MEASURING UP

WAKE COUNTY PUBLIC SCHOOL SYSTEM

EVALUATION AND RESEARCH DEPARTMENT

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WAKE COUNTY PUBLIC SCHOOL SYSTEM
K-5 ASSESSMENT RESULTS: 2004-05

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ABSTRACT

Most Wake County Public School System (WCPSS) students showed grade-level proficiency on measures included in the K-5 literacy and mathematics assessment results for 2004-05. More than 70% of students met print concepts and reading book-level guidelines and achieved proficient writing rubric scores and mathematics strands. However, the percentages of students performing at or above grade level were considerably lower on expository (58%) and narrative (60%) assessments. Students tended to score one to two levels higher on End-of-Grade (EOG) assessments than on K-5 assessments (except Level IV). K-5 assessment results also reveal that achievement gaps exist between subgroups as early as the K-2 level.

BACKGROUND AND SUMMARY OF RESULTS

The K-5 assessments utilized by WCPSS monitor students' achievement of benchmarks and objectives in the NC Standard Course of Study (NCSCS) and inform instruction. The State Board of Education requires individualized assessments at the K-2 level and WCPSS chose to provide assessments at grades 3-5. WCPSS staff modified state instruments to meet their needs. Teachers document students' status on an ongoing basis throughout the year on individualized literacy and mathematics assessments and provide year-end status information for each student to the Evaluation & Research (E&R) Department. Assessments include:

- The *Literacy Assessment Profile,* which is divided into the *Receptive Literacy Summative Profile* and the *Expressive Literacy Summative Profile*. The assessments correlate to the NCSCS and offer students an opportunity to demonstrate development of both reading and writing skills.

- The *Mathematics Observation Profile,* which documents students' level of performance for each of the mathematics curriculum strands.

Specific assessment instruments used in 2004-05 vary by grade and subject, as shown in Table 1.

Table 1
K-5 Assessment Instruments, 2004-05

Assessment		Grade	Description
Receptive Literacy	Print Concepts Checklist	K	Specifies the number of Print Concepts, such as correctly handling books and following printed words, mastered by the beginning stage of reading.
	Running Record Book Level	K-2	Describes the most recent Instructional Book Level indicating ability to accurately read text and understand its meaning.
	Reading Strands	2-5	Indicates overall performance for each of the three strands: Developing Reading Habits, Applying Word Identification/Vocabulary Strategies, and Making Connections and Comprehending Texts.
	Expository Rubric	3-5	Provides the overall rubric score for each assessment measuring basic to higher-level understanding of nonfiction and fiction text through responses to open-ended questions.
	Narrative Rubric		
Expressive Literacy	Writing Stages	K-1	Describes students' progress through the developmental stages of writing, from Early Emergent/Emergent to Independent.
	Writing Rubric	K-2	Provides the score for students' most recent writing sample completed without assistance.
	Writing Strands	2-5	Indicates overall performance for each of the five strands: Prewriting, Drafting, Revising, Editing, and Sharing/Publishing.
Mathematics	Mathematics Strands	K-5	Indicates overall performance for each of the five strands: Number and Operations, Measurement, Geometry, Data Analysis and Probability, and Algebra.

Overall, high percentages of students demonstrated grade-level performance on most measures.

- Most kindergarten students (71.3%) met the print concepts guideline and 79.0% of kindergarten students, 81.4% of 1st-grade students, and 84.7% of 2nd-grade students met instructional reading book levels.
- The majority of students in grades K-2 (81.6%) had proficient writing rubric scores.
- Lower percentages, but more than half, of students in grades 3-5 performed at or above grade level on expository (58.0%) and narrative (59.9%) assessments. Most K-5 students (71.5%) were proficient in all five mathematics strands.

- Students in grades 3-5 tended to score one to two levels higher on End-of-Grade (EOG) assessments compared to K-5 assessments, with the exception of Level IV students. For example, more than 80% of students scoring at Level 2 on expository and narrative assessments scored at Level III or Level IV on the Reading EOG. Almost all students scoring at Level 4 on the literacy assessments also reached Level IV on the Reading EOG.
- Subgroup results revealed differences in achievement at both the K-2 and 3-5 levels, with the lowest performance demonstrated by Limited English Proficient (LEP) students, followed by Students with Disabilities (SWD).

E&R discussions with the WCPSS Curriculum and Instruction (C&I) Department lead to the following questions:

- *Why do students in grades 3-5 score lower on K-5 literacy and mathematics assessments than on the EOGs?* This likely reflects a combination of factors. Performance tasks on the K-5 assessments are more demanding and comprehensive in nature, requiring students to demonstrate understanding of the text through responses to open-ended questions rather than strictly multiple-choice items. In addition, several assessments must be completed at least twice a year, with some conducted on a quarterly basis. Finally, teachers must observe and document each student's mastery of specific skills. This amount of documentation may be a challenge for some teachers to complete. Some teachers' standards may be too high, and other teachers may not fully understand how to provide students' opportunities to demonstrate above grade-level performance within their lessons. Training and collaboration across teachers could help in these areas.
- *Can K-5 assessment results be useful to teachers in encouraging student growth on the EOGs?* In 2004-05, ABCs growth was lower for Level IV students not in the Academically Gifted (AG) program. Knowing that students tend to score lower on K-5 assessments should help teachers target those scoring on grade level or just above and provide them with more challenging opportunities.
- *Can achievement gaps be decreased at the K-2 level?* Services provided in the early grades can lessen the disparity at the later grades. Teachers and school administrators can refer students to appropriate services and work with parents to support their children's learning.
- *Can teachers and administrators serve first-year LEP students differently to facilitate English acquisition and learning?* Early interventions and immediate use of appropriate services may help acclimate students to their new environment and potentially reduce the achievement gap.
- *Are there ways to work with the community to promote learning before students enter school to decrease achievement gaps?* Early preschool programs, other academic initiatives like Smart Start, and community and faith-based learning centers can provide educational foundations for young children. However, parents must be aware of these preparatory programs, knowledgeable of their importance, and have the means to use them.

K-5 ASSESSMENT RESULTS: 2004-05

Data Collection

To provide year-end status information on K-5 assessments for each student to the Evaluation &
Research (E&R) Department, WCPSS elementary teachers submitted data electronically using
either the K-5 Assessment Data Capture Form or eMARC (Management of Assessments,
Resources & Curriculum). The data capture form is an electronic survey submitted by each
teacher at the end of the school year. The eMARC system provides an online application that
monitors student progress throughout the year. Necessary year-end data were extracted from
eMARC during the summer of 2005.

