day kindergarten programs are part of a concerted and comprehensive improvement effort, the results are impressive. A marked improvement has occurred with every phase of implementation and has provided much-needed support to students affected by poverty and second language learning. All students deserve the opportunities that full-day kindergarten can offer.

3. Use technology in a more efficient and effective manner to support the Early Success Performance Plan.

The locally developed assessments have proven to be valuable tools for teachers, but administering these tools and the required data entry are very time-consuming. If technology was made available to teachers, such as hand-held wireless computers, the data collected through local assessments could be entered immediately and processed in a more efficient manner.

4. Continue to evaluate the Early Success Performance Plan, especially the most recently added components.

A new curriculum and assessment program in prekindergarten and Grade 3 provide a means to strengthen the Early Success Performance Plan considerably. These initiatives should be examined separately to support refinement, but also as an ongoing part of the longitudinal study of the Early Success Performance Plan to determine the net effects of all components.

5. Plan for ongoing training of teachers to ensure that the Early Success Performance Plan is implemented as designed.

As the program enters its fourth year of implementation, it is important to ensure that newly hired teachers receive the same level of training as their colleagues did during preliminary phases of implementation. It is also important to provide ongoing training as a means to ensure fidelity of implementation and to solicit feedback for refinement efforts.

6. Conduct further exploration of the impact of the support parents provide as their child's first teacher.

Examine MCPS efforts to work with parents to understand the value of foundational literacy skills and to provide them with activities that they can use at home to extend student learning. Monitor the component of the Early Success Performance Plan to support parent involvement, through such means as parent-friendly information on assessments, communication of student progress, and materials that reflect cultural and linguistic differences of the student population.

7. Disseminate longitudinal findings of the Early Success Performance Plan with potential partners such as corporations, external research organizations, and other school districts, to highlight the impact systemic reform initiatives can have on student performance, and to foster relationships that can help expand current and future programs planned in MCPS.

The performance of students who participated in the Early Success Performance Plan emphasizes the impact that full-day kindergarten, smaller class sizes, a standards-based curriculum, diagnostic assessments, professional development, extended-day and extended-year programs, and increased family/school communication can have on the progress of our youngest students. These individual elements combine to form a cohesive program that has helped improve benchmark performance levels on text-reading skills and text-reading over the past three years.

Providing corporate businesses and external research organizations with the results of the Early Success Performance Plan will work to strengthen current and future initiatives in MCPS. Local businesses, which will benefit from a more literate and educated work force, will have the opportunity to become outspoken proponents of a documented research initiative that is making positive impacts on students' academic achievement. They can become valuable districtwide partners providing needed technology, technical assistance, and school-based resources. External research organizations also can provide valuable insights, personnel, and new research agendas to strengthen current initiatives and propose ideas not yet developed.

The overall impact this research could have on other school districts also should be emphasized. Given the continued progression of students in kindergarten over the past three years and the benchmark performance levels of Grade 2 students who began the program in kindergarten during the 2000–2001 school year compared with the year prior, the Early Success Performance Plan should be disseminated to other divisions for two important reasons. The first is to provide

other districts with a systemic reform effort that has continually improved student performance. The second is to develop alternative sites where the design of the Early Success Performance Plan can be replicated and studied. Documenting student performance levels at various locations could reiterate the overall potential of this program, despite growing concerns regarding developing programs that adequately address the needs of a steadily rising FARMS and ESOL population.

INTRODUCTION

The Montgomery County Public Schools (MCPS) Early Success Performance Plan was developed to address gaps in achievement and opportunity for the district's youngest learners. The plan includes a series of interwoven initiatives. One component, full-day kindergarten, was phased into schools with the highest levels of poverty. The Early Success Performance Plan includes these integrated components:

- Full-day kindergarten, with a 90-minute block for balanced literacy and a 60-minute mathematics block
- Smaller classes with a 15:1 student to teacher ratio in kindergarten and a 17:1 ratio in Grades 1 and 2 (In all elementary schools, class size was reduced to 17:1 for the 90-minute literacy block.)
- Standards-based curriculum focusing on reading, writing, and mathematics
- Diagnostic assessments three times a year, supported by a technology-based monitoring system
- Professional development—more than 400 teachers received nearly 100 hours each of staff development
- Extended-day and extended-year programs
- Increased family/school communication[1]

The Early Success Performance Plan began with a new kindergarten initiative that was implemented during the 2000–2001 school year. One component of this initiative was to increase full-day kindergarten programs, beginning with the elementary schools with the largest number of students living in poverty. Phase 1 schools (17 total) implemented the full-day program in the 2000–2001 school year. An additional 17 schools, known as Phase 2 schools, implemented the full-day kindergarten program in 2001–2002. In the 2002–2003 school year, 22 more schools moved to full-day kindergarten and were identified as Phase 3 schools.

As each new phase of the Early Success Performance Plan has been implemented, the Office of Shared Accountability has conducted extensive evaluation and research studies. These studies have guided program improvement efforts and monitored the performance of each cohort of students as they progressed from kindergarten to Grade 2. Cohort 1 includes students who entered kindergarten in fall 2000, Cohort 2 includes students who entered kindergarten in fall 2001, and Cohort 3 represents students who entered kindergarten in fall 2002. A summary of the reports issued and key findings are presented in the following section.

[1] A more detailed explanation of these reform efforts is presented in the document *Early Success Performance Plan: Educational Reform in the Montgomery County Public Schools* and in reports completed by the Office of Shared Accountability and cited in the references section.

REVIEW OF PREVIOUS RESEARCH

During the 2000–2001 school year, the Office of Shared Accountability worked extensively with staff from the Department of Early Childhood Programs to refine assessments for foundational skills in reading and to establish benchmark performance targets in each area tested. Bridges-Cline (2001) outlines this process in the first report issued related to the Early Success Performance Plan. This report also presented results based on kindergarten student performance growth from fall to spring on four foundational skill assessments. While students had taken six foundational skill assessments, two of the measures had been altered so extensively that fall to spring comparisons were not appropriate. In this first year of implementation, the growth by kindergarten students who had received full-day kindergarten programs (Phase 1 schools only) was deemed noteworthy, particularly for those students affected by both poverty and second language learning (Bridges-Cline, 2001).

In the second year of implementation, Cohort 1 students moved into Grade 1 and Cohort 2 students entered kindergarten with Phase 1 and Phase 2 schools now offering full-day kindergarten programs. Two primary research questions were addressed during this second year of implementation. First, how did the performance of Cohort 2 students compare with the performance of Cohort 1 students on the kindergarten assessments, and were the benefits of full-day kindergarten sustained in Grade 1?

A second report authored by Bridges-Cline (2002) addressed the first question and documented that Cohort 2 students had indeed outperformed Cohort 1 students. The comparison on foundational skill performance was based on only four foundational skill assessments, since those were the only four reported in the previous year, and also included performance on text-reading. This improvement in student performance was attributed to teachers' enhanced understanding of the new curriculum and assessments, sustained training efforts, and refinements in the assessments that occurred during the first year of implementation. Additionally, the benefits of full-day kindergarten to students affected by both poverty and second language learning were noted.

A comprehensive report by Nielsen and Cooper-Martin (2002) addressed both questions related to the second year of implementation of the Early Success Performance Plan. This report examined the effect of full-day kindergarten programs for racial/ethnic subgroups and participation in Head Start programs for Cohort 1 and Cohort 2 by conducting Multiple Analysis of Variance (MANOVA) procedures and found benefits for both cohorts. Improved performance by Cohort 2 students on the foundational skill assessments again was evidenced.

As Cohort 1 students entered Grade 1, the relationship between reading performances in kindergarten to the attainment of benchmark performance targets (reading and comprehending text) for Grade 1 clearly was evident. Seventy-six percent of students who met benchmark performance levels on all four foundational skill areas in kindergarten went on to meet benchmark performance targets in Grade 1 (Nielsen & Cooper-Martin, 2002).

Several key developments occurred during the third year of the implementation of the Early Success Performance Plan, as students in Cohort 1 entered Grade 2. The Extended Learning Opportunities Summer Program was started in 18 Title 1 elementary schools in July 2002. New

curriculum guides for reading in Grades 1 and 2 were published and training for teachers occurred. The MCPS Assessment Program Primary Reading was refined so that continuous progress from kindergarten to Grade 2 was established with text levels more delineated and both oral and written comprehension measures based on appropriate text level instituted. In addition to these program developments, Cohort 1 students in Grade 2 took the TerraNova Comprehensive Tests of Basic Skills (CTBS)—the first group who had benefited from the Early Success Performance Plan programs to take a nationally normed assessment. Numerous Office of Shared Accountability research and evaluation studies examined these developments.

In May 2003, two reports described the performance of Cohort 1 students on the TerraNova CTBS. Results from this nationally normed assessment with interval scale scores enabled staff in the Office of Shared Accountability to conduct more complex analyses to examine the effects of full-day kindergarten programs. Larson (2003) used a two-level hierarchical linear model analysis to contrast performance on CTBS scale scores in 2003 to a baseline performance (averaging scale scores from 2000–2002). The performance of students who had received a full-day kindergarten program was statistically significantly greater than the baseline performance level in those schools (Larson, 2003).

Alban, Nielsen, and Schatz (2003) used multiple regression analyses to document that the full-day kindergarten benefit for students affected by both poverty and second language learning was still evident, based on their performance on the CTBS reading subtest. In addition, the report by Alban, Nielsen, and Schatz (2003) focused on the performance of those students in Cohort 1 who had received the full-day kindergarten program. The progress of students was examined based on their foundational skill performance upon entry into kindergarten and whether or not they were continuously enrolled from kindergarten through Grade 2. Findings once again supported that students affected by both poverty and second language learning were more likely to perform at or above the national median on the CTBS in reading if they had attended a full-day kindergarten program and remained continuously enrolled (Alban, Nielsen, & Schatz, 2003). In addition, this report highlighted the importance of entering kindergarten with strong foundational skill development due to its impact on future performance on reading assessments, which supported the need for the next wave of Early Success Performance Plan reforms in prekindergarten programs.

Reports examining student performance on the MCPS Assessment Program Primary Reading have also examined the progress of subsequent cohorts of students receiving the Early Success Performance Plan.. Curry-Corcoran and Alban (2003) were able to report that Cohort 3 students achieved the highest level of performance yet as kindergarten students with 68% reading at or above the benchmark performance target for text-reading. Also, for the first time, comparisons between cohorts of kindergarten students could be made for all six foundational skills tests. There was a slight increase for Cohort 3 students, of whom 76% achieved benchmark performance on five or six foundational skill assessments, versus the 75% of Cohort 2 students meeting the benchmark on five or six foundational skill assessments. Findings also revealed that students affected by poverty and second language learning continued to make statistically significantly more growth in foundational skill development than their peers without those risk factors (Curry-Corcoran & Alban, 2003).

The performance of Cohort 1 students in Grade 2 and Cohort 2 students in Grade 1 discussed in the report by Cooper-Martin and Alban (2003) show that more than 60% of students in both grades are able to achieve benchmark performance targets in reading. Additionally, the new curriculum and assessment refinements received favorable reaction by the majority of teachers interviewed (Cooper-Martin & Alban, 2003). One limitation encountered in reporting was the difficulty in examining the difference between the performance of Cohort 1 and Cohort 2 students on Grade 1 benchmarks. In the 2002–2003 school year, the Grade 1 benchmark was changed to a higher-level text with an oral comprehension requirement. This change made comparisons with the previous year's benchmark at a lower-level text with written comprehension inappropriate.

This report continues to build upon this legacy of research and evaluation studies related to the Early Success Performance Plan. This longitudinal study continued to monitor the performance of Cohort 1 students as they completed Grade 2 and moved into the grade where high-stakes accountability tests associated with the *No Child Left Behind Act* are implemented. Five key questions provide the framework for this current study:

1. What are the benefits of the Early Success Performance Plan on the performance of kindergarten students in reading?
2. Are these benefits sustained through Grade 2?
3. Are there differential performance patterns for students receiving special services based on kindergarten program received?
4. Are there differential performance patterns for racial/ethnic subgroups of students?
5. Is the performance on locally developed assessments linked to performance on nationally normed assessments?