Return Rates

Teachers from all 84 elementary schools provided K-5 data. Table 2 provides a description of
the K-5 data submitted for each grade compared to actual student enrollment. In 2004-05,
teachers submitted greater numbers of student data than in 2003-04. Overall, teachers submitted
data for 52,017 students, including 38,553 students from schools using data capture, 12,686
students from eMARC schools, and 778 students from schools who used both data capture and
eMARC for data submissions. The overall return rate was 93%, with no data reported for almost
7% of students enrolled in WCPSS in May 2005 in grades K-5. It is unclear whether these
students were not assessed or if the assessments were not reported. Missing data are discussed
throughout this report.

Table 2
K-5 Data Submitted by Grade, 2004-05

Grade	Student Data Reported	Student Enrollment	Student Data Missing
K	9,383	9,799	416
1	9,424	9,749	325
2	8,827	9,401	574
3	8,213	8,918	705
4	7,958	8,904	946
5	8,212	9,039	827
K-2 Combined	27,634	28,949	1,315
2-5 Combined	33,210	36,262	3,052
3-5 Combined	24,383	26,861	2,478
K-5 Combined	52,017	55,810	3,793

Note: Enrollment data obtained from May Locator Data 2005.

Initially, 36 elementary schools were selected to use eMARC for data submission. Of the 36
eMARC schools, 19 used eMARC to submit year-end data, whereas 14 used the data capture
form, and 3 used eMARC and data capture. Six of the 14 schools that submitted data capture
forms intended to use eMARC. However, three schools were unable to use eMARC due to
scheduling difficulties. Three additional schools implemented eMARC in the spring of 2005 and

did not have adequate time to become acclimated to the system to submit data at the end of the year. The remaining 48 elementary schools submitted data via data capture.

Descriptive statistics were used to summarize trend data. However, eMARC did not collect data on reading strands, writing stages, and writing strands; therefore, these results are only reflective of data capture form submissions. Return rates were somewhat lower for schools using eMARC compared to schools using data capture for other variables as well.

Limitations

In addition to the lack of information for some measures in eMARC, readers must be aware of other limitations of the K-5 assessment data summary. These instruments were developed for instructional use, and are more subjective in nature than standardized tests such as EOGs. While standards exist for the utilization of the instruments, and some training is provided in their use, the instruments did not go through the same type of development and testing as norm-referenced and more rigorously standardized tests. For example, face validity is established through a review of the assessment content against the curriculum, but other types of validity studies have not been conducted. In terms of reliability, training was conducted several years ago for K-2 literacy teachers to facilitate consistency in their ratings, with the hope that they could produce better consistency in their schools. However, this has been applied inconsistently across schools, and is difficult to maintain with changes in personnel and grade-level assignments.

Thus, while the K-5 assessments can be quite useful in driving individual teacher's instruction during the year, they are somewhat less helpful across teachers or across the system. This bulletin summarizes teachers' views of student performance, but minor changes in performance should not be over-interpreted.

LITERACY ASSESSMENT RESULTS

The *Literacy Assessment Profile* is divided into the *Receptive Literacy Summative Profile* and the *Expressive Literacy Summative Profile*. The assessments correlate to the NCSCS and offer students an opportunity to demonstrate development of both reading and writing skills.

Receptive Literacy Assessment Results

The *Receptive Literacy Summative Profile* documents student growth in receptive literacy, which refers to the receiving of a message by listening, reading, and/or viewing.

- Print concepts checklists are used to assess kindergarten students at the beginning (*early emergent/emergent*) stage of reading development. The checklist documents such skills as correctly handling books and following printed words.
- Running records and oral retellings, a measure of students' ability to accurately read text and understand its meaning, is the other part of the profile used to assess students in grades K-2 and students in grades 3-5 whose instructional reading book level is below 24.
- Open-ended responses to narrative and expository texts are assessed for students in grades 3-5 whose instructional reading level is 24 or above.

- Reading and listening behavioral objectives for grades 2-5 assess students' performance in curriculum content areas called "strands." The three reading strands, first utilized in 2004-05, are: Developing Reading Habits, Applying Word Identification and Vocabulary Strategies, and Making Connections and Comprehending Texts. Data for reading strands were not collected in eMARC and therefore are not presented for schools that used eMARC.
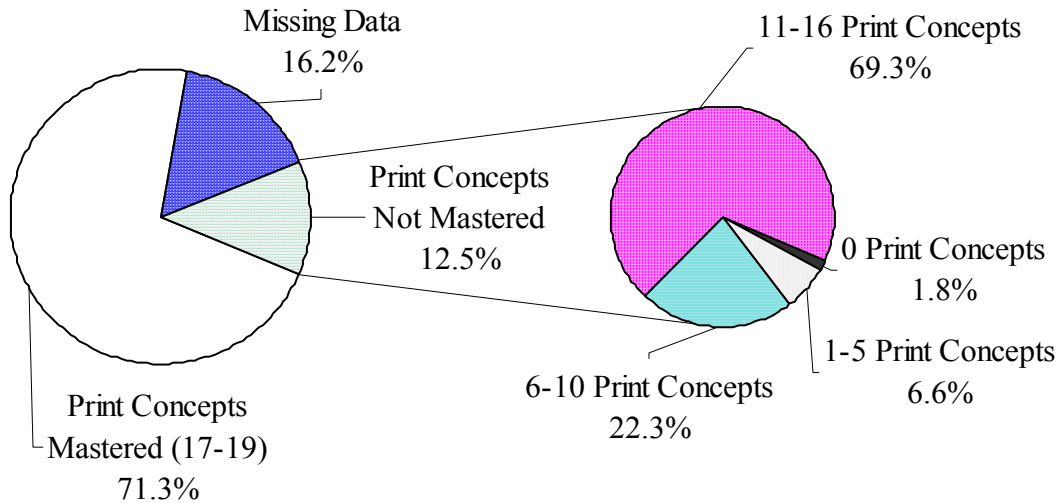
Print Concepts

The print concepts checklist is generally administered to kindergarten students functioning at the *early emergent/emergent* reading stage (Book Levels 1-4). Students typically master at least 17 print concepts before they advance to the *developing* reading stage. Kindergarten students must meet two guidelines to be performing at grade level:

- Mastery of at least 17 of 19 print concepts, and
- Reading at book level 3-4 (oral reading accuracy between 90-94%, with a retelling score of 3 or 4).