METHODOLOGY

Sample

In order to accurately describe progress of students from kindergarten through Grade 2, a longitudinal database was created to include students who entered kindergarten during the 1999–2000, 2000–2001, and 2001–2002 school years. Demographic information about the students, scores on MCPS Assessment Program Primary Reading measures, and Grade 2 Reading CTBS scores were included when available. Students who entered kindergarten in fall 2000 were enrolled in the same school throughout their kindergarten year, and had valid scores for both the fall administration of the MCPS Assessment Program Primary Reading foundational skill assessments and the end of Grade 2 MCPS Assessment Program Primary Reading were identified. These 6741 students form the 2002-2003 Cohort 1 sample for this longitudinal study and are described in Table 1.

The comparison group included students who entered kindergarten in fall 1999, were enrolled in the same school throughout their kindergarten year, and had valid scores for the end of Grade 2 MCPS Assessment Program Primary Reading. These 6250 students that form the 2001-2002-comparison Cohort 0 sample are also described in Table 1. (The demographic profile of these cohorts of students based on the phase of full-day kindergarten implementation is presented in Appendix 1.)

Table 1. Description of Cohort 0 and Cohort 1 Students Included in the Longitudinal Impact Study

	Cohort 0 2001–2002		Cohort 1 2002–2003		Change from Cohort 0 to 1	
	n	**%**	***n***	**%**	***n***	**%**
All MCPS	6,250	100	6,741	100	491	0
African American	1,126	18	1,254	19	128	1
American Indian	28	<1	24	<1	-4	0
Asian American	792	13	874	13	82	0
Hispanic	1,095	18	1,282	19	187	1
White	3,209	51	3,305	49	96	-2
ESOL	728	12	1,158	17	430	5
FARMS	1,383	22	1,525	23	142	1
ESOL & FARMS	412	7	647	10	235	3
Special Education	345	6	439	7	94	1

Note: Percents are rounded to the nearest whole number and may not sum to 100%.

These two samples of students were used for all of the analyses in this report, except for those analyses related to the progress of students in successive kindergarten cohorts and for the predictive validity for CTBS and the Maryland School Assessment (MSA) scores. To compare performance in kindergarten only, the past three cohorts of kindergarteners who had both fall and spring scores on the MCPS Assessment Program Primary Reading were used as the sample. The total number of students for these kindergarten cohorts was 9168 for 2000–2001, 9,226 for

2001–2002, and 8,696 for 2002–2003. In the analyses to examine predictive validity, the sample included students who had scores for both of the assessments being compared. Thus the number of students will vary for these analyses, and is reflected in tables presenting this information.

Measures

The student outcome measures used in this report are from the MCPS Assessment Program Primary Reading, the TerraNova Grade 2 CTBS, and the MSA. The TerraNova Grade 2 CTBS is a nationally normed test of basic skills that produces several measures of student performance. The scale score and national percentile rank on the reading subtest were used for this report. The MSA is an assessment that combines a norm-referenced test (NRT) and a criterion-referenced test (CRT). The reading scale score for both the NRT and CRT in Grade 3 were used in these analyses.

The MCPS Assessment Program Primary Reading combines a series of assessments to measure foundational skill development and leveled text with comprehension measures to assess text-reading. Each of the six foundational skill assessments has a benchmark performance score. In the initial year of implementation, only four foundational skill assessments were fully operational—letter knowledge, print concepts, phonics, and word knowledge.

To describe performance on the text-reading component of the MCPS Assessment Program Primary Reading, two measures were used—benchmark status and highest text level read. Benchmark status included categorical variables created to indicate if the student was able to achieve benchmark performance for text-reading by the end of kindergarten and by the end of Grade 2. For kindergarten, the benchmark performance is to read a Level 3 text with 90% accuracy. For Grade 2, the benchmark performance was to read a Level M text with 90% accuracy and adequate comprehension (an assigned rubric score of 2 out of 3 on written questions).

The second measure related to text-reading was the highest text level read. Books used in the MCPS Assessment Program Primary Reading have been leveled according to methods described by Fountas and Pinnell (1999). Students progress through levels of text numbered 3 to 16 and then lettered J, K, L, M, N, P. Numeric values were assigned to these lettered texts, ranging from 20 to 40, based on an equivalency process described by Fountas and Pinnell (1999). The variable to identify a student's highest text level read corresponds to the text level (or its numeric equivalent) a student read with 90% or higher accuracy and adequate oral or written comprehension (as defined based on text level expectations) at any time during the year.

Student demographic variables for type of kindergarten program (full-day versus half-day), special services received in kindergarten (including English as a Second Language (ESOL) services, Free and Reduced-price Meals Services (FARMS), and special education), and continuous enrollment were also used. The race/ethnicity of students was another variable used to describe students. In several instances, the cell size for the American Indian subgroup was too small to report without compromising confidentiality. The school-level variables used were determined based on the phase of full-day kindergarten implementation. Phase 1 implemented full-day kindergarten in fall 2000, Phase 2 in fall 2001, and Phase 3 in fall 2002. Schools continuing to receive half-day kindergarten programs as of the 2002–2003 school year were coded as half-day kindergarten.

Analyses

A series of descriptive analyses was used to examine the percentage of students who met various MCPS Assessment Program Primary Reading benchmarks across kindergarten and Grade 2. In examining the highest text-reading level achieved by the end of Grade 2, descriptive analyses were first used to examine the percentage of students able to meet benchmark performance levels by the end of Grade 2, based on special services received and phase of full-day kindergarten implementation. T-tests were used to determine if there was a statistically significant difference between the Grade 2 performances of students based on cohort membership, therefore allowing sustained effects of the Early Success Performance Plan to be quantified. These same analyses were then conducted for students affected by both poverty and second language learning, as previous studies found the impact of full-day kindergarten to be most notable for these students.

Predictive validity of the MCPS Assessment Program Primary Reading for the CTBS and the MSA was analyzed by calculating correlations between the reading scale scores on the CTBS and the MSA to the highest reading level achieved in Grade 2. Expectancy tables also were generated to show the percentage of students able to achieve benchmark status at the end of Grade 1 and Grade 2 compared with the percentage of students able to score at the proficient level on the MSA and to achieve at or above the national median percentile rank on the CTBS. Chi-square tests were used to determine the statistical significance of the cell sizes in these expectancy tables.

MAJOR QUESTIONS AND RESULTS

What are the benefits of the Early Success Performance Plan program on the performance of kindergarten students in reading?

As the Early Success Performance Plan began in the 2000–2001 school year, kindergarten students were evaluated in the two critical areas of foundational skill development and text-reading ability. The foundational skills provide the underlying foundation upon which text-reading is developed. During this inaugural year of implementation, four foundational skills were examined:

1. Letter identification
2. Concepts about print
3. Word recognition
4. Hearing and recording sounds

The Office of Shared Accountability and the Office of Curriculum and Instructional Programs worked together to establish benchmark performance levels in both foundational skill development and text-reading. During the 2000–2001 school year, students were evaluated on the degree to which they had met adequate performance on each of the four foundational skills. Appropriate benchmark performance levels were established for each individual foundational assessment. These scores are summarized in Table 2.

Table 2. Foundational Skill Assessments Scale Ranges and Benchmark Performance Levels, 2000 to 2003

	Assessment Scale Range			Benchmark Performance Levels		
	Year 1 00–01	Year 2 01–02	Year 3 02–03	Year 1 00–01	Year 2 01–02	Year 3 02–03
Earliest Reading Skill Areas						
Letter Identification	0–54	0–54	0–54	45+	45+	45+
Concepts About Print	0–16	0–16	0–16	13+	13+	13+
Oral Language Skills Areas						
Record of Oral Language	NR	0–21	0–21	NR	13+	13+
Phonemic Awareness	NR	0–24	0–24	NR	14+	14+
More Advanced Reading Skills Areas						
Hearing and Recording Sounds	0–14	0–15	0–15	8+	9+	9+
Word Recognition	0–22	0–25	0–25	8+	11+	11+
NR – Not Reported						

As new cohorts of kindergarten students entered in fall 2001, a number of changes occurred in the process of assessing students in foundational skills. Two revised foundational assessments—record of oral language and phonemic awareness—were added to the kindergarten-testing repertoire. In conjunction with these new assessments, teachers also were provided with a kindergarten assessment decision tree that was designed to help teachers test kindergarten students at appropriate levels. While teachers could refer to their own professional judgment regarding individual students, a framework was developed to ensure students had achieved satisfactory performance on the record of oral language, letter identification, and concepts about

print before moving on to more difficult assessments. The benchmark performance level for text-reading was established at reading a Level 3 text or above with at least 90% accuracy. This performance standard would be used throughout each of the school years included in this study.

Since the record of oral language was an assessment used in this decision tree, although not used during the 2000–2001 school year, accurate comparisons between the first cohort of students and subsequent cohorts is limited. One of the major limitations has come in that, while all teachers were expected to assess students in word recognition and hearing and recording sounds during the first year of implementation, the number of students who received these assessments in subsequent years is influenced by the kindergarten assessment decision tree. Thus, all future foundational skill data will be analyzed in terms of how students did on all six foundational tests.

Student data were analyzed to determine both the degree to which students had achieved benchmark on each of the foundational assessments and their text-reading ability at the beginning and end of the school year. The following figures highlight the growth that occurred over the previous three school years. While the percentage of students able to meet benchmark proficiency levels on five or more of the foundational assessments continues to climb, students' text-reading abilities have grown markedly. This growth in text-reading reflects a 31% increase from the inception of the Early Success Performance Plan and an 11% increase from the previous school year.

Figure 1. Benefits of the Early Success Performance Plan on Foundational Skill Development, for Kindergarteners

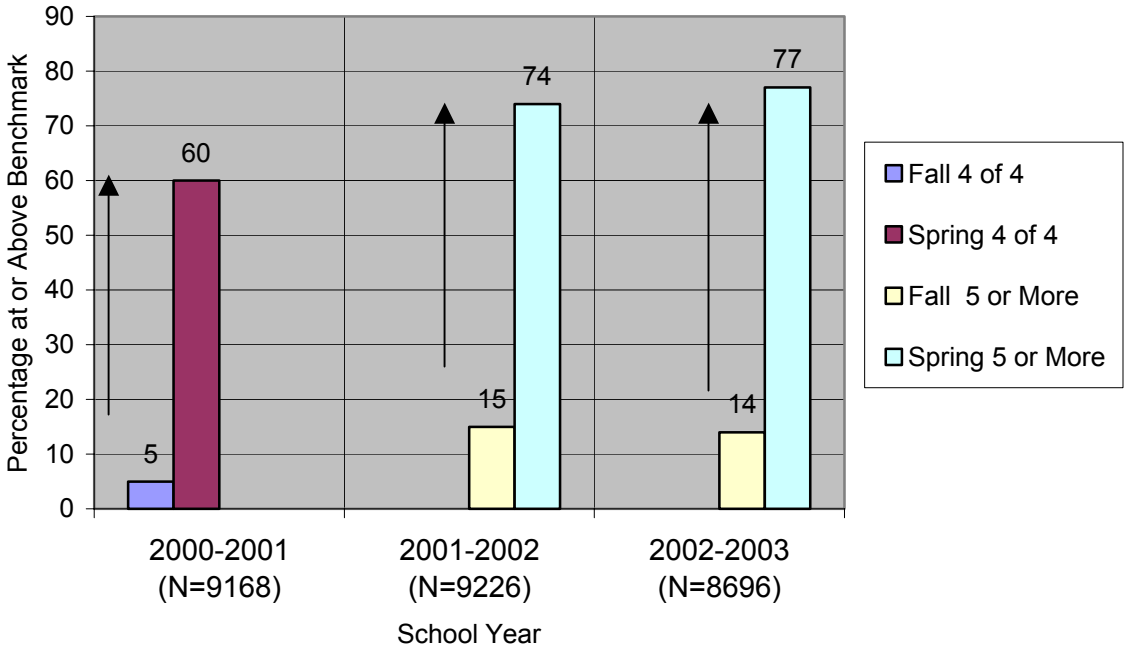
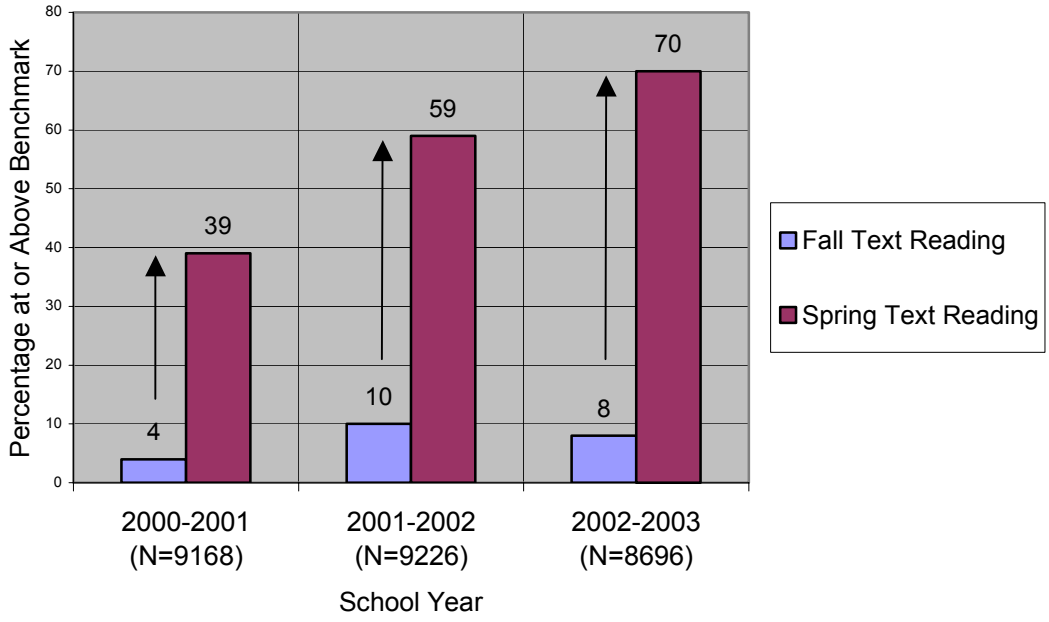


Figure 2. Benefits of Early Success Performance Plan Text-reading Abilities, for Kindergarteners



When students entered kindergarten in the fall 2000, only 5% were successful at achieving benchmark-level performance on all four foundational skills. Students' text-reading abilities mirrored the performance on the foundational assessments. A total of 4% of students were reading at the text-level benchmark.

Students' scores increased notably at the time spring 2001 assessments were administered. The number of students achieving benchmark-level proficiency on all four foundational skills tests increased to 60%. This is a 55% increase from the fall 2000 assessment period. Students meeting benchmark proficiency in text-reading also increased to 39%.

In general students entering kindergarten during fall 2001 entered with more foundational skills. A total of 15% of kindergarteners had five or more foundational skills. The text-reading abilities of students also increased from fall 2000 by 6%. A total of 10% of kindergarten students entered kindergarten reading at a text level of 3 or above.

Despite having two additional assessments, students who were successful at meeting five or more of the foundational skills by the spring 2002 assessments increased to 74%. This is a 59% rise from the fall 2001 testing period. Students' text-reading abilities also surged, with 59% of students reading proficiently at the kindergarten benchmark-level. This growth reflects a 49% gain from fall 2001 and a 20% gain from the previous spring testing period. Students' reading abilities improved throughout the year and from the previous year.

The third cohort of students entered kindergarten during fall 2002 with slightly fewer students (14%) able to reach benchmark proficiency levels on five or more foundational skills and in text-reading (8%). While fewer students entered kindergarten during fall 2002 with fewer skills, the percentage of students meeting benchmark performance levels at the spring 2003 assessments

surpassed the performance of kindergarteners who preceded them. A total of 77% of students had five or more foundational skills by the spring assessments, and 70% were reading at or above the kindergarten benchmark.

While the impact of the Early Success Performance Plan is evident from the overall growth of kindergarten students over these three implementation waves, data over the past three years was further analyzed to examine student performance in respect to the implementation of full-day kindergarten. The full-day kindergarten program, one aspect of the Early Success Performance Plan, was implemented in a variety of schools based on schools' average FARMS ratios. During the 2000–2001 school year, 17 schools implemented full-day kindergarten (Phase 1), followed by an additional 17 schools in 2001–2002 (Phase 2) and an additional 22 schools (Phase 3) in 2002–2003. The remaining schools in MCPS have half-day kindergarten programs. Student data was analyzed at the school level to monitor performance differences at these schools, both when they had half-day programs and when they moved to full-day programs. Table 3 looks at the average rate of growth that was made by students in half-day and full-day programs over the 2002–2003 school year.

Table 3. Mean Growth in Foundational Skills Met, Fall 2002 to Spring 2003

	Mean	*N*	Std. Deviation
Half Day	2.48	4097	1.79
Full Day	3.29	4599	1.85
Total	2.91	8696	1.87

While students in half-day kindergarten programs grew by an average of 2.48 foundational skills by the end of kindergarten, full-day kindergarten students grew by an average of 3.29 foundational skills. This difference in growth was statistically significant.[2] Figures 3 and 4 show the overall percentage of students who had full-day and half-day kindergarten programs in relation to foundational skill development and text-reading ability during the 2002–2003 school year.

[2] Independent Samples *t*-Test: $t(8,633) = -20.87$, $P<.001$

Figure 3. Difference in Percentage Growth in Foundational Skill Acquisition, Fall 2002 to Spring 2003

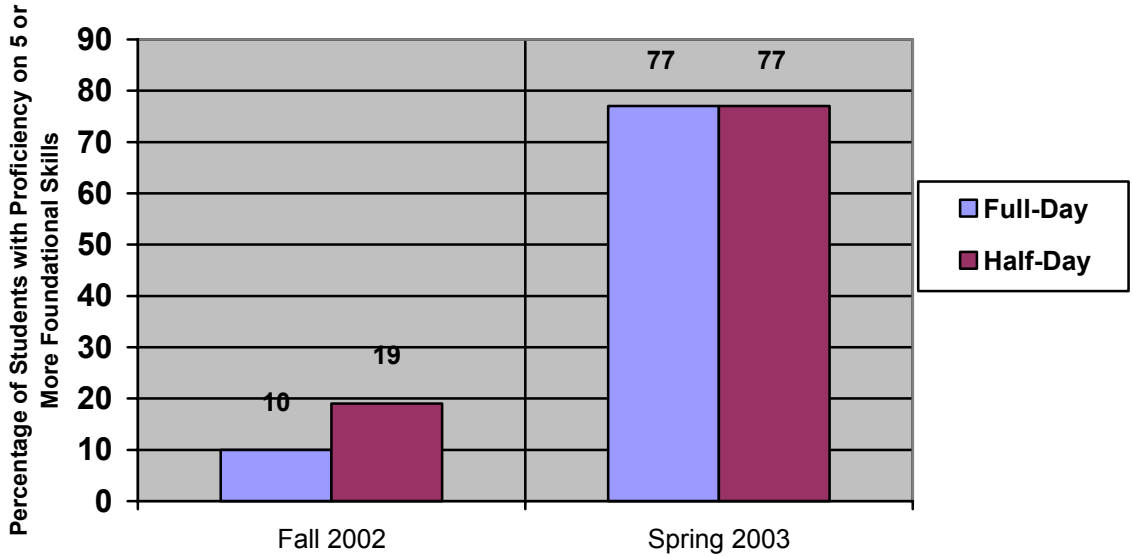
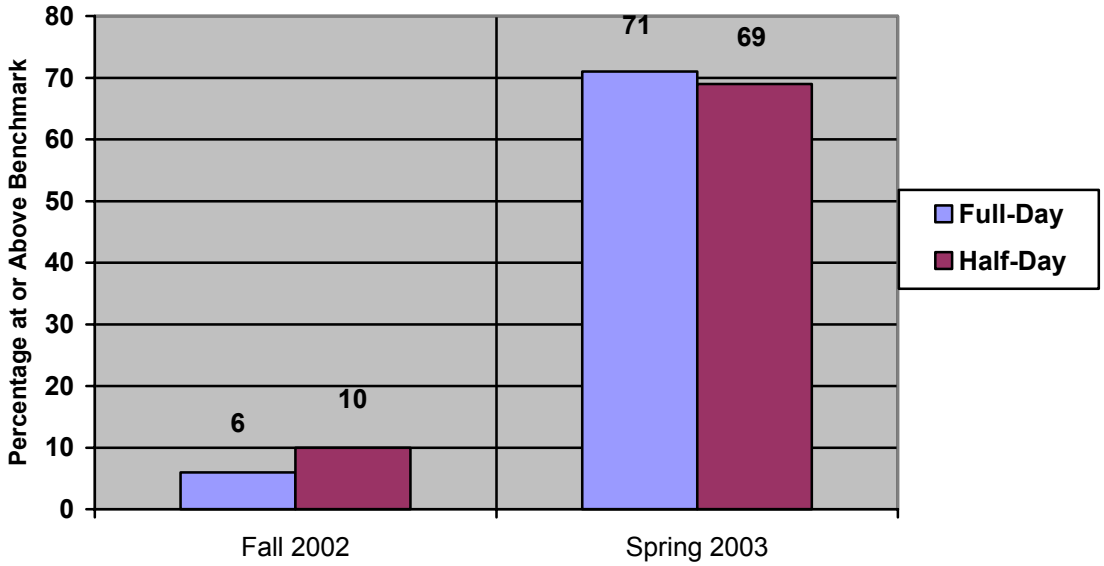


Figure 4. Difference in Percentage Growth in Text-reading Ability, Fall 2002 to Spring 2003

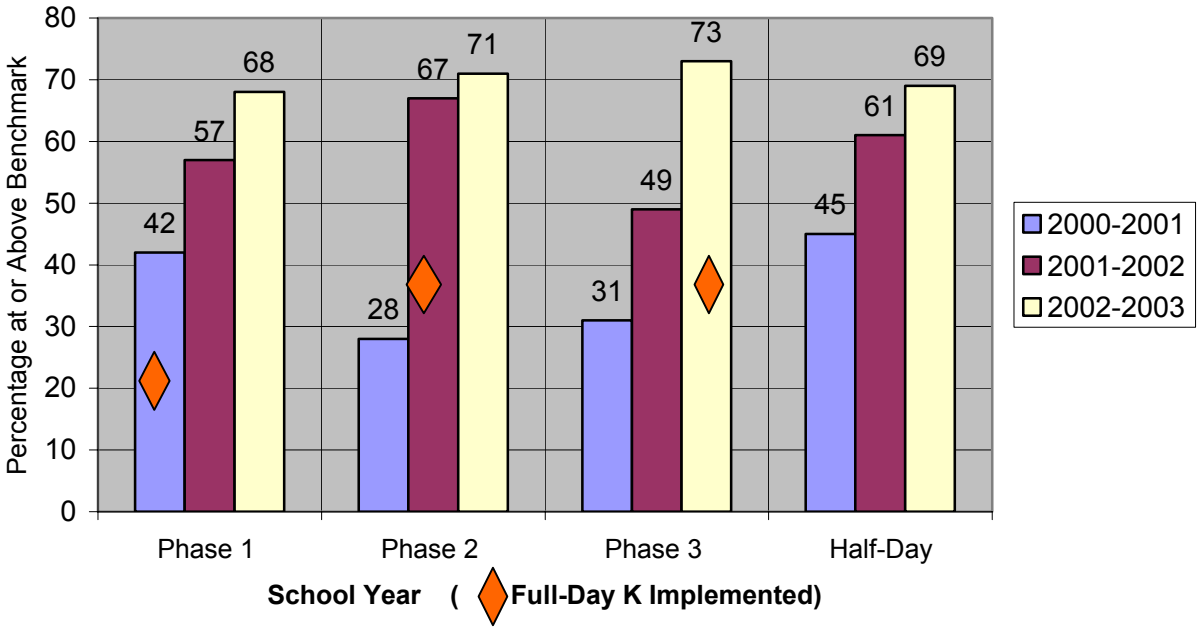


While a lower percentage of students in full-day programs started the 2002–2003 school year with five or more foundational skills, the percentage of students with these skills at the end of the school year equaled that of half-day students. While a lower percentage of students in full-day programs entered school reading at the kindergarten benchmark, more students in full-day programs were reading at the benchmark by the end of the school year. The percentage of students in full-day programs that met benchmark grew by 67% compared with 58% for half-day students in acquiring proficiency on five or more foundational skills. The percentage of students

in full-day programs grew by 65% compared with 59% for half-day students in reading at the text-reading benchmark.