Figure 1 shows the 2004-05 print concepts results for kindergarten students.

- In 2004-05, 6,687 of the 9,383 kindergarten students (71.3%) were performing at grade level. These students include 4,103 kindergarten students who mastered 17-19 print concepts and 2,584 kindergarten students without print concepts data who had a reading book level of 5-6 or greater, indicating prior mastery of print concepts.
- Among the 1,176 kindergarten students (12.5%) not performing at grade level, most were making progress toward mastery of 17-19 print concepts: 21 demonstrated no print concepts, 78 demonstrated 1-5 print concepts, 262 demonstrated 6-10 print concepts, and 815 (69.3%) demonstrated 11-16 print concepts.
- Of the 1,520 remaining students (16.2%), 1,483 had a reading book level of 3-4 or below but were missing print concepts data and 37 had neither print concepts nor book level data.

Figure 1
Kindergarten Print Concepts Results, 2004-05

Missing Data
16.2%

11-16 Print Concepts
69.3%

Print Concepts
Not Mastered
12.5%

0 Print Concepts
1.8%

Print Concepts
Mastered (17-19)
71.3%

6-10 Print Concepts
22.3%

1-5 Print Concepts
6.6%

Instructional Reading Book Level Standards

There are 32 reading book levels through which students advance as they become increasingly proficient readers. Books that emphasize and enhance specific reading objectives are available for each of the 32 book levels. Typically, the instructional reading book levels and corresponding reading stages for each grade are as follows:

- Kindergarten…Book Levels 1-4……*early emergent/emergent* reading stage
- Grade 1………Book Levels 5-16……*developing* reading stage
- Grade 2………Book Levels 17-24…..*early independent* reading stage
- Grade 3………Book Levels 25-32…..*independent* reading stage

Guidelines established by the WCPSS C&I Department call for students to reach the high end of each range by the end of the school year. The criteria for identifying students needing extra reading support are as follows:

- Students entering grade 1 not yet reading at Book Level 3-4, or with mastery of fewer than 17 print concepts,
- Students entering grade 2 reading at book levels less than 15-16, and
- Students entering grade 3 reading at book levels less than 23-24.

The results in Table 3 show that most students in grades K-2 met reading book-level standards in 2004-05.

- Of the 27,324 students assessed, 79.0% of kindergarten students, 81.4% of 1st-grade students, and 84.7% of 2nd-grade students met instructional reading book-level standards in 2004-05.
- Since 2001-02, the percentage of students meeting book-level standards increased only slightly in all three grades, with the most improvement (4.6%) among kindergarten students.
- Since 2003-04, the percentage of students reaching book-level standards declined slightly among kindergarten students and increased slightly for 1st and 2nd-grade students. However, careful comparisons between years should be made because return rates were lower in 2003-04 than in 2004-05.
- Overall, high percentages of students meeting book-level have standards endured. There has been little change over the years.
- In 2004-05, only 21.0% of kindergarten students, 18.6% of 1st-grade students, and 15.3% of 2nd-grade students were identified as needing extra support in reading at the next school level because they did not meet book-level standards.
- The percentage of missing data was very low, with 0.4% of kindergarten students', 1.2% of 1st-grade and 1.8% of 2nd-grade students' data unreported. Overall, 310 students in grades K-2 had unreported reading book levels with 91% of these students in schools designated to use eMARC.

Table 3
Students in Grades K-2 at or above
Reading Book-Level Standards, 2001-02 to 2004-05

	Student Data Reported	% Achieved Standard
Grade K (Standard Book Level 3-4)		
2001-02	7,805	74.4%
2002-03	8,706	76.9%
2003-04	8,067	80.3%
2004-05	9,346	79.0%
Percentage point change 2001-02 to 2004-05		+4.6
Grade 1 (Standard Book Level 15-16)		
2001-02	7,888	79.7%
2002-03	8,445	79.7%
2003-04	7,981	80.9%
2004-05	9,310	81.4%
Percentage point change 2001-02 to 2004-05		+1.7
Grade 2 (Standard Book Level 23-24)		
2001-02	7,597	84.2%
2002-03	8,189	84.2%
2003-04	7,411	83.8%
2004-05	8,668	84.7%
Percentage point change 2001-02 to 2004-05		+0.5

Table 4 presents the percentages of students in grades K-2 scoring at each book level. The highest percentages of students scored at or just above the threshold reflecting each grade's book-level standard. This may reflect fewer assessments given after students reach the benchmark.

- In 2004-05, 11.3% of kindergarten students did not have the literacy skills to reach Book Level 1-2. This percentage increased slightly since 2002-03.
- About one fourth (25.8%) of 1st-grade students were at the grade 1 threshold, Book Level 15-16. This represents a steady increase from prior years.
- By end of the 2004-05 school year, one fourth (25.3%) of 2nd-grade students were reading at the highest book level, 31-32, a slight decrease from previous years.

Table 4
Percentages of Students in Grades K-2 at Reading Book Levels
2001-02 to 2004-05