Another analysis used to examine the progress of the Early Success Performance Plan on kindergarten student achievement focused on examining student performance in schools when full-day kindergarten was implemented. Figure 5 highlights the percentage of students in schools during each phase of full-day kindergarten implementation who were reading at or above benchmark-level performance.

Figure 5. Impact of Full-Day Kindergarten on Reading Achievement



In examining the performance of schools in each of the phases of full-day kindergarten implementation, the impact of full-day kindergarten on students' reading levels is clearly evident. Using Phase 1 schools as the baseline year for implementation, 42% of students were reading at the kindergarten benchmark level. During the next two school years, student achievement in Phase 1 schools continued to rise to 57% in 2001–2002 and 68 % in 2002–2003. The percentage of students reading at or above grade level continued to rise by an average 13% each year.

The reading-proficiency levels of students in Phase 1 schools highlight some comparisons with other schools during the 2000-2001 school year. Despite having significant numbers of schools with the highest ESOL and FARMS ratios in MCPS, student performance across these schools surpassed the performance of students in Phase 2 and Phase 3 schools who had half-day kindergarten programs.

As the second wave of full-day kindergarten was implemented during the 2001–2002 school year in Phase 2 schools, a dramatic surge occurred in students overall reading performance compared with the 2000–2001 school year. As full-day kindergarten was implemented in Phase 2 schools, the percentage of students reading at the kindergarten benchmark increased by 39 percentage

points to 67%. The percentage of students reading at benchmark or above at these schools was higher than either Phase 3 schools or half-day schools.

During the third wave of full-day kindergarten implementation, a number of notable findings emerged. First is the continued increase in the percentage of students reading at or above kindergarten benchmark in both Phase 1 and Phase 2 schools. Second is the growth in the percentage of students reading at or above kindergarten benchmark in Phase 3 schools. While 49% of students were successful at reaching benchmark-reading performance during the 2001–2002 school year when Phase 3 schools received a half-day kindergarten program, the number of students able to reach benchmark text-reading levels when full-day kindergarten was initiated increased to 73%. This is a 24% increase from the previous school year.

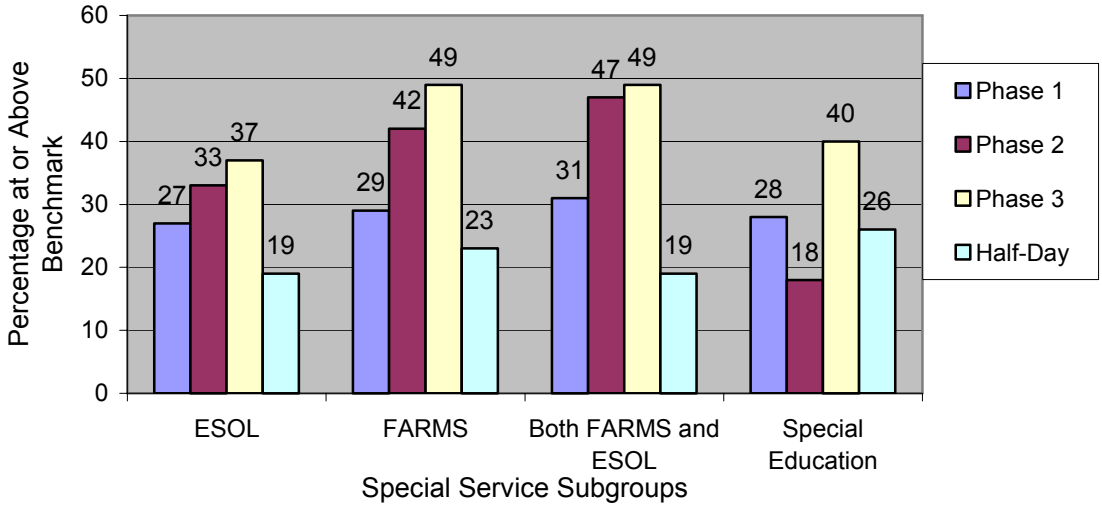
Similar surges in performance are particularly evident for subgroups of students receiving special services, as illustrated in Figure 6. (The actual numbers of students in each special services subgroup are presented in Appendix 2.) ESOL students in Phase 1 schools increased from 29% at or above benchmark to 34%, to 56% by 2003. In Phase 2 schools, ESOL students achieving benchmark increased from 17% to 36% to 50%, while in Phase 3 schools the increase was from 13% to 17% to 50%. In schools with half-day kindergarten, the percentage change of ESOL students achieving benchmark performance was 25% to 23% to 44%.

A similar pattern was evident for FARMS students. FARMS students in Phase 1 schools increased from 35% at or above benchmark to 51%, to 64% by 2003. In Phase 2 schools, FARMS students achieving benchmark increased from 19% to 53% to 61%, while in Phase 3 schools the increase was from 14% to 28% to 63%. In schools with half-day kindergarten, the percentage change of ESOL students achieving benchmark performance went from 19% to 28% to 42%.

For students affected by both poverty and second language learning, the percentage change in those achieving benchmark performance in Phase 1 schools went from 26% to 33% to 57%. In Phase 2 schools, these students improvement went from 7% to 27% to 54%, and in Phase 3 the change was from 4% to 12% to 53%. For half-day kindergarten schools, the increase for this subgroup of students went from 12% to 17% to 31%.

The pattern for special education students was similar, with increases in Phase 1 schools going from 22% to 41% to 50% achieving benchmark by 2003. In Phase 2 schools, the pattern was different as special education students achieving benchmark performance went from 21% to 60% to 39%. Consistent increases returned in Phase 3 schools with the percentage of special education students reaching benchmark went from 17% to 44% to 57%, and in half-day kindergarten schools, the change was from 28% to 42% to 54%.

Figure 6. Increase in Percentage of Students Performing at or Above Text-reading Benchmark by the End of Kindergarten, by Special Services Subgroups from 2000–2001 to 2002-2003

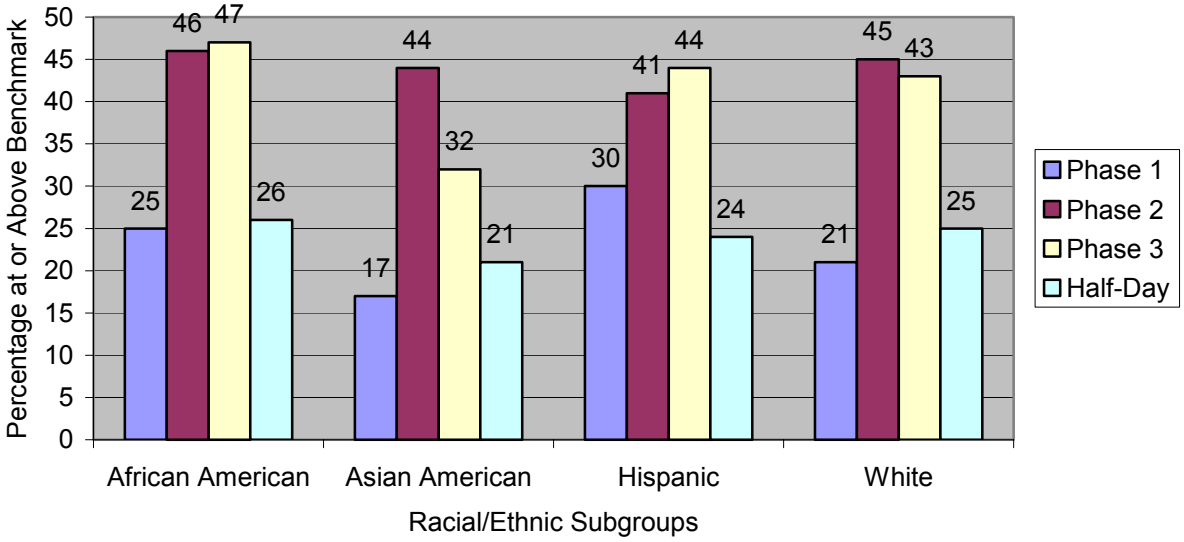


Students from every racial/ethnic group improved performance from spring 2001 to spring 2003. The growth of these subgroups is presented in Figure 7. (The actual number of students in each racial/ethnic subgroup is presented in Appendix 3.) The improvement for African American and Hispanic students was particularly important, as these subgroups had higher percentages of students achieving benchmark performance in schools with full-day kindergarten than in schools with half-day kindergarten programs.

African American students in Phase 1 schools increased from 44% at or above benchmark to 55%, to 69% by 2003. In Phase 2 schools, African American students achieving benchmark increased from 26% to 64% to 72%, while in Phase 3 schools the increase went from 26% to 45% to 73%. In schools with half-day kindergarten, the percentage change of African American students achieving benchmark performance went from 27% to 44% to 53%.

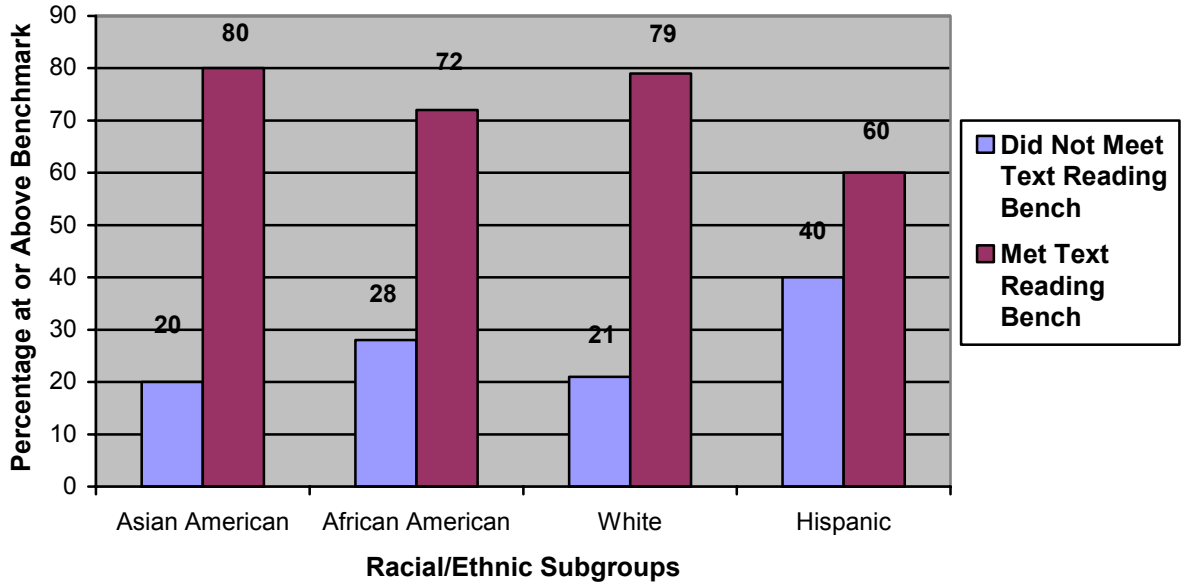
Hispanic students in Phase 1 schools increased from 56% at or above benchmark to 71% to 77%, by 2003. In Phase 2 schools, Hispanic students achieving benchmark increased from 18% to 54% to 59%, while in Phase 3 schools the increase went from 12% to 23% to 56%. In schools with half-day kindergarten, the percentage change of Hispanic students achieving benchmark performance went from 24% to 32% to 48%.

Figure 7. Increase in Percentage of Students Performing at or Above Text-Reading Benchmark by the End of Kindergarten, by Racial/Ethnic Subgroups from 2000–2001 to 2002–2003



While Figure 7 highlights the growth in African American and Hispanic students' text-reading abilities in schools when full-day kindergarten was implemented, data from 2002–2003 highlight the overall academic achievement these students made in full-day kindergarten programs. During the third year of implementation, 72% of the 1371 African American students and 60% of the 1495 Hispanic students in full-day kindergarten programs met the text-reading benchmark by the end of the academic year.

Figure 8. Percentage of Students in Full-Day Kindergarten Programs Meeting Benchmark in Text-Reading in Spring 2003



Are these benefits sustained through Grade 2?

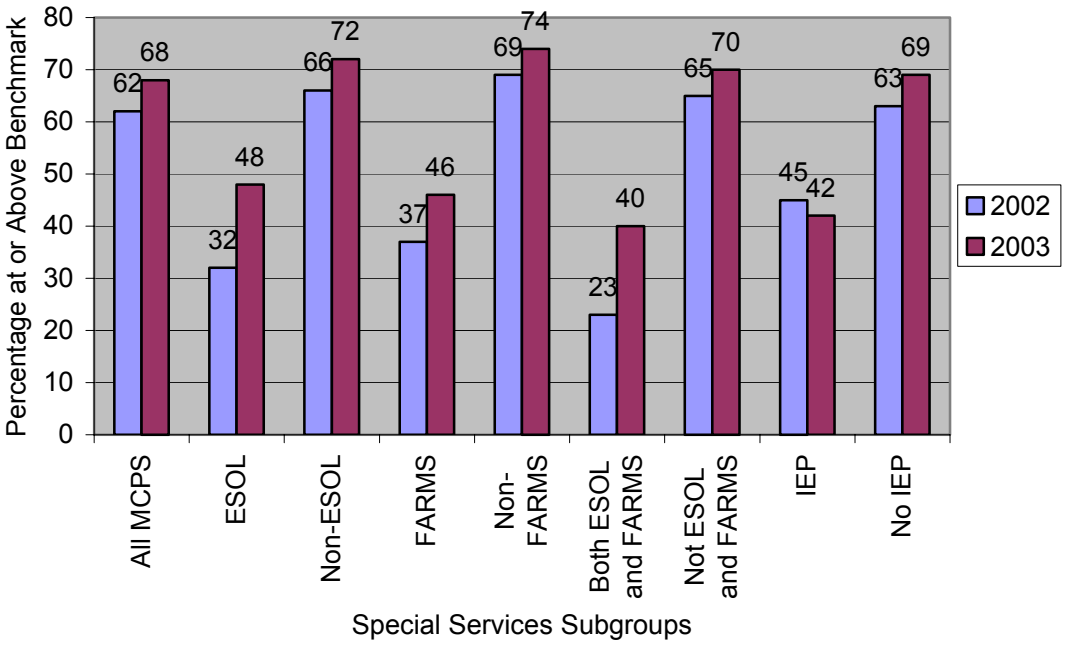
By the end of Grade 2, Cohort 1 students had received several components of the Early Success Performance Plan. All students had received the revised kindergarten curriculum and assessments in reading and students in Phase 1 schools had participated in the full-day kindergarten program. All Cohort 1 students received the revised reading curriculum in Grade 2 and those enrolled in Title 1 schools were offered the opportunity to participate in the Extended Learning Opportunities Summer Program in 2002. As they had done in kindergarten, this cohort of students continued to show improvement on achieving benchmark performance targets by the end of Grade 2, compared with the previous year's students who were not recipients of the Early Success Performance Plan. The change in benchmark performance from spring 2002 to 2003 is presented in Table 4. It is important to note that the tasks associated with benchmark performance in Grade 2 are more complex than those expected in kindergarten. Students in Grade 2 must not only be able to read higher levels of text accurately, they must also demonstrate sufficient comprehension of the text.

Table 4. Students Able to Meet Benchmark by the End of Grade 2, by Cohort

	Cohort 0, 2001-2002			**Cohort 1, 2002-2003**		
	Total *N*	***N***	**%**	**Total *N***	***N***	**%**
All MCPS	6,250	3,879	62	6,741	4,548	68
Phase 1	1,076	408	38	1,148	606	53
Phase 2	897	420	47	959	564	59
Phase 3	1,207	669	55	1,174	760	65
Half Day	3,070	2,382	78	3,460	2,618	76
ESOL	728	232	32	1,158	551	48
Non-ESOL	5,522	3,647	66	5,583	3,997	72
FARMS	1,383	508	37	1,525	695	46
Non-FARMS	4,867	3,371	69	5,216	3,853	74
ESOL and FARMS	412	96	23	647	257	40
Not ESOL and FARMS	5,838	3,783	65	6,094	4,291	70
IEP	345	155	45	439	184	42
No IEP	5,905	3,724	63	6,302	4,364	69
African American	1,126	519	46	1,254	711	57
American Indian	28	21	75	24	11	46
Asian American	792	575	73	874	685	78
Hispanic	1,095	382	35	1,282	603	47
White	3,209	2,382	74	3,305	2,538	77

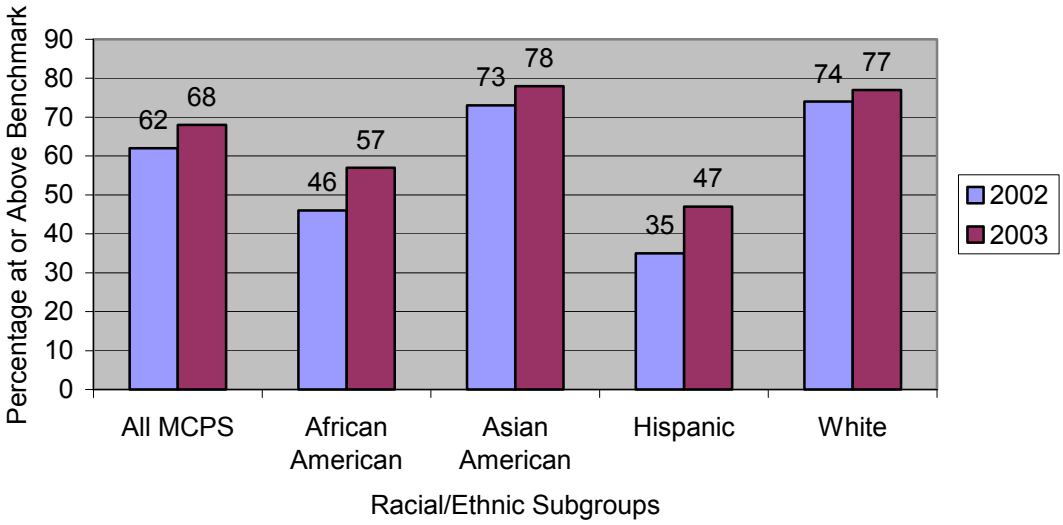
The greatest gains in percentage of students able to achieve benchmark performance by the end of Grade 2 are shown by students affected by poverty and second language learning. This improvement is illustrated in Figure 9, and suggests that the Early Success Performance Plan continues to narrow performance disparities among student subgroups.

Figure 9. Percentage of Cohort 1 Students Meeting Benchmark in Grade 2 Compared With Previous Year's Students, by Services Received



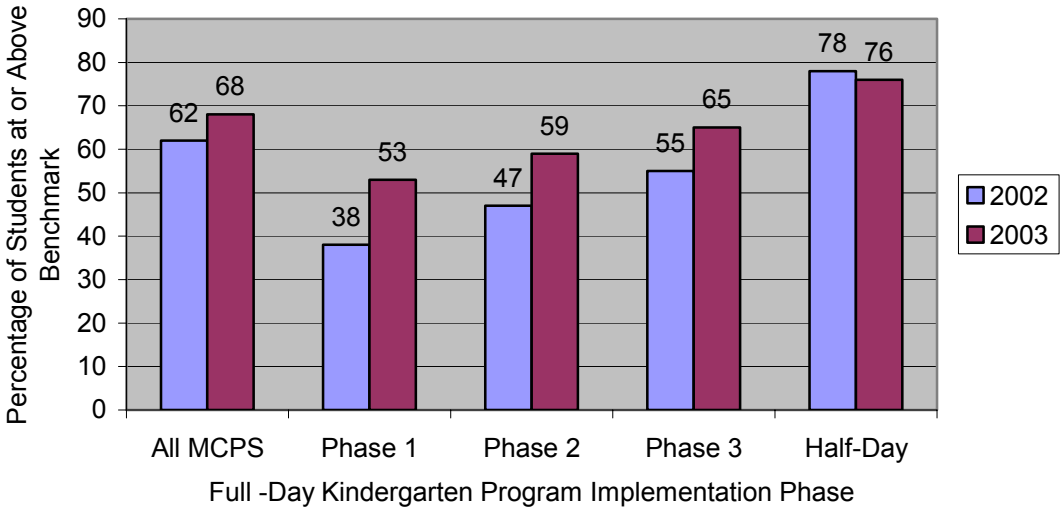
African American and Hispanic students demonstrate a similar pattern of improved performance, as illustrated in Figure 10. African American students who were able to reach benchmark performance increased by 11 percentage points, from 46% to 57%, which narrowed the achievement gap by 5 percentage points. Hispanic students also increased the percentage of students able to reach benchmark by 12 percentage points, from 35% to 47%, which narrowed the achievement gap by 6 percentage points.

Figure 10. Percentage of Cohort 1 Students Meeting Benchmark in Grade 2 Compared With Previous Year's Students, by Racial/Ethnic Subgroup



A similar pattern is evident when examining the change in percentage of students meeting benchmark performance, based on the phase of implementation of full-day kindergarten. Figure 11 illustrates the decreasing achievement gap in school reading performance between those students attending schools most affected by poverty and second language learning and those students attending schools less affected by poverty and second language learning. Schools included in later implementation phases in full-day kindergarten had fewer students eligible to receive FARMS. Students in half-day programs attend schools where FARMS ratios are among the lowest in the county.