Grade Assessed	0	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-20	21-22	23-24	25-26	27-28	29-30	31-32
Instructional Reading Book Levels																	
Grade K																	
2001-02	12.1	13.7	30.4	16.4	10.6	5.3	2.7	2.1	2.1	1.4	0.9	0.4	1.2	0.5	0.1	0.1	0.2
2002-03	11.0	12.1	31.3	18.2	10.5	6.4	3.1	1.8	1.7	1.4	0.7	0.6	0.6	0.3	0.2	0.1	0.1
2003-04	8.8	11.1	32.0	18.5	10.6	6.6	2.7	2.4	2.6	1.3	1.1	0.6	0.8	0.5	0.2	0.1	0.2
2004-05	11.3	9.7	28.8	18.4	11.6	6.5	3.4	2.6	3.1	1.3	0.9	0.7	0.9	0.4	0.3	0.1	0.1
Grade 1																	
2001-02	1.3	0.8	1.6	2.4	3.2	3.6	2.8	4.8	20.9	13.0	9.5	6.8	10.8	7.0	2.8	2.6	4.8
2002-03	1.2	1.2	1.7	2.2	2.7	3.7	2.6	5.0	21.2	13.2	10.0	8.0	12.0	6.2	3.1	1.9	4.3
2003-04	1.3	0.8	2.1	2.1	3.0	3.2	2.3	4.2	25.2	13.7	9.7	7.2	11.3	6.2	3.1	1.7	3.1
2004-05	1.3	1.0	1.6	2.1	2.6	3.6	2.7	3.6	25.8	13.1	9.8	8.0	10.4	5.8	3.6	1.6	3.3
Grade 2																	
2001-02	0.6	0.4	0.5	0.6	0.5	0.9	0.7	0.2	1.8	1.8	2.0	4.5	19.1	15.9	10.9	7.2	30.8
2002-03	0.7	0.4	0.6	0.5	0.5	0.8	0.7	0.9	1.6	1.8	2.7	4.6	20.3	16.3	10.3	6.6	30.7
2003-04	1.0	0.5	1.1	0.5	0.4	0.8	0.5	0.8	1.3	1.7	2.8	4.8	23.9	15.5	10.5	6.4	27.6
2004-05	0.8	0.4	0.6	0.6	0.7	0.7	0.6	0.8	1.7	2.0	2.5	4.1	25.9	15.5	10.8	7.1	25.3

Note: Shaded areas reflect book-level standard met.

Expository Assessment

The expository and narrative assessments require students in grades 3-5 to read passages similar to those on the Reading EOG exam and to respond with short answers before, during, and after reading. Responses are then scored on a rubric reflecting 4 levels of comprehension of the material. A student is considered proficient if his/her performance on the assessment is at Levels 3 or 4. In 2004-05, students were assessed first with an expository text and later with a narrative text.

Table 5 shows that the majority of students in grades 3-5 scored proficient on the expository assessment.

- Of the 20,057 students assessed, 58.0% had scores at Level 3-4.
- The percent of students scoring at Level 3- 4 increased across grades, with 52.3% of 3rd-grade students scoring at grade level compared to 55.9% of 4th-grade students and 65.8% of 5th-grade students.
- The highest percentage of students scored at Level 3, followed by Level 2.

Table 5
Grades 3-5 Expository Results, 2004-05

Grade	Level 1	Level 2	Level 3	Level 4	Level 3-4	Data Reported	Missing eMARC	Missing Data Capture
3	7.3%	40.3%	49.6%	2.7%	52.3%	6,812	917	484
4	6.3%	37.9%	50.7%	5.1%	55.9%	6,522	887	549
5	3.4%	30.8%	60.1%	5.6%	65.8%	6,723	1,166	323
3-5 Combined	5.7%	36.3%	53.5%	4.5%	58.0%	20,057	4,326	

Narrative Assessment

Similar to expository reading, Table 6 reveals that the majority of students in grades 3-5 scored proficient on the narrative assessment.

- Of the 19,898 students assessed, 59.9% had scores at Level 3-4.
- The percent of students performing at Level 3-4 increased considerably across grades, with 53.8% of 3rd-grade students scoring at grade level, compared to 57.0% of 4th-grade students and 68.2% of 5th-grade students.
- Similar to the expository assessment, the highest percentage of students scored at Level 3, followed by Level 2.

Table 6
Grades 3-5 Narrative Results, 2004-05

Grade	Level 1	Level 2	Level 3	Level 4	Level 3-4	Data Reported	Missing eMARC	Missing Data Capture
3	7.0%	39.2%	49.8%	4.0%	53.8%	6,482	1,272	459
4	5.8%	37.2%	51.6%	5.4%	57.0%	6,321	1,268	369
5	3.1%	28.8%	61.5%	6.7%	68.2%	7,095	831	268
3-5 Combined	5.2%	34.9%	54.6%	5.4%	59.9%	19,898	4,485	

- Over half of students reaching proficiency in grades 3-5 were performing at Level 3 on the expository assessment (53.5%) and the narrative assessment (54.6%). The percentage of students scoring at Level 3-4 on expository and narrative tasks was considerably lower than the other K-5 assessments, which were all at 70% or higher. Even proficient students, especially those in grades 3 and 4, have room to grow in receptive literacy.
- The percentage of missing data was high for both narrative and expository assessments. Of students in grades 3-5, results were not reported for 17.7% of the students assessed in narrative reading and 18.4% in expository reading. The high percentage of missing data on these assessments is likely attributed to how data were collected in eMARC. Schools using eMARC submitted *either* a narrative assessment score or an expository assessment score for each student rather than scores on both assessments. Data capture forms did provide student data for both assessments.

Reading Strands

Receptive literacy development for grades 2-5 is measured by demonstrated proficiency in three reading strands that were newly implemented in 2004-05:

- Reading habits
- Vocabulary strategies
- Text comprehension

The goals and objectives for each strand are listed on students' receptive literacy profiles. For each of the three strands, teachers mark the level of proficiency (1-4). A student is considered proficient in a strand if his/her performance is at Levels 3 or 4. A student is considered proficient in all strands if he/she is proficient in each strand. If a student is missing scores on one or more strands, his/her proficiency in all strands is considered missing.

Table 7 presents the percentage of students in grades 2-5 demonstrating proficiency in each reading strand and in all strands.

- Of the 24,678 students assessed, most scored proficient (78.9%) on all three strands. However, almost one fourth, 21.1%, were still not proficient in all three reading strands.
- Students in 2nd-grade represented the highest percent of students scoring proficient on all strands, followed by 5th-grade students. Curriculum demands vary by grade.
- The percentage of students who demonstrated grade level performance among the strands ranged from 73.0% to 84.9%. Students appear to have been slightly more proficient in Reading Habits than in Vocabulary Strategies and Text Comprehension.
- Most of the missing data can be attributed to eMARC not collecting these data; however, students from schools using data capture were not always completely assessed. For example, among schools using data capture, 377 2nd-grade students had missing scores on one or more reading strands.

Table 7
Students in Grades 2-5
Proficient by Reading Strands, 2004-05

Grade	Reading Strands			All Reading Strands			
	Reading Habits	Vocabulary Strategies	Text Comprehension	Proficient in All Strands	Data Reported	Missing eMARC	Missing Data Capture
2	84.9%	82.8%	80.9%	83.4%	6,334	2,116	377
3	80.7%	76.9%	74.9%	77.7%	6,103	1,992	118
4	76.0%	74.2%	73.0%	74.5%	5,881	1,985	92
5	81.9%	79.2%	78.0%	79.8%	6,360	1,751	101
2-5 Combined	81.0%	78.4%	76.8%	78.9%	24,678	8,532	

Note: Data reflect K-5 Assessment Data Capture Form submissions.