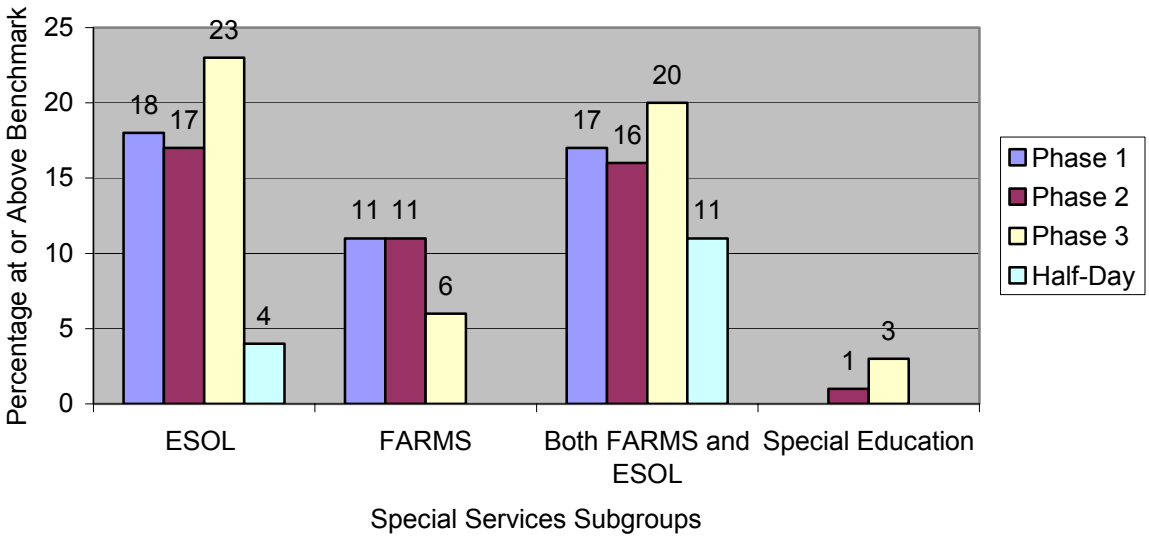
Figure 11. Percentage of Cohort 1 Students Meeting Benchmark in Grade 2 Compared With Previous Year's Students, by Phase of Full-Day Kindergarten Implementation



Are there differential performance patterns for students receiving special services based on kindergarten program received?

Previous studies have demonstrated that students affected by poverty and second language learning improve and grow markedly more when they have received full-day kindergarten services (Nielsen & Cooper-Martin, 2002). This pattern continued as students who had benefited from the Early Success Performance Plan initiatives demonstrated increased percentages of students able to meet benchmark performance even as the number of students requiring these special services increased. This pattern of improved performance is presented in Figure 12. (The numbers and percentages of students able to meet the benchmark performance level by the end of Grade 2 for Cohorts 0 and 1 are presented for these subgroups of students in Appendix 4.)

Figure 12. Increase in Percentage of Students Receiving Special Services Meeting Benchmark Performance by the End of Grade 2, 2002 to 2003



ESOL students in Phase 1 schools increased from 24% meeting benchmark to 42%, from 28% to 45% in Phase 2 schools, from 28% to 51% in Phase 3 schools, and from 54% to 58% in the half-day kindergarten schools. FARMS students demonstrated a similar pattern, with increases from 33% to 44% in Phase 1 schools, 34% to 45% in Phase 2 schools, and 39% to 45% in Phase 3 schools. In the half-day kindergarten schools, FARMS students declined from 51% achieving benchmark to 50% in 2003.

For students affected by both poverty and second language learning, the benefits of the Early Success Performance Plan initiatives are apparent. These students in Phase 1 schools increased 17 percentage points, from 22% meeting benchmark to 39%; in Phase 2 schools, 16 percentage points, from 20% to 36%; in Phase 3 schools, 20 percentage points, from 23% to 43%; and in half-day kindergarten schools, 11 percentage points, from 34% to 45%.

The performance of special education students was not consistent with the other groups receiving special services. Their percentage of students achieving benchmark status increased in Phase 2 and Phase 3 schools and dropped in Phase 1 and half-day kindergarten schools. The smaller

number of special education students and the inconsistencies in test administration protocol that occurred in the early implementation stages of the MCPS Assessment Program Primary Reading may have affected these results for special education students.

In addition to observing the increases in the numbers and percentages of students achieving benchmark performance, it is important to consider differences in the highest text level read between students who received components of the Early Success Performance Plan and those who did not. The average highest text level read for students completing Grade 2 in 2002 and for students completing Grade 2 in 2003 was obtained and used for analysis. These average highest text levels also were used in subgroup analyses based on special services received and type of kindergarten program completed. They are presented in Table 5. The range of text levels completed by Grade 2 students in both Cohort 0 and Cohort 1 students was from 3 to 40. Only Cohort 1 students enrolled in Phase 1 schools had received a full-day kindergarten program.

Table 5. Average Highest Text Level Achieved by the End of Grade 2 for Students Receiving Special Services, 2002 and 2003

	All Students		ESOL		FARMS		FARMS and ESOL		Special Education	
	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
All MCPS	26.11	26.67	19.20	22.26	20.32	21.89	17.41	20.70	21.79	20.80
Phase 1	20.47	23.78	17.11	21.49	19.54	21.97	17.18	20.97	16.40	17.30
Phase 2	23.04	24.72	19.14	21.75	19.89	21.58	17.25	19.54	18.32	17.36
Phase 3	25.41	26.54	19.31	22.38	20.83	21.73	18.20	20.77	19.53	20.51
Half-Day	29.26	28.21	23.04	24.05	22.84	22.27	17.68	21.32	25.50	22.62

As only Cohort 1 students enrolled in Phase 1 schools had received a full-day kindergarten program, the most important comparisons to be made with regard to average highest text-reading level are those between Cohort 0 students (ending Grade 2 in 2002) and Cohort 1 students (ending Grade 2 in 2003) who were enrolled in Phase 1 schools. Cohort 1 students reached a higher average text-reading level for every subgroup. The difference in average highest text-reading level for all students was 3.32, for ESOL students this difference was 4.38, for FARMS students this difference was 2.43, and for those receiving both FARMS and ESOL this difference was 3.79. All these differences are statistically significant. (See Appendix 5 for results of *t*-test analyses.) When considering students who received special education services enrolled in Phase 1 schools, the difference in average highest text level read was 0.90; it is the only difference that was not statistically significant.

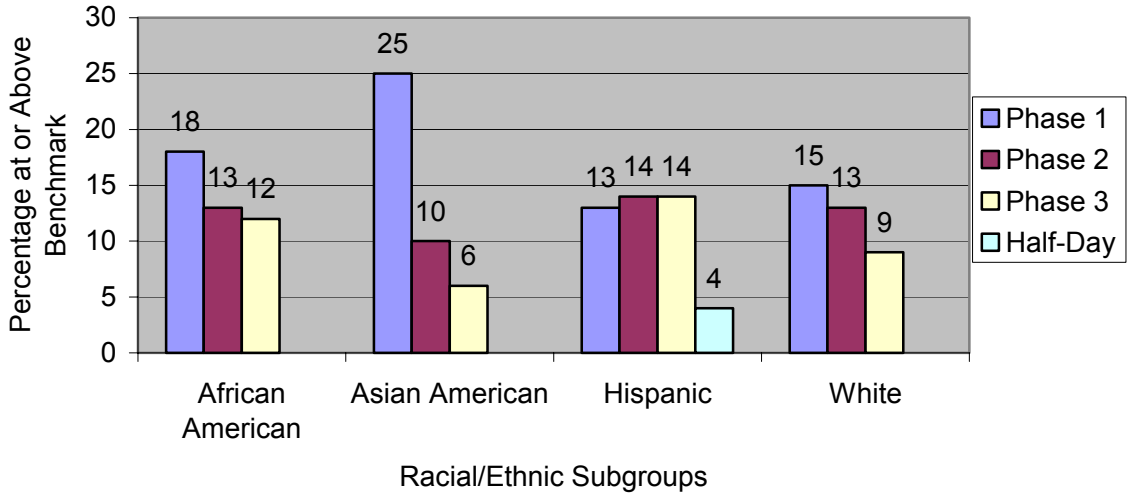
These gains are most impressive in light of the changing demographics in Phase 1 schools. The description of Cohort 0 and Cohort 1 students enrolled in Phase 1 schools is presented in Table 1 and Appendix 1. The percentage of students receiving ESOL services rose 12 percentage points, moving from 28%t in 2001–2002 to 40% in 2002–2003. Despite this 164-student increase of second language learners, the average highest text level read went up 4.38 text-reading levels, from 17.11 in 2001–2002 to 21.49 in 2002-2003. Additionally, the percentage of students receiving both ESOL and FARMS services rose 10 percentage points, moving from 21% to 31%. Despite this 130-student increase, the average highest text level read increased 3.79 text-reading

levels from 17.18 in 2001-2002 to 20.97 in 2002-2003. Phase 1 schools also showed a 1% rise in the percentage of students receiving FARMS services, and a 2% rise in the percentage of students receiving special education services. Increases in average highest text level read were 2.43 and 0.9 respectively.

Are there differential performance patterns for racial/ethnic subgroups of students based on kindergarten program received?

The Early Success Performance Plan has enabled students affected by poverty and second language learning to begin closing the achievement gap between their achievement and that of their peers who do not receive special services. Similar patterns in closing the achievement gap for students of various racial/ethnic groups are presented in Figure 13. (The actual numbers and percentages of students achieving benchmark performance by the end of Grade 2 for each racial/ethnic group are presented in Appendix 6). A greater increase in the percentage of students able to achieve benchmark performance has occurred for most racial/ethnic groups when students were able to participate in full-day kindergarten programs.

Figure 13. Increases in the Percentage of Racial/Ethnic Subgroups of Students Able to Achieve Benchmark Performance by the End of Grade 2, 2002 to 2003



In addition to observing the increases in the numbers and percentages of students achieving benchmark performance, it is important to consider differences in the highest text-level read between students who received components of the Early Success Performance Plan and those that did not. The average highest text level read for students completing Grade 2 in 2002 and for students completing Grade 2 in 2003 was obtained and used for analysis. The changes in average highest text level read by racial/ethnic subgroup is presented in Table 6.

Table 6. Average Highest Text Level Achieved by the End of Grade 2 for Students by Racial/Ethnic Subgroup, 2002 and 2003

	All Students		African American		Asian American		Hispanic		White	
	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
All MCPS	26.11	26.67	22.57	24.13	28.30	28.91	20.09	22.22	28.85	28.80
Phase 1	20.47	23.78	20.85	24.31	21.64	27.08	18.93	21.76	23.04	26.97
Phase 2	23.04	24.72	21.60	23.87	26.49	27.52	19.76	21.18	25.53	27.80
Phase 3	25.41	26.54	23.31	24.35	28.46	28.69	20.31	22.53	27.52	29.33
Half-Day	29.26	28.21	24.59	23.96	30.81	29.85	23.22	24.13	30.07	28.96

As only Cohort 1 students enrolled in Phase 1 schools had received a full-day kindergarten program, the most important comparisons to be made with regard to average highest text-reading level, are those between Cohort 0 students (ending Grade 2 in 2002) and Cohort 1 students (ending Grade 2 in 2003) who were enrolled in Phase 1 schools. The difference in average highest text-level read was 3.45 for African American students, for Asian American students this difference was 5.44; for Hispanic students this difference was 2.83; and for White students this difference was 3.93. All these differences are statistically significant. (The table with information regarding the *t*-test analyses is included in Appendix 5.)

Is the performance on locally developed assessments linked to the performance on nationally normed assessments?

One purpose of the MCPS Assessment Program is to provide formative information to teachers that will indicate if students are on their way to meeting standards on state and national assessments. In spring 2002, Grade 2 students participated in both CTBS testing and the MCPS Assessment Program Primary Reading. In addition, Grade 3 students participated in the MSA, which was administered for the first time in March 2003. The MSA included both a norm-referenced test (NRT) component and a criterion-referenced test (CRT) component. These Grade 3 students had scores from their participation in the local assessments as second graders in spring 2002. A summary of the correlation coefficients found for these three different reading assessment measures is presented in Table 7.

Table 7. Correlation Coefficients for National, State, and Local Assessments of Reading

	Grade 2 CTBS Reading Scale Score (Spring 2002)	Grade 3 MSA NRT Scale Score (Spring 2003)	Grade 3 MSA CRT Scale Score (Spring 2003)	Grade 2 Text-reading Level (90% accuracy and comprehension) (Spring 2002)
Grade 2 CTBS Reading Scale Score	1.000 *n*=9,800	.423* *n*=8,940	.620* *n*=8958	.492* *n*=9,170
Grade 3 MSA NRT Scale Score	.423* *n*=8,940	1.000 *n*=9,267	.823* n=9,267	.498* *n*=8,672
Grade 3 MSA CRT Scale Score	.620* *n*=8,958	.823* n=9,267	1.000 n=10,264	.597* *n*=8,729
Grade 2 Text-reading Level (90% accuracy & comprehension) (Spring 2002)	.492* *n*=9,170	.498* *n*=8,672	.597* *n*=8,729	1.000 *n*=9,498

* Significant at the 0.01 level (2-tailed).