Expressive Literacy Assessment Results

The *Expressive Literacy Summative Profile* provides ongoing documentation of student growth in expressive literacy, which refers to the conveying of a message by speaking, writing, and/or presenting in a multimedia format.

- Unassisted writing samples are assessed for students in grades K-2. These writing samples should be on self-selected topics and are to be completed without any direction from the teacher. Writing samples are analyzed using the K-2 Stages of Writing continuum provided by WCPSS. The level of proficiency for unassisted writing samples is determined by matching the stage of writing to the grade level and time of year assessed.
- Grade-level behavioral objective checklists are used to assess students in grades K-2. The objectives on the checklist are grouped for instruction by stage of development in

writing and speaking. Once the instructional level for each student is determined, teachers assess the behavioral objectives that correspond to that stage of development.

- Writing and speaking behavioral objectives are also used to assess performance in five strands for students in grades 2-5. The writing strands newly implemented in the 2004-05 school year are Prewriting, Drafting, Revising, Editing, and Sharing and Publishing. Data for writing stages and writing strands were not collected in eMARC and therefore are not presented for schools that used eMARC.

Writing Rubric

Rubric scores, indicating level of proficiency (1-4), are provided for each student's most recent unassisted writing sample. The results in Table 8 reveal that most students in grades K-2 have proficient writing rubric scores.

- Of the 27,022 students assessed, 81.6% had writing rubric scores at Level 3 or Level 4. The percentage of Level 3-4 scores decreased across grades, with 85.9% of kindergarten students scoring proficient compared to 82.8% of 1st-grade students and 75.8% of 2nd-grade students.
- The majority of students scoring proficient were performing at Level 3 (61.2%). One challenge is for proficient students to continually improve and advance to Level 4.
- Overall, 612 (2.2%) students in grades K-2 had unreported writing rubric scores. Three fourths of these students were in schools designated to use eMARC.

Table 8
Grades K-2 Writing Rubric Results, 2004-05

Grade	Level 1	Level 2	Level 3	Level 4	Level 3-4	Data Reported	Missing eMARC	Missing Data Capture
K	3.7%	10.4%	57.8%	28.1%	85.9%	9,125	216	42
1	3.0%	14.2%	64.3%	18.5%	82.8%	9,276	93	55
2	3.4%	20.8%	61.2%	14.5%	75.8%	8,621	148	58
K-2 Combined	3.4%	15.0%	61.2%	20.5%	81.6%	27,022	612	

Writing Stages

In prior years, writing stages were categorized into four stages: emergent, developing, early independent, and independent. In 2004-05, writing stages were categorized into nine stages: early emergent through early independent.

Table 9 presents the percentage of students in K-1 at each level of writing development. Students are expected to reach late emergent status by the end of kindergarten and late developing status by the end of 1st grade. At the end of the 2004-05 school year, most kindergarten and 1st-grade students met or exceeded expectations.

- Kindergarten students were most commonly identified at or just above the desired stages of writing; Late Emergent (39.9%) and Early Developing (20.7%); however, 31.6% scored below the expected level. Only 1.3% of kindergarten students reached the early independent stage.
- The highest percent of 1st-grade students were identified in the late developing writing stage (40.8%) followed by the early independent stage (19.4%).
- Overall, 60.2% of 1st-grade students performed at or above the desired writing stage, Late Developing, and the highest percentage of 1st-grade students who scored below this stage (12.9%) are approaching this level.
- The high percentage of missing data for kindergarten and 1st-grade students (28.6%) was a result of eMARC not collecting writing stage data.

Table 9
Percent of Students in Grades K-1 at Each Writing Stage, 2004-05

Grade Assessed	Early Emergent	Emergent	Emergent Continued	Late Emergent	Early Developing	Developing	Developing Continued	Late Developing	Early Independent	Data Reported	Missing eMARC	Missing Data Cpature
K	9.1	13.4	9.1	39.9	20.7	5.3	0.7	0.6	1.3	6,821	2,428	134
1	1.7	1.8	0.7	1.1	6.9	14.8	12.9	40.8	19.4	6,614	2,470	340
K-1 Combined	5.5	7.7	4.9	20.8	13.9	9.9	6.7	20.4	10.2	13,435	5,372	

Note: Data reflect K-5 Assessment Data Capture Form submissions.
      Shaded areas reflect standard met.

Writing Strands

Expressive literacy development for grades 2-5 is measured by demonstrated proficiency in five writing strands newly implemented in 2004-05:

- Prewriting
- Drafting
- Revising
- Editing
- Sharing/Publishing

The goals and objectives for each strand are listed on students' expressive literacy profiles. For each of the five writing strands, teachers mark the level of proficiency (1-4). A student is considered proficient in a strand if his/her performance is at Levels 3 or 4. A student is considered proficient in all strands if he/she is proficient in each of the five strands. If a student is missing scores on any strand, his/her proficiency in all strands is considered missing.

Table 10 shows the percentage of students in grades 2-5 demonstrating proficiency in each writing strand and in all strands.

- Of the 24,554 students assessed, about three fourths scored proficient (74.7%) on all strands combined. Students were most proficient in Publishing (75.4%) and less proficient in Editing (62.2%) and Revising (62.4%).
- The percentage of students scoring at grade level on all five strands ranged from 68.0% to 78.5%, with 2nd-grade and 5th-grade students demonstrating equal proficiency.
- The high amount of missing data was primarily reflective of eMARC not collecting writing strands data; however Table 10 shows that data capture submissions were incomplete as well, especially at grade 2.

Table 10
Students in Grades 2-5
Proficient by Writing Strands, 2004-05

| Grade | Writing Strands | | | | | All Writing Strands | | | |
	Prewriting	Drafting	Revising	Editing	Publishing	Proficient in All Strands	Data Reported	Missing eMARC	Missing Data Capture
2	77.2%	75.3%	66.2%	64.1%	78.1%	78.5%	6,354	2,114	359
3	71.3%	69.4%	59.7%	60.2%	75.2%	73.4%	6,050	1,992	171
4	66.2%	64.3%	55.8%	56.5%	68.8%	68.0%	5,813	1,986	159
5	76.7%	75.8%	67.4%	67.4%	78.8%	78.5%	6,337	1,752	123
2-5 Combined	73.0%	71.4%	62.4%	62.2%	75.4%	74.7%	24,554	8,656	

Note: Data reflect K-5 Assessment Data Capture Form submissions.

MATHEMATICS ASSESSMENT RESULTS

Mathematics Strands

The *Mathematics Observation Profile* is a data collection tool for quarterly reports of student progress. It is used for grades K-5 to assess levels of student performance by strands. In 2004-05, the number of mathematics strands increased from four to five and the names changed with the revised state curriculum. The 2004-05 strands were:

- Number and Operations
- Measurement
- Geometry
- Data Analysis and Probability
- Algebra

The goals and objectives for each strand are listed on students' mathematics profiles. For each of the five strands, teachers mark the level of proficiency (1-4). A student is considered proficient in a mathematics strand if his/her performance is at Levels 3 or 4. A student is considered proficient in all strands if he/she is proficient in each of the five strands. If a student is missing scores on one or more strands, his/her proficiency in all strands is considered missing.

Table 11 presents the percentage of students in grades K-5 demonstrating proficiency in each mathematics strand and in all strands.

- Overall, most K-5 students (71.5%) were proficient in all five mathematics strands.
- The percentages of students performing at grade level on all five strands ranged from 66.7% to 78.3%, with the highest percentages proficient among kindergarten students.

- The Number and Operations strand and Geometry strand were slightly stronger than the other strands.
- Implementation of the revised mathematics curriculum had little impact on the percentage of students scoring proficient. The 2004-05 results remained relatively the same as 2003-04.
- The percentage of missing data was relatively low. Only 11.8% of students in grades K-5 did not have data provided. Table 11 shows that almost all of the missing data can be attributed to eMARC schools providing incomplete data.

Table 11
Students in Grades K-5
Proficient by Mathematics Strands, 2004-05

Grade	Mathematics Strands					All Mathematics Strands			
	Number and Operations	Measurement	Geometry	Data	Algebra	Proficient in All Strands	Data Reported	Missing eMARC	Missing Data Capture
K	85.8%	84.7%	85.5%	86.7%	86.3%	78.3%	8,217	1,166	0
1	83.6%	82.9%	82.1%	79.9%	80.7%	72.2%	8,100	1,324	0
2	78.2%	78.7%	79.9%	75.5%	74.2%	66.7%	8,145	682	0
3	83.8%	76.8%	82.4%	80.0%	79.1%	71.3%	7,151	978	84
4	80.7%	77.6%	80.7%	78.7%	75.4%	69.5%	6,769	1,072	117
5	84.4%	79.6%	81.1%	78.4%	75.7%	70.7%	7,476	638	98
K-5 Combined	82.8%	80.2%	82.0%	79.9%	78.7%	71.5%	45,858	6,159	

EOG COMPARISONS

This section compares K-5 literacy and mathematics assessments results for grades 3-5 to Reading and Mathematics EOG results for 2004-05. Overall, most students demonstrating proficiency on K-5 assessments were also proficient on EOG assessments. However, students tended to score one to two levels higher on EOG assessments compared to K-5 assessments, with the exception of Level IV students. High percentages of students assessed as not proficient on K-5 assessments who score at or above grade level on the EOGs may indicate more rigorous K-5 assessment standards.

As examples, the percentage of 3rd-, 4th-, and 5th-grade students at Reading EOG levels (I-IV) by expository and narrative assessment levels (1-4) are presented in Tables 12 and 13, respectively.

- High percentages of students scoring at Levels 1 or 2 on the expository and the narrative assessments demonstrated proficiency on the Reading EOG assessment. Interestingly, Level 1 students (on the expository and narrative assessments) were almost as likely to be Level I students on the Reading EOG as they were to be Level IV.
- Three fourths of students performing at Level 3 on the expository and the narrative assessments performed at Level IV on the Reading EOG assessment.
- Almost all students scoring at Level 4 on the literacy assessments also reached Level IV on the Reading EOG assessment.

Table 12
Grades 3-5 Reading EOG and Expository Results, 2004-05

	Expository Assessment				
Reading EOG	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**# Students**
Level I	**13.4%**	1.6%	0.1%	0.0%	271
Level II	32.9%	**11.3%**	1.0%	0.0%	1,298
Level III	42.1%	52.3%	**23.6%**	2.9%	6,815
Level IV	11.6%	34.8%	75.3%	**97.1%**	11,596
# Students	1,094	7,259	10,718	900	19,971

Table 13
Grades 3-5 Reading EOG and Narrative Results, 2004-05

	Narrative Assessment				
Reading EOG	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**# Students**
Level I	**14.8%**	1.7%	0.1%	0.0%	272
Level II	34.2%	**12.2%**	1.0%	0.0%	1,286
Level III	38.7%	53.4%	**25.0%**	4.2%	6,832
Level IV	12.3%	32.7%	73.9%	**95.8%**	11,420
# Students	981	6,913	10,846	1,070	19,810

Tables 14 and 15 display the percentage of students at Mathematics EOG levels (I-IV) by two mathematics strands, Algebra and Geometry, for grades 3-5. The results almost mirror the K-5 literacy assessment and Reading EOG comparisons.

- High percentages of students performing at Levels 1 or 2 on Algebra and Geometry strands demonstrated proficiency on the Mathematics EOG. In this case, Level 1 students (on Algebra and Geometry strands) were more likely to be Level I students on the Mathematics EOG than they were to be Level IV.
- Three fourths of students reaching Level 3 on Algebra and Geometry strands scored at Level IV on the Mathematics EOG assessment.
- Among students performing at Levels 1-3 on the two mathematics strands, about one fourth of students scored at the same level on the Mathematics EOG. However, almost all students scoring at Level 4 on Algebra and Geometry strands also scored Level IV on the EOG.