All of these correlation coefficients were statistically significant, indicating that there is a relationship between the different measures of reading performance. The magnitude of these coefficients is typical for measures predicting academic success, which rarely exceed .3 to .4 (Nunnally & Bernstein, 1994). The local assessments were designed to align with state curriculum standards, so the correlation between the local assessment and the assessments used for state accountability purposes was noteworthy.

Most important to classroom teachers is feeling that student performance on local assessments will point to potential success at meeting standards set on state and national assessments. The following expectancy tables offer additional evidence that the MCPS Assessment Program Primary Reading offers predictive validity on the MSA and CTBS. The relationship between meeting local benchmark standards in Grades 1 and 2 with success on the MSA is outlined in Table 8. Ninety percent of the students who met the Grade 1 benchmark on the MCPS Assessment Program Primary Reading went on to meet benchmark on the MSA. This statistically significant relationship $\chi^2(1, n = 7560) = 1714.4$, $P < .01$ is seen again in Grade 2. Ninety-three percent of the students who met the Grade 2 benchmark on the MCPS Assessment Program Primary Reading went on to meet benchmark on the MSA $\chi^2(1, n = 9{,}236) = 2744.5$, $P < .01$.

A similar pattern of alignment between local benchmarks and scoring at or above the national median percentile rank on the CTBS is presented in Table 9. Eighty-four percent of the students who met the Grade 1 benchmark on the MCPS Assessment Program Primary Reading went on to meet benchmark on the CTBS. This statistically significant relationship $\chi^2(1, n = 8750) =$

1957.1, $p < .01$ is seen again in Grade 2. Eighty-two percent of the students who met the Grade 2 benchmark on the MCPS Assessment Program Primary Reading went on to meet benchmark on the CTBS $\chi^2(1, n = 9673) = 2359.8, P < .01$.

Table 8. Comparing Benchmark Performance Status on Local Assessments and the MSA

	Did not meet MSA benchmark		**Met MSA benchmark**	
	N	**% of total**	***N***	**% of total**
All students who took spring 2001assessments				
Did not meet Grade 1 benchmark (*n*=3,474)	1,893	54	1581	46
Met Grade 1 benchmark (*n*=4,086)	426	10	3660	90
All students who took spring 2002 assessments				
Did not meet end of Grade 2 benchmark (*n*=4,282)	2,500	58	1,782	42
Met end of Grade 2 benchmark (*n*=4,954)	383	7	4571	93

Note: MSA benchmark is to achieve a scale score of 404 or higher.

Table 9. Comparing Benchmark Performance Status on Local Assessments and the CTBS

	Did not meet CTBS benchmark		**Met CTBS benchmark**	
	N	**% of total**	***N***	**% of total**
All students who took spring 2001assessments				
Did not meet Grade 1 benchmark (*n*=3,616)	2,229	62	1,387	38
Met Grade 1 benchmark (*n*=5,134)	816	16	4,318	84
All students who took spring 2002 assessments				
Did not meet end of Grade 2 benchmark (*n*=3,503)	2,345	67	1,158	33
Met end of Grade 2 benchmark (*n*=6,170)	*1,095*	*18*	*5,075*	*82*

Note: CTBS benchmark is to achieve a national percentile rank of 50 or above.

SUMMARY AND RECOMMENDATIONS

The Office of Shared Accountability periodically has evaluated an ambitious wave of reform efforts supported by the Montgomery County Public Schools (MCPS) Early Success Performance Plan during its three years of implementation. The findings of numerous research and evaluation studies document the success of these initiatives in improving student achievement, particularly for those students affected by poverty and second language learning. The findings in this latest report affirm the positive impact of the Early Success Performance Plan.

The kindergarten initiatives that began in fall 2000, which have now encompassed three phases of schools implementing full-day kindergarten programs, have shown the impressive results described below.

Findings

The percentage of students able to achieve benchmark performance targets on foundational skills and text-reading in kindergarten increases steadily every year.

- On foundational skill benchmarks, percentages grew from 60 to 74 to 77.
- On the text-reading benchmark, percentages grew from 39 to 59 to 70.

The benefits of full-day kindergarten programs have become increasingly evident.

- In the 2002–2003 school year, there was statistically significantly more growth from fall to spring in the number of foundational skill benchmarks achieved by full-day kindergarten students (average growth of 3.29) than half-day kindergarten students (average growth of 2.48).
- The percentage of students reading at or above benchmark text level was higher in full-day kindergarten programs than half-day programs, with 71% in full-day compared with 69% in half-day programs.
- There is continuous improvement in all schools over the three years of implementation; however, there is a surge in performance gains during the year when full-day kindergarten is implemented. Phase 2 schools increased the percentage of students at text-reading benchmark from 28% to 67%, and Phase 3 schools increased from 49% to 73% during the first year of full-day kindergarten implementation.

The performance of students receiving special services grows steadily every year, as higher percentages of students are able to achieve benchmark performance for text-reading in kindergarten.

- English as a Second Language (ESOL) students in Phase 1 schools able to reach benchmark increased from 29% to 34% to 56%. In Phase 2 schools the increase was from 17% to 36% to 50%, while in Phase 3 schools the increase was from 13% to 17% to 50%. In schools with half-day kindergarten, the percentage of ESOL students achieving benchmark performance was from 25% to 23% to 44%.
- Free and Reduced-price Meals Services (FARMS) students in Phase 1 schools able to reach benchmark increased from 35% to 51% to 64%. In Phase 2 schools the increase was from 19% to 53% to 61%, while in Phase 3 schools the increase was from 14% to 28% to 63%. In schools with half-day kindergarten, the percentage of ESOL students achieving benchmark performance was from 19% to 28% to 42%.

- For students receiving both FARMS and ESOL services, the percentage of students able to meet benchmark in Phase 1 schools changed from 26% to 33% to 57%. In Phase 2 schools these percentages changed from 7% to 27% to 54%, and in Phase 3 schools the change was from 4% to 12% to 53%. For half-day kindergarten schools, the percentage change for this subgroup of students was from 12% to 17% to 31%.
- Special education students in Phase 1 schools increased from 22% to 41% to 50%, achieving benchmark by 2003. In Phase 2 schools, the pattern was different as special education students achieving benchmark performance moved from 21% to 60% to 39%. Consistent increases returned in Phase 3 schools, with the percentage of special education students reaching benchmark moving from 17% to 44% to 57%, and in half-day kindergarten schools, the percentages moved from 28% to 42% to 54%.

Students from every racial/ethnic subgroup improved performance from spring 2001 to spring 2003 in kindergarten text-reading; however, the growth by African American and Hispanic students was particularly important.

- The number of African American students in Phase 1 schools increased from 44% at or above benchmark to 55% to 69%. In Phase 2 schools African American students achieving benchmark increased from 26% to 64% to 72% while in Phase 3 schools the increase was from 26% to 45% to 73%. In schools with half-day kindergarten, the percentage of change African American students achieving benchmark performance moved from 27% to 44% to 53%.
- Hispanic students in Phase 1 schools increased from 33% at or above benchmark to 55% to 69% by 2003. In Phase 2 schools they increased from 18% to 54% to 59% while in Phase 3 schools the increase was from 12% to 23% to 56%. In schools with half-day kindergarten, the percentage change of Hispanic students achieving benchmark performance moved from 24% to 32% to 48%.
- By spring 2003, 72% of African American students in full-day kindergarten classes met the text-reading benchmark compared to 79% of white students and 60% of Hispanic students in full-day programs who met the text-reading benchmark.

The percentage of all Grade 2 students able to read text at or above benchmark in 2003 increased to 68% from 62% in 2002, with greatest gains demonstrated for those students most affected by poverty and second language learning.

- The number of ESOL students reaching the text-reading benchmark increased by 16 percentage points, moving from 32 to 48; while the number of their non-ESOL peers increased by 6 percentage points, moving from 66 to 72.
- The number of FARMS students reaching the text-reading benchmark increased by 9 percentage points, moving from 37 to 46; while the number of their non-FARMS peers increased by 5 percentage points, moving from 69 to 74.
- Students receiving both ESOL and FARMS reaching the text-reading benchmark increased by 17 percentage points, moving from 23 to 40; while the number of their non-ESOL and FARMS peers increased by 5 percentage points, moving from 65 to 70.
- The number of students with IEPs reaching the text-reading benchmark dropped by 3 percentage points, moving from 45 to 42; while the number of their non-IEP peers increased by 6 percentage points, moving from 63 to 69. This change may reflect an

increase in the number of special education students tested as teachers were made more aware of test administration expectations.

The achievement gap between African American and Hispanic and Asian American and White Grade 2 students narrowed between 2002 and 2003.

- The number of African American students who were able to reach benchmark performance in Grade 2 increased by 11 percentage points, from 46% to 57%, which narrowed the achievement gap by 5 percentage points.
- Hispanic students also increased the percentage of students able to reach benchmark by 12 percentage points, from 35% to 47%, which narrowed the achievement gap by 6 percentage points.

The achievement gap between the performance of schools most affected by poverty and overall county performance continues to close.

- The difference in the percentage of students able to reach the text-reading benchmark between Phase 1 schools and all of MCPS went from 24 in 2002 (62% in MCPS and 38% in Phase 1 schools) to 15 in 2003 (68% in MCPS and 53% in Phase 1 schools.)
- The difference in the percentage of students able to reach the text-reading benchmark between Phase 2 schools and all of MCPS went from 15 in 2002 (62% in MCPS and 47% in Phase 2 schools) to 9 in 2003 (68% in MCPS and 59% in Phase 2 schools.)
- The difference in the percentage of students able to reach the text-reading benchmark between Phase 3 schools and all of MCPS went from 7 in 2002 (62% in MCPS and 55% in Phase 3 schools) to 3 in 2003 (68% in MCPS and 65% in Phase 3 schools.)

Sustained effects are demonstrated at the end of Grade 2, as students in Phase 1 schools who received the Early Success Performance Plan outperformed their peers who did not receive the plan.

- The average highest Grade 2 text-reading level for all students in 2003 was 23.78, an increase of 3.32 text-reading levels over the average highest Grade 2 text-reading level of 20.47 for all students in 2002.
- The average highest Grade 2 text-reading level for ESOL students in 2003 was 21.49, an increase of 4.38 over the average highest Grade 2 text-reading level of 17.11 for ESOL students in 2002.
- The average highest Grade 2 text-reading level for FARMS students in 2003 was 21.97, an increase of 2.43 over the average highest Grade 2 text-reading level of 19.54 for FARMS students in 2002.
- The average highest Grade 2 text-reading level for ESOL and FARMS students in 2003 was 20.97, an increase of 3.79 over the average highest Grade 2 text-reading level of 17.18 for ESOL and FARMS students in 2002.
- The average highest Grade 2 text-reading level for African American students in 2003 was 24.31, an increase of 3.46 over the average highest text-reading level of 20.85 for the African American students in 2002.
- The average highest Grade 2 text-reading level for Hispanic students in 2003 was 21.76, an increase of 2.83 over the average highest text-reading level of 18.93 for the Hispanic students in 2002.

The MCPS Assessment Program Primary Reading provides teachers with information about student performance to support instructional decisions. These locally developed assessments also are showing predictive validity for state and national assessments.

The benchmarks established for the MCPS Assessment Program Primary Reading are valuable predictors of performance on state and national assessments.