Table 14
Grades 3-5 Mathematics EOG and Algebra Strand Results, 2004-05

Mathematics EOG	Algebra Strand				
	Level 1	Level 2	Level 3	Level 4	# Students
Level I	**25.5%**	1.9%	0.0%	0.0%	251
Level II	42.6%	**20.4%**	1.1%	0.0%	1,318
Level III	27.8%	58.0%	**24.9%**	1.0%	6,145
Level IV	4.2%	19.8%	73.9%	**99.0%**	13,830
# Students	644	4,352	13,711	2,837	21,544

Table 15
Grades 3-5 Mathematics EOG and Geometry Strand Results, 2004-05

Mathematics EOG	Geometry Strand				
	Level 1	Level 2	Level 3	Level 4	# Students
Level I	**28.6%**	2.6%	0.1%	0.0%	249
Level II	43.5%	**24.2%**	1.6%	0.1%	1,313
Level III	25.3%	57.1%	**27.5%**	1.4%	6,196
Level IV	2.5%	16.1%	70.8%	**98.5%**	13,955
# Students	517	3,506	14,624	3,066	21,713

NO CHILD LEFT BEHIND (NCLB) SUBGROUP RESULTS

Figures 2 and 3 present the percentage of students proficient on K-5 literacy and mathematics assessments by the NCLB subgroups. Results vary by type of assessment and subgroup membership.

- Gaps in achievement were evident by subgroups at both the K-2 and 3-5 grade spans. However, wider gaps appear on assessments at the 3-5 grade span.
- Subgroups in most need of improvement were LEP students and SWD students, especially at grades 3-5 on expository and narrative assessments.
- Black students in grades K-2 did relatively well on book-level standards and writing rubric assessments, however, they experienced a substantial drop in percent proficient in mathematics.
- Free or reduced-price lunch (FRL) students out-performed Hispanic/Latino students at the K-2 grade span, whereas Hispanic/Latino students performed slightly better than FRL students on assessments at grades 3-5.
- With the exception of Asian and Hispanic/Latino students, students in each subgroup had higher percentages proficient in mathematics in grades K-2 than in 3-5.
- Asian students and white students demonstrated the highest levels of proficiency compared to other NCLB subgroups across all assessments.
- Expository and narrative assessment results yielded the lowest percentage of students performing at or above grade level for all NCLB subgroups. However, disparity exits within these assessments based on subgroup membership.
- Overall, at least half (52.8-91.8%) of students in each NCLB subgroup showed proficiency on K-2 book-level standards and writing rubric measures, not including LEP students' results for reading book levels (42.4%).
- Students in all subgroups were less likely to be proficient on assessments at grades 3-5 than K-2.

Figure 2
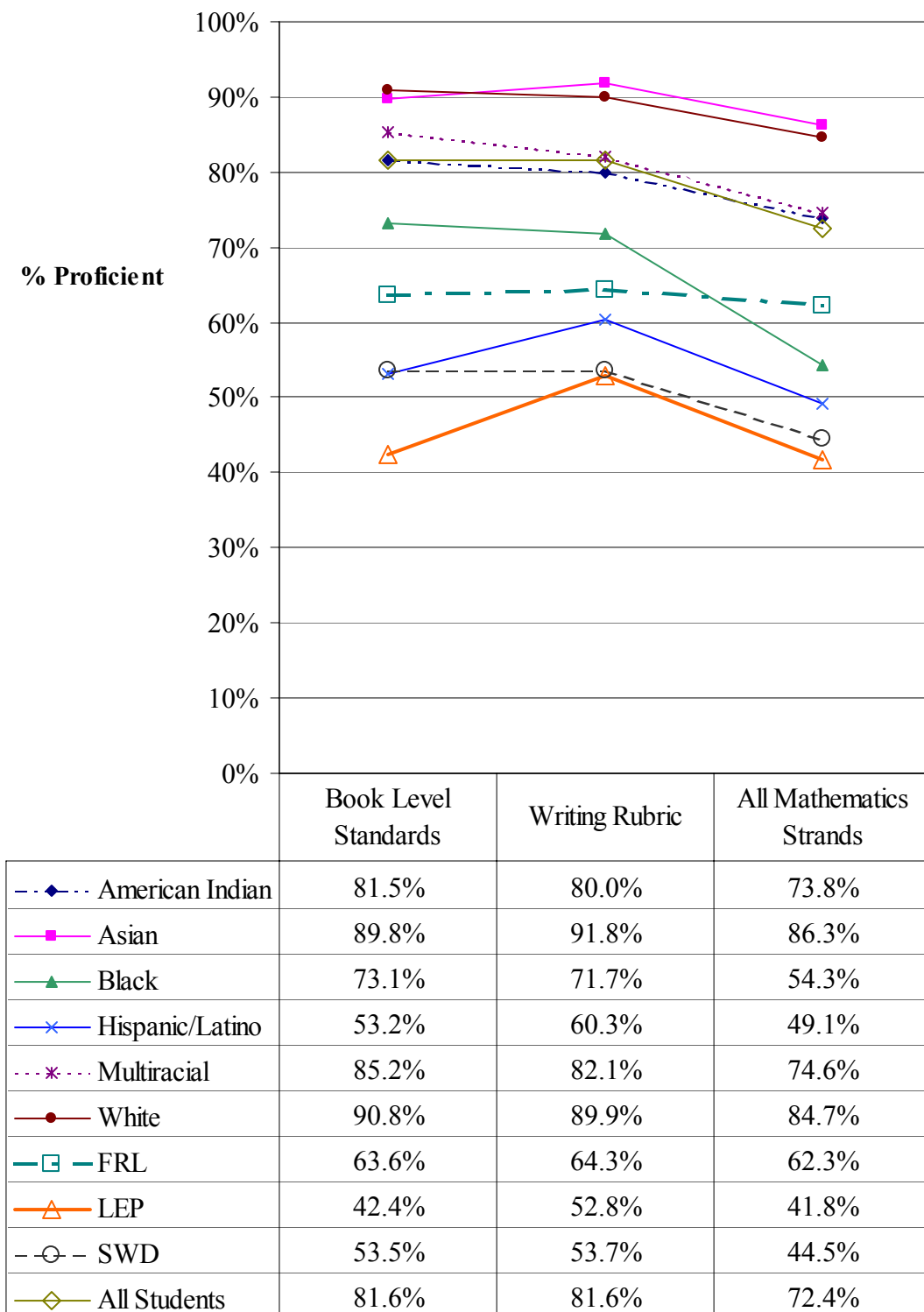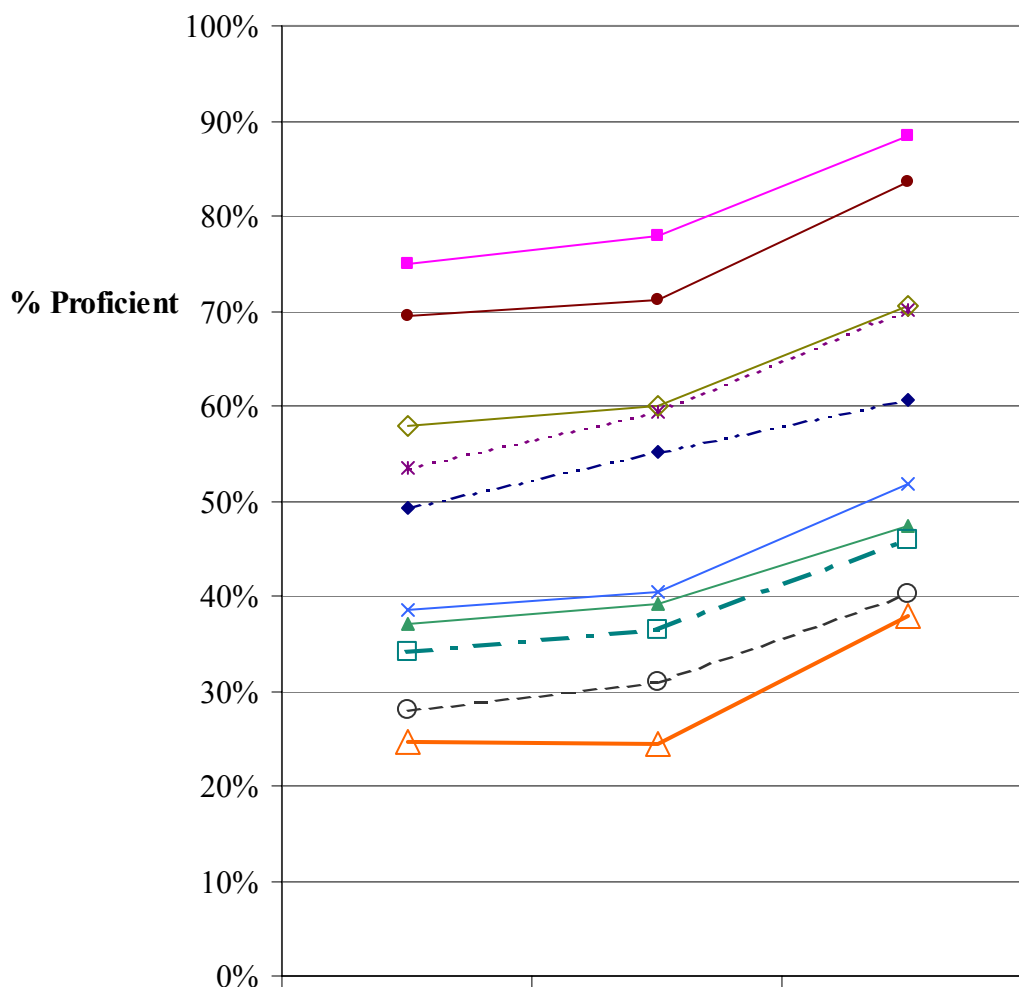**Students in Grades K-2 Proficient on Assessments**
by Subgroup, 2004-05

	Book Level Standards	Writing Rubric	All Mathematics Strands
American Indian	81.5%	80.0%	73.8%
Asian	89.8%	91.8%	86.3%
Black	73.1%	71.7%	54.3%
Hispanic/Latino	53.2%	60.3%	49.1%
Multiracial	85.2%	82.1%	74.6%
White	90.8%	89.9%	84.7%
FRL	63.6%	64.3%	62.3%
LEP	42.4%	52.8%	41.8%
SWD	53.5%	53.7%	44.5%
All Students	81.6%	81.6%	72.4%

Figure 3
Students in Grades 3-5 Proficient on Assessments
by Subgroup, 2004-05

	Expository Rubric	Narrative Rubric	All Mathematics Strands
American Indian	49.2%	55.2%	60.7%
Asian	74.9%	77.9%	88.4%
Black	37.0%	39.2%	47.4%
Hispanic/Latino	38.5%	40.4%	51.8%
Multiracial	53.5%	59.3%	70.1%
White	69.5%	71.2%	83.5%
FRL	34.2%	36.4%	46.0%
LEP	24.6%	24.5%	38.0%
SWD	27.9%	30.9%	40.2%
All Students	58.0%	59.9%	70.5%

DISCUSSION AND CONCLUSION

In 2004-05, teachers submitted K-5 assessment data for greater numbers of students than in 2003-04 and previous years. However, 3,793 students did not have data submitted for any K-5 assessment. It is unclear whether these students were not assessed or if their data was simply unreported. It is possible that these missing students were known by their teachers to be high-achieving students and therefore were not assessed in spring. If this is true, the K-5 assessment results presented in this report are diluted. The frequency of assessments within the K-5 assessment system can also lead to missing or inaccurate data, especially at the K-2 level. For example, teachers are required to assess students' instructional book level at least twice a year, with some schools collecting this data more often. This process is time consuming. The cluster of book-level performance around the threshold reflecting each grade's book-level standard may reflect some teachers' practices of reassessing only those students who did not meet the standard in the spring.

The reason for missing data on specific assessments is clearer. Reading strands, writing stages, and writing strands data were not collected in eMARC, which contributed to high percentages of missing data for these assessments. Efforts have been made to ensure that these data are collected in 2005-06.

At this point, K-5 assessment data are somewhat useful for examining school and district performance, but have limited use for evaluating program effectiveness. Attainment of greater reliability in assessment practices and standards would increase the value of K-5 assessment data.

Overall, high percentages of students demonstrated grade-level performance on K-5 assessments in 2004-05; however, results show room for improvement. The majority of students meeting standards are performing just at or above proficiency thresholds. Mastery percentages are also lower than those seen on EOG tests. Continuous improvement of students' literacy and mathematics skills is essential for WCPSS to meet Goal 2008 (in which 95% of students in grades 3-12 are to become proficient on EOG and EOC tests). Challenges remain for WCPSS students and teachers.

REFERENCES

Yaman, K., Baenen, N., & Lindblad, M. (2005). *Measuring Up: WCPSS K-5 Assessment Results 2003-04.* Raleigh, NC: Wake County Public School System.