- The correlation between the local assessment and the Comprehensive Tests of Basic Skills (CTBS) is .492, with the Maryland School Assessment (MSA) norm-referenced test is .498, and with the MSA criterion-referenced test it is .597. These correlation coefficients are all statistically significant.
- When students meet the Grade 2 benchmark on the locally developed assessment, 93% of them achieve proficiency on the MSA.
- When students meet the Grade 2 benchmark on the locally developed assessment, 82% of them score at or above the national median percentile rank on the CTBS.
- The relationships between the performance of Grade 1 and 2 students on local assessments and the MSA and the CTBS are statistically significant.

An important reason for monitoring the implementation and student performance outcomes related to the Early Success Performance Plan is to suggest ways to refine various components of the initiatives to support overall continuous improvement. The following recommendations are offered, based on the findings of this report and accompanying reports for the 2002–2003 school year.

Recommendations

1. Continue to support funding of the Early Success Performance Plan.

The initiatives included in the Early Success Performance Plan have consistently produced improvements in student achievement. Cohort 1 students, who did not even receive all components of this comprehensive program, have demonstrated achievement gains on both the CTBS and locally developed assessments. Based on the kindergarten findings, each subsequent cohort of students steadily improves. The Early Success Performance Plan is making a difference.

2. Continue to expand full-day kindergarten programs to all schools.

When full-day kindergarten programs are part of a concerted and comprehensive improvement effort, the results are impressive. A marked improvement has occurred with every phase of implementation and has provided much-needed support to students affected by poverty and second language learning. All students deserve the opportunities that full-day kindergarten can offer.

3. Use technology in a more efficient and effective manner to support the Early Success Performance Plan.

The locally developed assessments have proven to be valuable tools for teachers, but administering these tools and the required data entry are very time-consuming. If technology was made available to teachers, such as hand-held wireless computers, the data collected through local assessments could be entered immediately and processed more efficiently.

4. Continue to evaluate the Early Success Performance Plan, especially the most recently added components.
A new curriculum and assessment program in prekindergarten and Grade 3 provide a means to strengthen the Early Success Performance Plan considerably. These initiatives should be examined separately to support refinement, but also as an on-going part of the longitudinal study of the Early Success Performance Plan to determine the net effects of all components.

5. Plan for ongoing training of teachers to ensure that the Early Success Performance Plan is implemented as designed.
As the program enters its fourth year of implementation, it is important to assure that newly hired teachers receive the same level of training as their colleagues did during preliminary phases of implementation. It is also important to provide on-going training as a means to ensure fidelity of implementation and to solicit feedback for refinement efforts.

6. Conduct further exploration of the impact of the support parents provide as their child's first teacher.
Examine MCPS efforts to work with parents to understand the value of foundational literacy skills and to provide them with activities that they can use at home to extend student learning. Monitor the component of the Early Success Performance Plan to support parent involvement, through such means as parent-friendly information on assessments, communication of student progress, and materials that reflect cultural and linguistic differences of the student population.

7. Disseminate longitudinal findings of the Early Success Performance Plan with potential partners such as corporations, external research organizations, and other school districts, to highlight the impact systemic reform initiatives can have on student performance, and to foster relationships that can help expand current and future programs planned in MCPS.
The performance of students who participated in the Early Success Performance Plan emphasizes the impact that full-day kindergarten, smaller class sizes, a standards-based curriculum, diagnostic assessments, professional development, extended-day and extended-year programs, and increased family/school communication can have on the progress of our youngest students. These individual elements combine to form a cohesive program that has helped improve benchmark performance levels on text-reading skills and text-reading over the past three years.

Providing corporate businesses and external research organizations with the results of the Early Success Performance Plan will work to strengthen current and future initiatives in MCPS. Local businesses, which will benefit from a more literate and educated work force, will have the opportunity to become outspoken proponents of a documented research initiative that is making positive impacts on students' academic achievement. They can become valuable districtwide partners providing needed technology, technical assistance, and school-based resources. External research organizations also can provide valuable insights, personnel, and new research agendas to strengthen current initiatives and propose ideas not yet developed.

The overall impact this research could have on other school districts also should be emphasized. Given the continued progression of students in kindergarten over the past three years and the benchmark performance levels of Grade 2 students who began the program in kindergarten during the 2000–2001 school year compared with the year prior, the Early Success Performance Plan should be disseminated to other divisions for two important reasons. The first is to provide

other districts with a systemic reform effort that has continually improved student performance. The second is to develop alternative sites where the design of the Early Success Performance Plan can be replicated and studied. Documenting student performance levels at various locations could reiterate the overall potential of this program, despite growing concerns regarding developing programs that adequately address the needs of a steadily rising FARMS and ESOL population.

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APPENDIX 1

Description of Cohort 0 and Cohort 1 Students Included in the Longitudinal Impact Study

	Cohort 0 2001–2002		Cohort 1 2002–2003		Change from Cohort 0 to Cohort 1	
	n	%	*n*	%	*n*	%
All MCPS	6250	100	6741	100	491	0
Phase 1	1076	17	1148	17	72	0
African American	282	26	294	26	12	0
American Indian	5	1	3	<1	-2	-1
Asian American	113	11	111	10	-2	-1
Hispanic	484	45	545	48	61	3
White	192	18	195	17	3	-1
ESOL	298	28	462	40	164	12
FARMS	633	59	686	60	53	1
ESOL & FARMS	228	21	358	31	130	10
Special Education	42	4	70	6	28	2
Phase 2	897	14	959	14	62	0
African American	279	31	273	29	-6	-2
American Indian	3	<1	6	1	3	1
Asian American	135	15	135	14	0	-1
Hispanic	221	25	274	29	53	4
White	259	29	271	28	12	-1
ESOL	141	16	240	25	99	9
FARMS	295	33	322	34	27	1
ESOL & FARMS	75	8	121	13	46	5
Special Education	60	7	45	5	-15	-2
Phase 3	1207	19	1174	17	-33	-2
African American	301	25	335	29	34	4
American Indian	6	1	4	<1	-2	-1
Asian American	157	13	169	14	12	1
Hispanic	199	17	217	19	18	2
White	544	45	449	38	-95	-7
ESOL	128	11	22002	17	74	6
FARMS	260	22	285	24	25	2
ESOL & FARMS	65	5	106	9	41	4
Special Education	78	7	90	8	12	1
Half-day Kindergarten	3070	49	3460	51	390	2
African American	264	9	352	10	88	1
American Indian	14	1	11	<1	-3	-1
Asian American	387	13	459	13	72	0
Hispanic	191	6	246	7	55	1
White	2214	72	2390	69	176	-3
ESOL	161	5	254	7	93	2
FARMS	195	6	232	7	37	1
ESOL & FARMS	44	1	62	2	18	1
Special Education	165	5	234	7	69	2

Note: Percents are rounded to the nearest whole number and may not sum to 100%.

APPENDIX 2

Percentage of Students Performing at or Above Text-reading Benchmark by the End of Kindergarten, by Special Services Subgroups

	Phase 1			Phase 2			Phase 3			Phase 4		
	Total *N*	***N***	**%**	**Total *N***	***N***	**%**	**Total *N***	***N***	**%**	**Total *N***	***N***	**%**
ESOL												
01	548	157	29	264	44	17	234	30	13	340	85	25
02	414	142	34	249	89	36	242	41	17	302	70	23
03	528	296	56	290	145	50	303	152	50	316	138	44
FARMS												
01	1,010	356	35	467	90	19	393	56	14	363	69	19
02	1,004	512	51	631	334	53	417	117	28	364	102	28
03	909	582	64	629	381	61	593	376	63	369	154	42
FARMS and ESOL												
01	435	112	26	125	9	7	108	4	4	74	9	12
02	337	111	33	141	38	27	102	12	12	71	12	17
03	229	130	57	95	51	54	101	53	53	49	15	31
Special Education												
01	99	22	22	86	18	21	138	23	17	329	91	28
02	101	41	41	106	64	60	117	52	44	292	122	42
03	88	44	50	104	40	39	131	74	57	310	166	54

Note: Percents are rounded to the nearest whole number.

APPENDIX 3

Percentage of Racial/Ethnic Subgroups of Students Performing at or Above Text-reading Benchmark by the End of Kindergarten

	Phase 1			Phase 2			Phase 3			Phase 4		
	Total *N*	***N***	**%**	**Total N**	**N**	**%**	**Total *N***	**N**	**%**	**Total *N***	**N**	**%**
African American												
01	435	191	44	430	112	26	485	128	26	503	136	27
02	399	218	55	497	319	64	443	198	45	491	214	44
03	398	273	69	478	344	72	495	362	73	478	255	53
American Indian—cell sizes too small to report												
Asian American												
01	157	97	62	200	81	41	238	109	46	630	355	56
02	183	135	74	233	184	79	240	144	60	704	505	72
03	147	116	79	203	172	85	279	218	78	638	491	77
Hispanic												
01	777	253	33	377	68	18	317	38	12	355	86	24
02	813	407	50	418	226	54	358	83	23	406	130	32
03	707	446	63	426	251	59	362	201	56	356	170	48
White												
01	281	157	56	381	123	32	584	223	38	2,983	1,434	48
02	254	180	71	388	296	76	554	357	64	2,817	1,837	65
03	175	135	77	306	236	77	600	483	81	2,603	1,911	73

Note: Percents are rounded to the nearest whole number.

APPENDIX 4

Students Receiving Special Services Able to Meet Benchmark by the End of Grade 2

	Phase 1			Phase 2			Phase 3			Half Day		
	Total *N*	*N*	%	Total *N*	*N*	%	Total *N*	*N*	%	Total *N*	*N*	%
ESOL												
02	298	70	24	141	39	28	128	36	28	161	87	54
03	462	194	42	240	109	45	202	102	51	254	146	58
FARMS												
02	633	209	33	295	99	34	260	100	39	195	100	51
03	686	304	44	322	145	45	285	129	45	232	117	50
FARMS and ESOL												
02	228	51	22	75	15	20	65	15	23	44	15	34
03	358	141	39	121	43	36	106	45	43	62	28	45
Special Education												
02	42	10	24	60	16	27	78	27	35	165	102	62
03	70	16	23	45	13	29	90	34	38	234	121	52

APPENDIX 5

t-Test Values to Support Differences in Average Highest Text Level Read

Difference in Average Highest Text Level Based on Special Services Subgroup

Phase 1	All Students	ESOL	FARMS	FARMS and ESOL	Special Education
Difference in average	3.32	4.38	2.43	3.79	0.90
T value	-7.78*	-6.52*	-4.73*	-5.09*	-.477
df	2,194.37	686.64	1,313.40	530.75	110

* $p < .01$

Difference in Average Highest Text Level Based on Racial/Ethnic Subgroup

Phase 1	All Students	African American	Asian American	Hispanic	White
Difference in average	3.32	3.45	5.44	2.83	3.93
T value	-7.78*	-4.36*	-4.14*	-4.83*	-3.40*
df	2,194.37	574	222	1,024.22	358.37-

* p< .01

APPENDIX 6

Racial/Ethnic Subgroups of Students Able to Meet Benchmark by the End of Grade 2

	Phase 1			Phase 2			Phase 3			Half Day		
	Total *N*	*N*	%	Total *N*	*N*	%	Total N	*N*	%	Total *N*	*N*	**%**
African American												
02	282	111	39	279	120	43	301	138	46	264	150	57
03	294	166	57	273	153	56	335	194	58	352	198	56
Asian American												
02	113	48	43	135	85	63	157	111	71	387	331	86
03	111	75	68	135	99	73	169	130	77	459	381	83
Hispanic												
02	484	149	31	221	63	29	199	64	32	191	106	56
03	545	237	44	274	118	43	217	100	46	246	148	60
White												
02	192	97	51	259	149	58	544	352	65	2,214	1,784	81
03	195	128	66	271	192	71	449	334	74	2,390	1,884	79